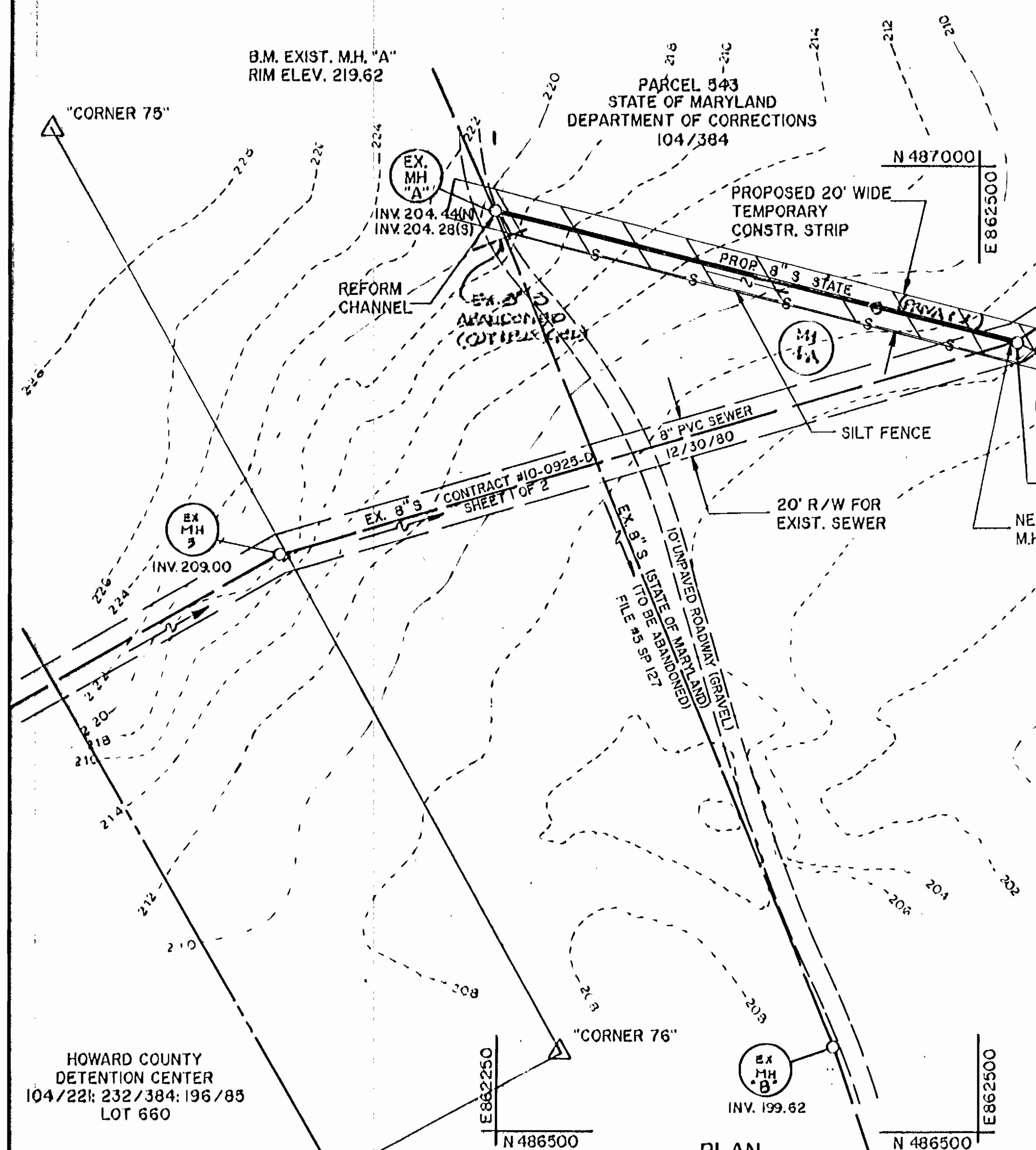
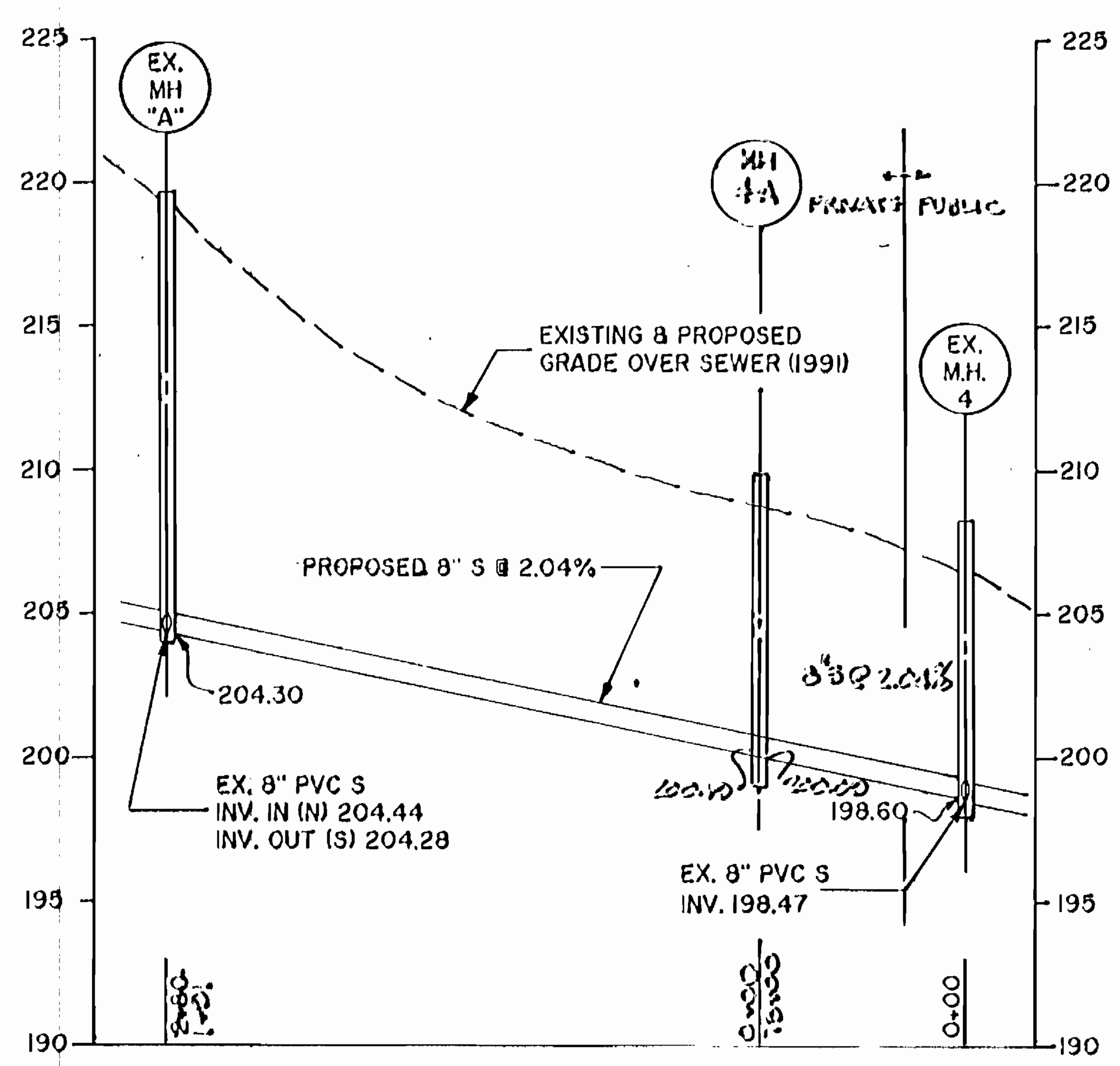


PLAN
SCALE: 1" = 50'



PROFILE
HOR. 1" = 50'
VERT. 1" = 5'

SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

Permanent Seeding

A. Seedbed Preparation: Loosen upper 3" of soil by raking, disoing or other acceptable means prior to seeding.

B. Soil Amendments: In lieu of soil test use one of the following:

1. Before seeding apply 92 lbs. of dolomitic limestone and 14 lbs. of 10-10-10 fertilizer per 1,000 square feet. Harrow or disc into upper 3" of soil. At time of seeding apply 9lbs. of 30-0-0 ureaform fertilizer per 1,000 square feet.

2. Before seeding apply 92 lbs of dolomitic limestone and 23 lbs of 10-10-10 fertilizer per 1,000 square feet. Harrow or disc into upper 3" of soil.

C. Seeding: Apply 1.4 lbs. per 1,000 square feet of Kentucky 31 Tall Fescue between March 1 and April 30 or between August 1 and October 15. Apply 1. 4 lbs. of Kentucky 31 Tall Fescue and 0.05 lbs. of Weeping Lovegrass per 1,000 square feet between May 1 and July 31. Apply 1.4 lbs. of Kentucky 31 Tall Fescue per 1,000 square feet and mulch with 2 tons per acre of well anchored straw between October 16 and February 28 or apply sod.

D. Mulching: Apply 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 5 gal. per 1,000 square feet or emulsified asphalt on flat areas. On slopes 8' or higher use 8 gal. per 1,000 square feet for anchor.

Temporary Seeding

A. Seedbed Preparation: Loosen upper 3" of soil by raking, disoing or other acceptable means prior to seeding.

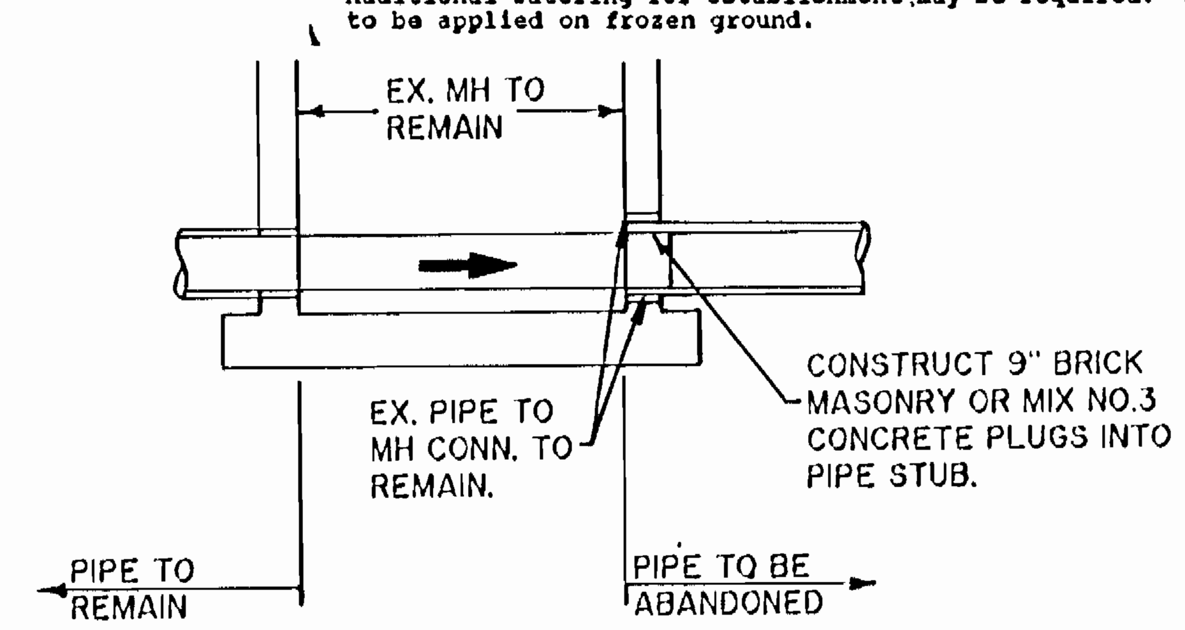
B. Soil Amendments: Apply 14 lbs. per 1,000 square feet of 10-10-10 fertilizer.

C. Seeding: Apply 3.2 lbs. per 1,000 square feet of Annual Rye between March 1 and April 30 or between August 15 and November 15. Apply 0.07 lbs. per 1,000 square feet of Weeping Lovegrass between May 1 and August 14. Apply 2 tons of well anchored straw mulch and seed as soon as possible in the spring between November 16 and February 28, or use sod.

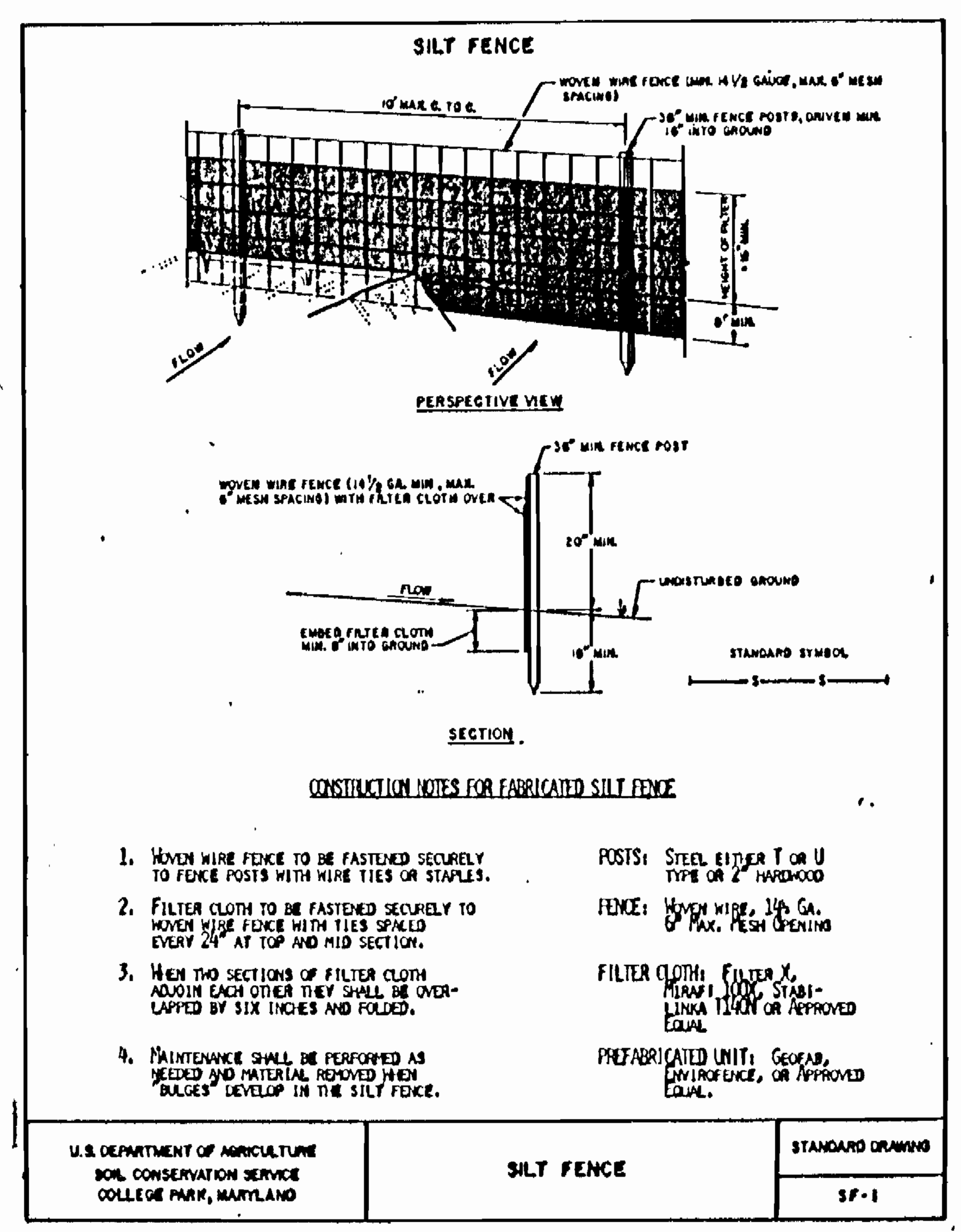
D. Mulching: Apply 70 to 90 lbs. per 1,000 square feet of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring or 5 gal. per 1,000 square feet of emulsified asphalt on flat areas. On slopes 8' or higher use 8 gal. per 1,000 square feet for anchoring.

Permanent Sod

Permanent sod is to be Kentucky 31 Tall Fescue state approved sod; lime and fertilizer per permanent seeding specifications and lightly irrigate soil prior to laying sod. Sod is to be laid on the countour with all ends tightly abutting. Water and roll or tamp sod to insure positive root contact with the soil. All slopes greater than 3 to 1, as shown, are to be permanently sodded. Additional watering for establishment may be required. Sod is not to be applied on frozen ground.



DETAIL - PLUG EXISTING OUTLET @ STATE MH "A"
NOT TO SCALE



SOIL EROSION AND 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. (313-1855)

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed with 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1 and 14 days for all other disturbed or graded areas on the project site.

4. 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.

5. 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.

6. Site Analysis:

Total Area of Site	0.26	Acres
Area Disturbed	0.15	Acres
Area to be roofed or paved	0	Acres
Area to be vegetatively stabilized	0.15	Acres
Cut volume	455	Cu. Yd.
Fill volume	455	Cu. Yd.
Borrow volume	40	Cu. Yd.
Waste volume	40	Cu. Yd.

7. Any sediment control practices which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment controls must be provided, if deemed necessary by the Howard County DPW sediment control inspector.

9. 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.

10. All excavated material will be placed on the high side of the trench.

11. Erosion control measures will include sandbag filters, gravel filters, straw mulch, or any other applicable devices which will prevent erosion and sediment damage to adjacent properties, in accordance with the contract documents.

12. Restoration shall proceed on each section of the right of way after each three pipe lengths of open trench. If it is not the proper seeding season then a straw mulch shall be spread over the disturbed area until final restoration can be performed. If as a result of limited access road then the disturbed areas on either side of the access road should be restored. The maximum width of an access road shall be 15 feet. The contractor shall regard at completion of project all such areas to conform to general topography of the area so as to avoid trapping of water. The access road shall be vegetated when it is no longer used.

13. A buffer strip of undisturbed ground shall be left between the stream bank and the construction area in those areas where construction comes extremely close to the stream and a straw bale or sandbag filter berm shall be placed along the top of the stream bank.

14. Sediment Removal - All trapped sediment is to be removed and disposed of at the authorized land fills prior to removal of sediment control structures.

15. All tree removal and repair work shall be conducted in accordance with the State of Maryland, Department of Forest and Parks.

16. Roadside ditches and drainage pipes to be returned to original condition following completion of construction.

BILL OF MATERIALS

ITEM	QUANTITY (EST.)	QUANTITY (ACTUAL)	SUPPLIER
8" PVC SEWER	275 L.F.	264 L.F.	MIC CALSO
MH	1 EA.	1 EA.	ADRITIC PRECAST

Sequence of Construction

1. Install sediment control measures downgrade of construction site, after notification of Howard County Sediment Control Division, (313-1855)

2. Construct sewer in uphill direction from M.H. 4 to existing State M.H.

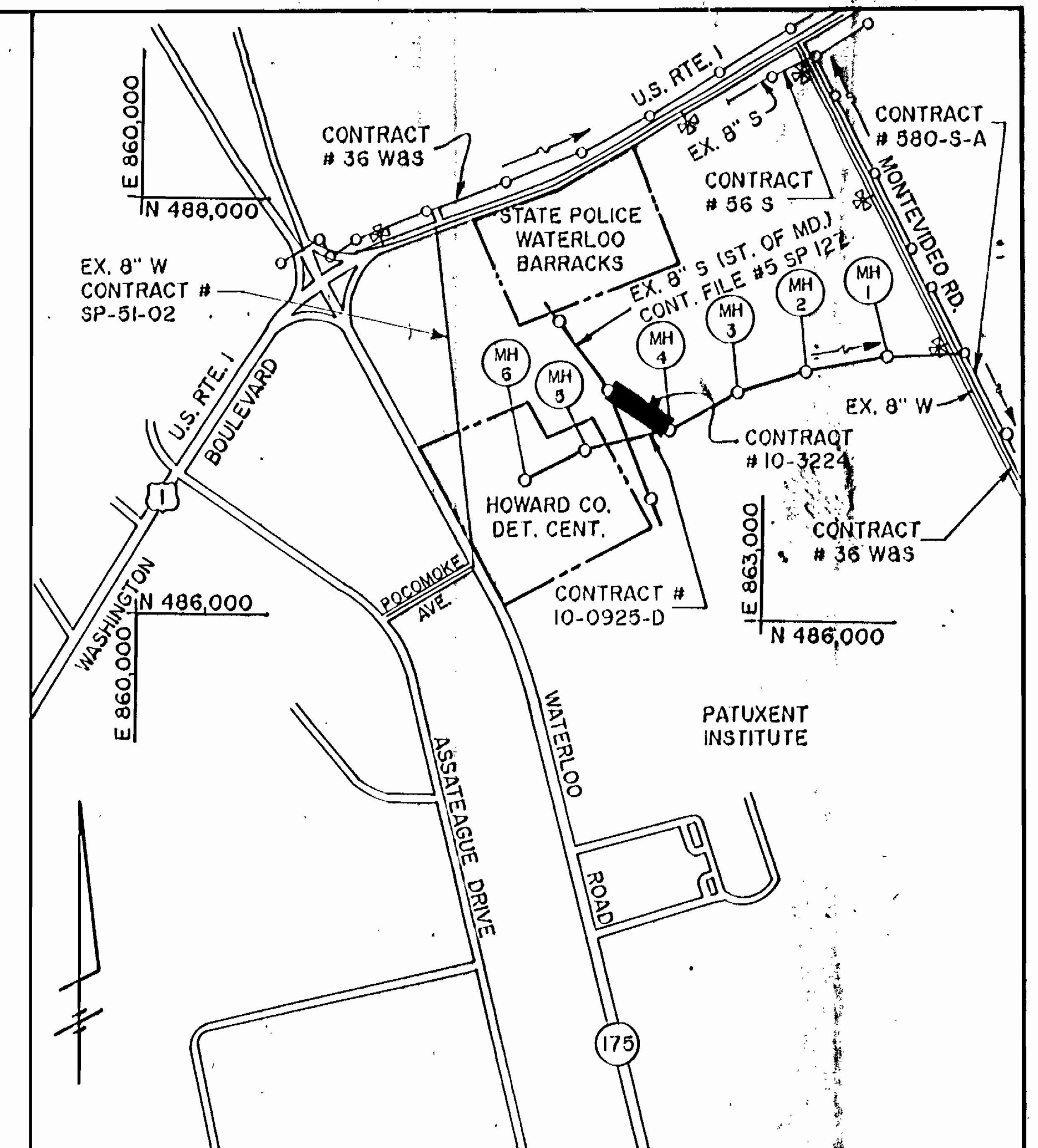
3. Bypass State and County sewers as necessary to maintain flow at all times.

4. Connect new sewer to existing precast M.H. 4 and existing State Brick M.H. Plug outlet of State sewer at State M.H. Reform manhole channels to provide smooth flow and remove bypass.

5. Restore site and remove sediment controls.

COORDINATE TABLE

DESCRIPTION	NORTHING	EASTING
CORNER 75	487018.02	862020.36
CORNER 76	486540.04	862283.64
M.H. 4	486908.81	862520.65
M.H. 5	486797.90	862137.93
EX. M.H.	486976	862248
EX. M.H.	486542	862424



WASTEWATER DISPOSAL - PATAPSCO	WATER & SEWER CODE
BUILDING TYPE - INSTITUTIONAL	WATER - N/A
#W.H.C. - N/A	SEWER - 2221000
#S.H.C. - N/A	

LOCATION MAP
SCALE: 1" = 600'

GENERAL NOTES

1. Approximate location of existing mains is shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain an uninterrupted supply. Any damage incurred shall be immediately repaired at the contractor's expense.

2. All horizontal controls are based on Maryland State Coordinates.

3. All vertical controls are based on U.S.G.S. Datum.

4. All pipe elevations shown are invert elevations.

5. The Contractor shall notify the following agencies at least five days before starting work shown on these plans:

- Baltimore Gas & Electric Company - Underground Damage Control (859-9004)
- Howard Cable Television (461-7017)
- Miss Utility (1-800-257-7777)
- Howard County Bureau of Utilities (313-4900)

6. For details not shown on the drawings and for materials and construction methods, see Howard County Design Manual Volume IV, Standard Specifications and Details for Construction.

7. Vegetative and structural sediment control measures are to be installed per Article 219 of the Standard Specifications and the requirements of the Maryland Standards and Specifications of Soil Erosion and Wediment Control dated 1983 or later versions.

8. Existing utility information shown on these plans is provided solely for the contractor's convenience and is not guaranteed to be accurate or complete.

9. Trees and shrubs are to be protected from damage to the maximum extent. Trees and shrubs located within the construction strip are not be to removed or damaged by the Contractor.

10. Contractor shall remove trees, stumps and roots along line of excavation. Payment for such removal shall be included in the unit price bid for construction of the main.

11. All sewer mains shall be D.I.P. or P.V.C. unless otherwise noted.

12. The Contractor shall provide a joint in all sewer mains within 2' ± of exterior manhole wall.

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.

Date 10/14/92

JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5 PASADENA, MD. 21122

DEVELOPER'S CERTIFICATION

"I/WE 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 a Maryland Department of Environment Approved Training Program for the control of sediment and erosion before beginning the project."

Date 10-15-92

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS

Reviewed for Howard County S.C.D. and meets technical requirements.

U.S. SOIL CONSERVATION SERVICE

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

Approved Date 10/19/92
HOWARD COUNTY S.C.D.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS 10/16/92 DATE	CHIEF, BUREAU OF ENGINEERING 10-15-92 DATE
CHIEF, BUREAU OF UTILITIES 10-15-92 DATE	CHIEF, WATER & SEWER DESIGN DIVISION 10-15-92 DATE

JOHN E. HARMS, JR. & ASSOCIATES, INC.
CONSULTING ENGINEERS
P.O. BOX 5
PASADENA, MARYLAND 21122
410-647-6000

STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER — 9/10/92

DES: DMD				
DRN: KRS				
CHK: SGZ		2	"AS-BUILT" PLANS	
DATE: 7/92		1	ADD MH 4A	
	BY	NO.	REVISION	DATE

PLAN & PROFILE
WATERLOO BARRACKS
DIVERSION SEWER

600' SCALE MAP NO. 43 BLOCK NO. 6

WATERLOO STATE POLICE BARRACKS
DIVERSION SEWER
CAPITAL PROJECT S-6165
CONTRACT 10-3224

ELECTION DISTRICT NO.1 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 1 OF 1

AS-BUILT 1/2/93