

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN SHEET
3	STORM DRAIN PROFILES
4	SEDIMENT AND EROSION CONTROL PLAN
5	SEDIMENT AND EROSION CONTROL DETAILS AND NOTES

GENERAL NOTES

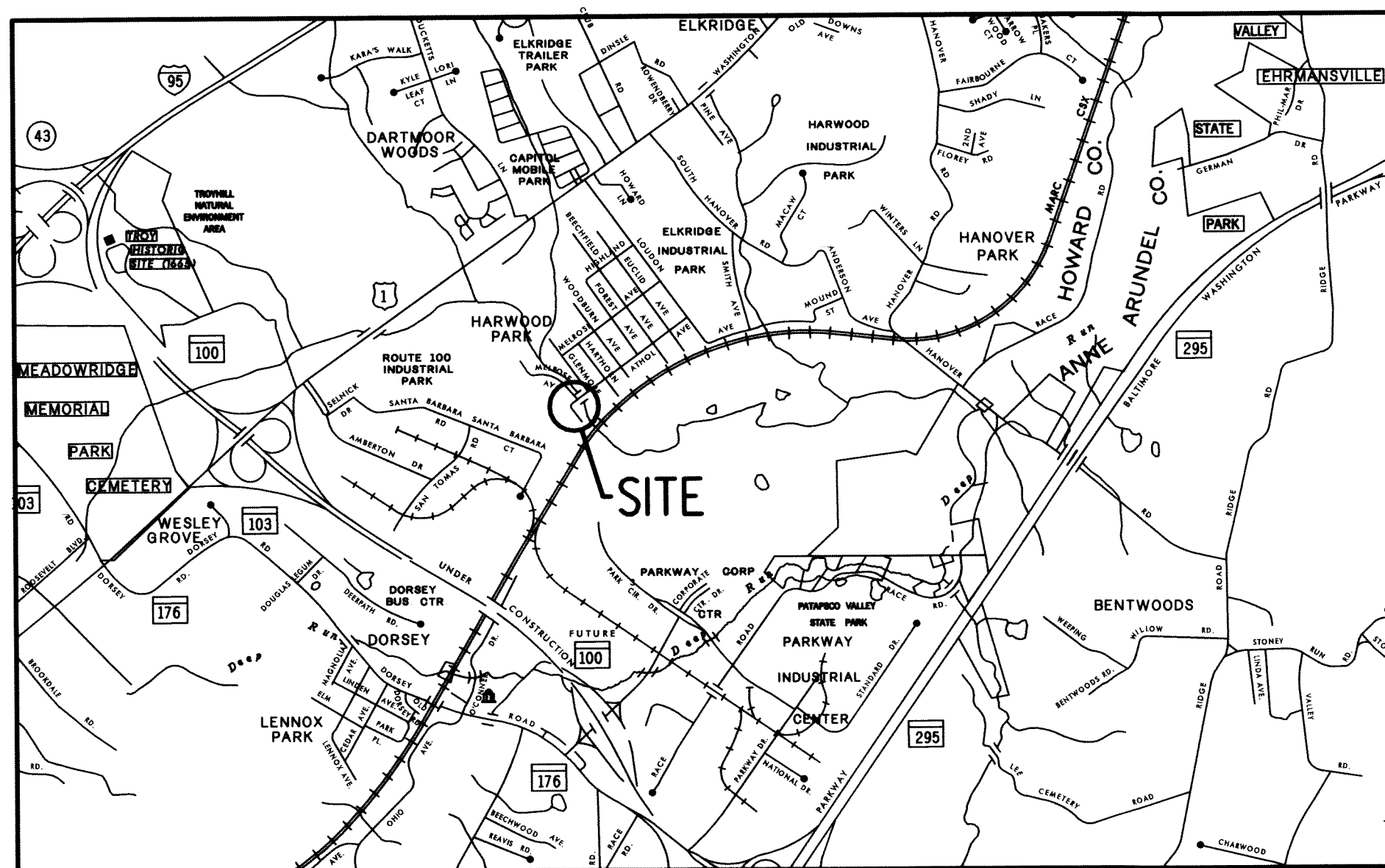
- ALL INFORMATION AND DETAILS ON THESE DRAWINGS SHALL BE CONSTRUCTED AS PER THE PLANS OR AS DIRECTED BY THE HOWARD COUNTY ENGINEER.
- ALL STATIONING AND DIMENSIONING ARE TO FIELD VERIFIED BY THE CONTRACTOR
- STORM DRAINAGE SLOPES ARE TO BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE HOWARD COUNTY ENGINEER
- APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.

MISS UTILITY 1-800-257-7777
 BALTIMORE GAS & ELECTRIC CO. - ELECTRIC DISTRIBUTION 410-291-3096
 VERIZON - TELECOMMUNICATIONS 410-224-9500
 COMCAST CABLE - 410-461-0444
 HOWARD COUNTY D.P.W. 410-313-4900

THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION OF ENGINEERING FOR VERIFICATION AND/OR INFORMATION REGARDING:

- PROPOSED/EXISTING RIGHT-OF-WAY.
 - UTILITY RELOCATION.
 - MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.
 - EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT.
 - HORIZONTAL/VERTICAL SURVEY CONTROL.
 - GRADING PERMIT.
- SEE HOWARD COUNTY STANDARD DETAILS NO'S G-1.01 AND G-1.02 FOR STANDARD SYMBOLS.
 - HORIZONTAL COORDINATES ARE BASED ON MD NAD 83/91 DATUM AND VERTICAL ELEVATIONS ARE BASED ON NAVD 1988 ELEVATIONS, TRANSFERRED FROM N.G.S. CONTROL STATION HARWOOD MDSCSM RESET. PID NO. JVO910.

 N 558,479.01
 E 1,386,642.06
 ELEV. 189.56
 - A STAGING AND STOCKPILE AREA WILL BE DETERMINED BY THE CONTRACTOR AND APPROVED BY THE HOWARD COUNTY ENGINEER.
 - TOPOGRAPHY SURVEY INFORMATION BASED ON FIELD SURVEY PERFORMED BY JOHNSON, MIRMIRAN & THOMPSON DATED JANUARY 2004.



LOCATION MAP
 SCALE 1" = 2000'

CAPITAL PROJECT NO. D-1118-54

ATHOL AVENUE - STORM DRAIN IMPROVEMENTS

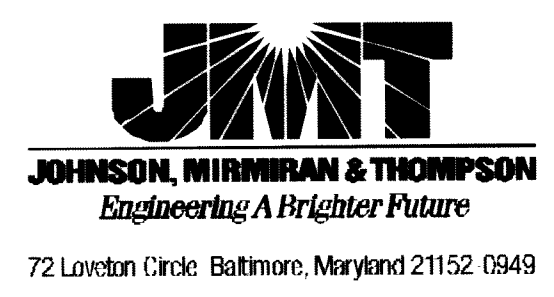
HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PUBLIC WORKS

APPROVED: FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Steve Shavar 10/6/04
 CHIEF, DIVISION OF TRANSPORTATION AND SPECIAL PROJECTS DATE

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Jim Mays 10-6-04
 U.S. Natural Resources Conservation Service Date
 THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John P. Roberts 10-6-04
 Howard Soil Conservation District Date

FILE: C:\SWD\BUREAU\ESTATING\PROJECTS\ATHOL\1018.dwg
 DATE: 09/20/2004 08:49:49 AM

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
Steve Shavar 10/6/04
 DIRECTOR OF PUBLIC WORKS
William T. Mahall 10-6-04
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION
 CHIEF, BUREAU OF HIGHWAYS



Paul F. Clement
 10/04/04

DES:	SAM				
DRN:	JMB				
CHK:	PFC				
DATE:	9/04				
	BY	NO.			DATE

CAPITAL PROJECT NO.
 D-1118-54

TITLE SHEET
**ATHOL AVENUE
 STORM DRAIN IMPROVEMENTS**

SCALE AS SHOWN
 SHEET 1 OF 5

BASELINE CONTROL COORDINATES			
LOCATION	STATION	NORTH	EAST
BASELINE OF CONSTRUCTION ATHOL AVENUE	POT STA. 100+00.00	554,700.8487	1,385,671.0018
	POT STA. 100+87.82	554,759.9750	1,385,735.9320
	POT STA. 101+73.55	554,813.0930	1,385,803.2290
	POT STA. 103+83.54	554,937.9250	1,385,972.0830
	POT STA. 104+95.55	555,003.1070	1,386,063.1690

STANDARD BITUMINOUS CURB (STD. NO. R-3.03)	
STA. 100+66.7 TO STA. 100+94.0, RT. -	27 L.F.
STA. 101+06.0 TO STA. 101+42.3, RT. -	37 L.F.
STA. 101+60.5 TO STA. 101+94.1, RT. -	34 L.F.
STA. 102+56.4 TO STA. 102+90.8, RT. -	34 L.F.
STA. 103+7.8 TO STA. 103+74.2, RT. -	56 L.F.

STORM DRAIN STRUCTURE SCHEDULE			
NO.	LOCATION	TYPE	STD. NO.
I-1	STA. 100+16.9, 16.1' RT.	TYPE 'S' INLET	SD-4.22
I-2	STA. 101+00.0, 7.9' RT.	TYPE A-5 INLET	SD-4.01
I-3	STA. 102+27.5, 10.4' RT.	TYPE A-5 INLET	SD-4.01
I-4	STA. 103+76.1, 10.1' RT.	SINGLE WR INLET	SD-4.37
E-1	STA. 104+10.3, 19.3' RT.	CONCRETE END SECTION FOR 18" RCP	SD-5.51
I-5	STA. 102+28.4, 8.9' LT.	SINGLE WR INLET	SD-4.37

STORM DRAIN PIPE SCHEDULE			
FROM	TO	TYPE	LENGTH
I-1	I-2	15" RCP, CL. IV	78 L.F.
I-2	I-3	18" RCP, CL. IV	122 L.F.
I-3	I-4	18" RCP, CL. V	144 L.F.
I-4	E-1	18" RCP, CL. IV	34 L.F.
I-5	I-3	15" RCP, CL. IV	18 L.F.

OUTLET PROTECTION SCHEDULE				
NO.	TYPE	LENGTH, L ₀	WIDTH	AREA
ROP-1	CLASS 1 RIPRAP, ROP *	10 L.F.	10 L.F.	11 S.Y.

* SEE DETAIL ON E&S NOTES SHEET

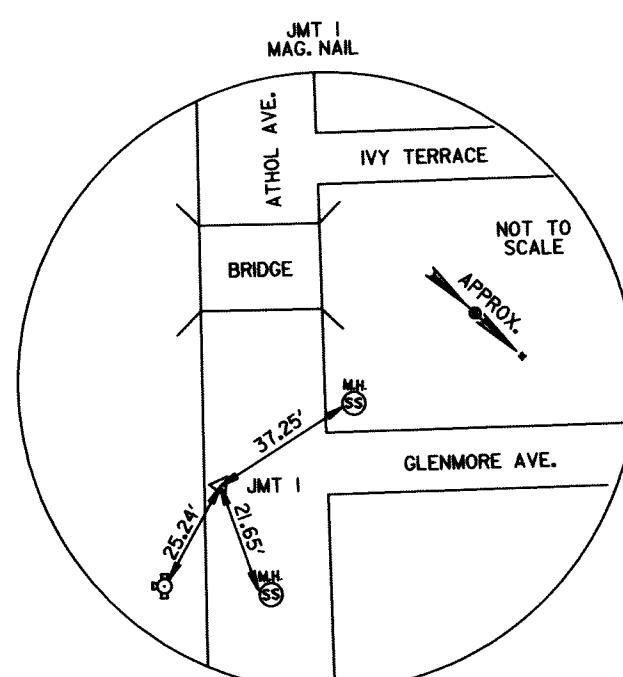
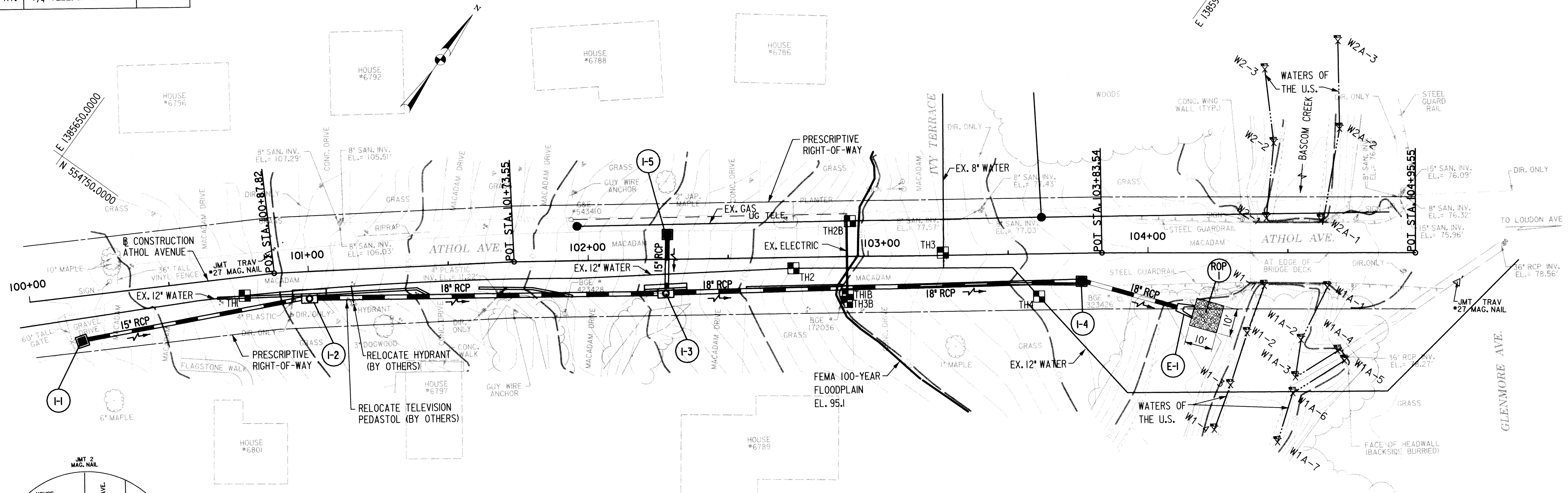
EXTEND 4" PLASTIC PIPE THROUGH CURB
STA. 100+94, 10', RT. - 3 L.F.
STA. 101+68, 12', RT. - 4 L.F.

UTILITY TEST HOLES			
NO.	LOCATION	UTILITY	TOP ELEV.
TH 1	STA. 100+76.4, 6.7' RT.	12" WATER	117.0
TH 2	STA. 102+73.3, 3.9' RT.	12" WATER	94.3
TH 3	STA. 103+26.7, 1.0' RT.	8" WATER	88.1
TH 4	STA. 103+60.8, 15.2' RT.	12" WATER	84.9
TH 1B	STA. 102+92.6, 13.4' RT.	1" ELECTRIC	91.7
TH 2B	STA. 102+93.7, 12.7' LT.	2" GAS	93.0
TH 3B	STA. 102+92.2, 16.1' RT.	1/4" TELE. & (3) 1" ELEC.	91.8

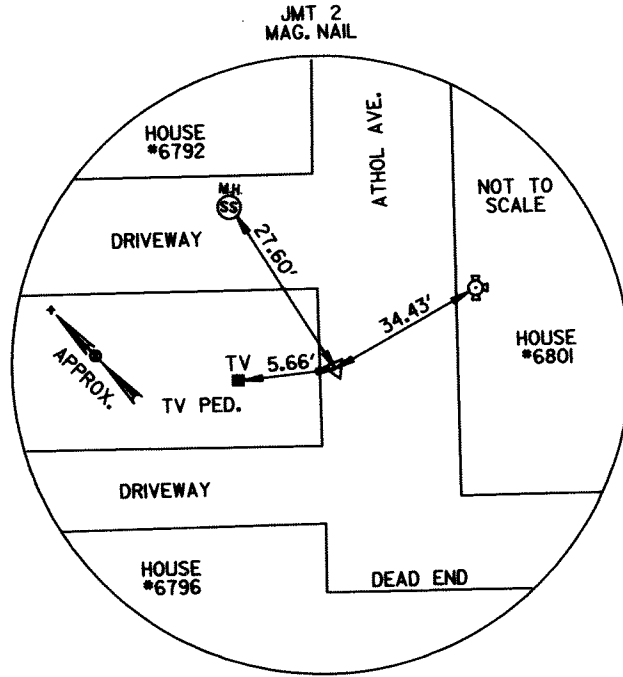
COMBINATION CURB AND GUTTER (STD. NO. R-3.01)	
STA. 100+94.0 TO STA. 101+06.0, RT. •	- 12 L.F.
STA. 102+19.9 TO STA. 102+35.1, RT. ••	- 15 L.F.

• TRANSITION CONCRETE CURB TO TIE-IN TO PROPOSED BITUMINOUS CURB AT STA. 100+94 AND STA. 101+06, RT.

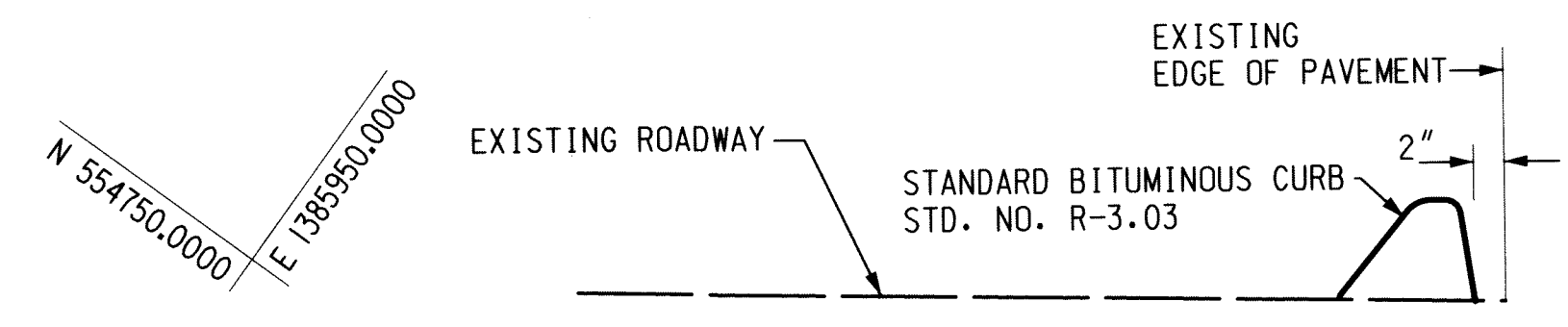
•• NOSE DOWN CURB AT BOTH ENDS



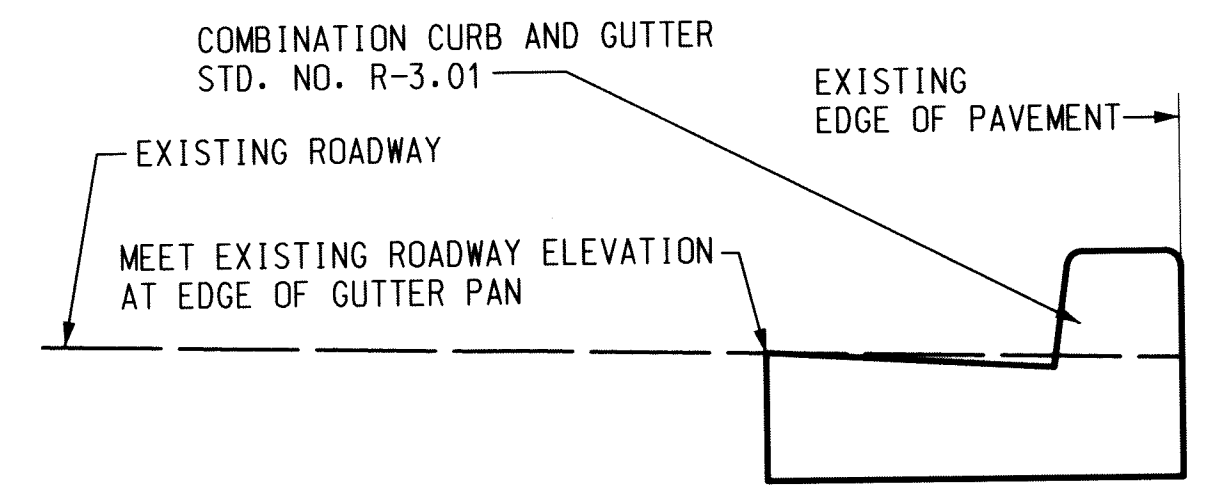
TRAV. #26
NOT TO SCALE
N 555003.2900
E 1386081.5180
ELEV. 84.6880
LOC. MAG. NAIL



TRAV. #27
NOT TO SCALE
N 554764.5780
E 1385730.5410
ELEV. 120.3640
LOC. MAG. NAIL



BITUMINOUS CURB PLACEMENT DETAIL
NOT TO SCALE



COMBINATION CURB AND GUTTER PLACEMENT DETAIL
NOT TO SCALE

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Jan 9/04
DIRECTOR OF PUBLIC WORKS

Steve Sharan 10/6/04
CHIEF TRANSPORTATION AND SPECIAL PROJECTS DIVISION

David L. Johnson 10/6/04
CHIEF, BUREAU OF ENGINEERING

William Z. ... 10-6-04
CHIEF, BUREAU OF HIGHWAYS

JMPT
JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future
72 Loveton Circle Baltimore, Maryland 21152 0949

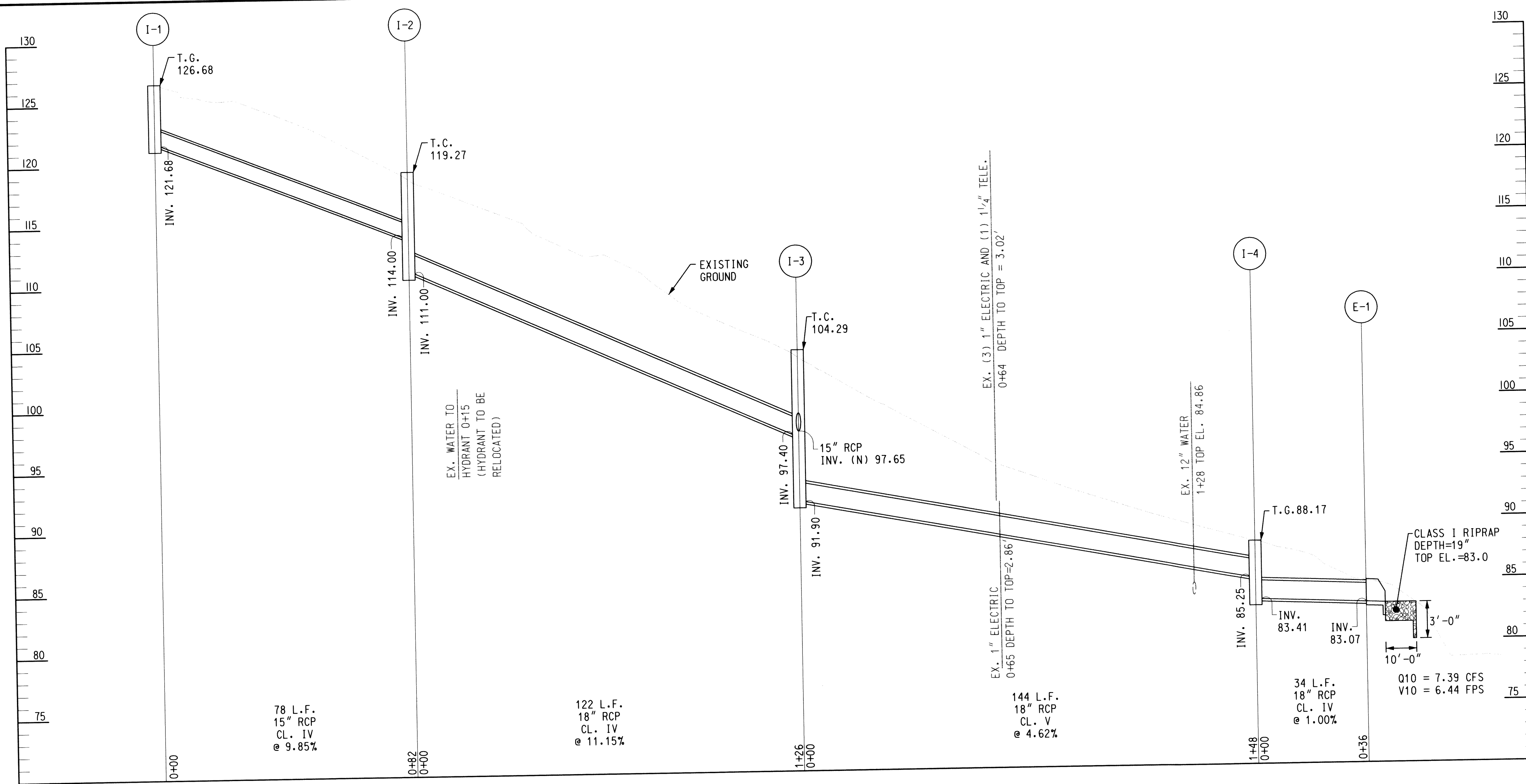
STATE OF MARYLAND
DEPARTMENT OF PUBLIC WORKS
Paul F. Cloutier
10/04/04

DES:	SAM				
DRN:	JMB				
CHK:	PFC				
DATE:	9/04				
	BY	NO.			DATE

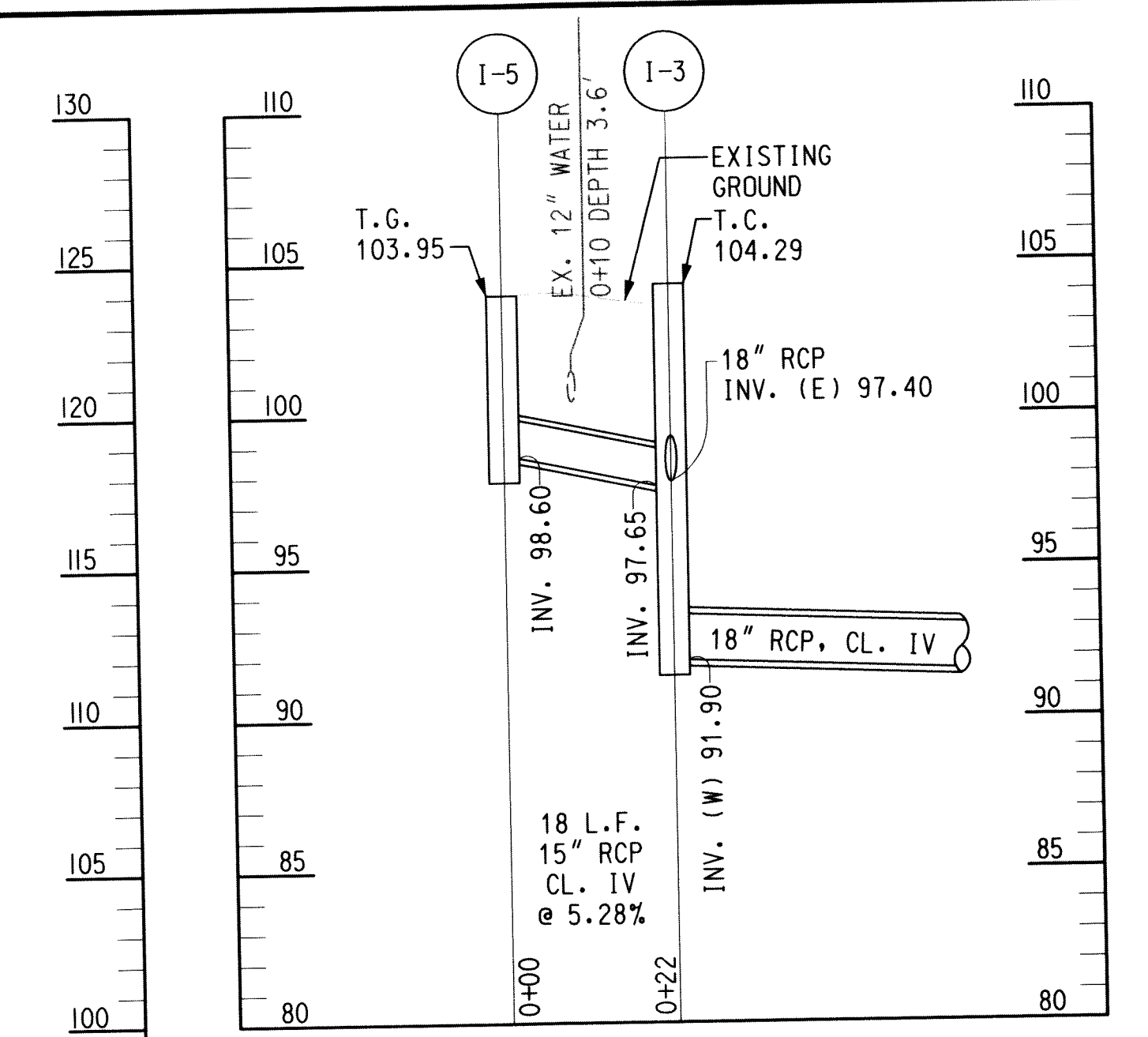
CAPITAL PROJECT NO.
D-1118-54

PLAN SHEET
**ATHOL AVENUE
STORM DRAIN IMPROVEMENTS**

SCALE
1" = 20'
SHEET
2 OF 5



STA. 100+17 TO STA. 104+10, RT.
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 5'



STA. 102+28, LT. TO STA. 102+28, RT.
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 5'

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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

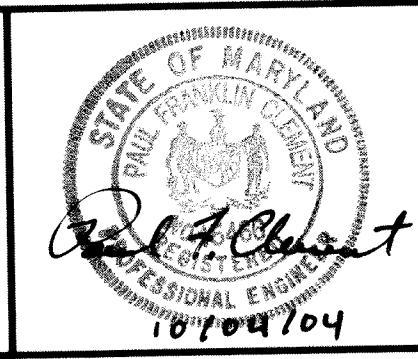
Steve Shaver 10/6/04
 DIRECTOR OF PUBLIC WORKS

William F. Mahaffey 10-6-04
 CHIEF TRANSPORTATION AND SPECIAL PROJECTS DIVISION

Charles B. Seaman 10/6/04
 CHIEF, BUREAU OF ENGINEERING

William F. Mahaffey 10-6-04
 CHIEF, BUREAU OF HIGHWAYS

JM/T
 JOHNSON, MIRMIRAN & THOMPSON
 Engineering A Brighter Future
 72 Lovston Circle, Baltimore, Maryland 21152 0949



DES:	SAM			
DRN:	JMB			
CHK:	PFC			
DATE:	9/04	BY:	NO.	DATE

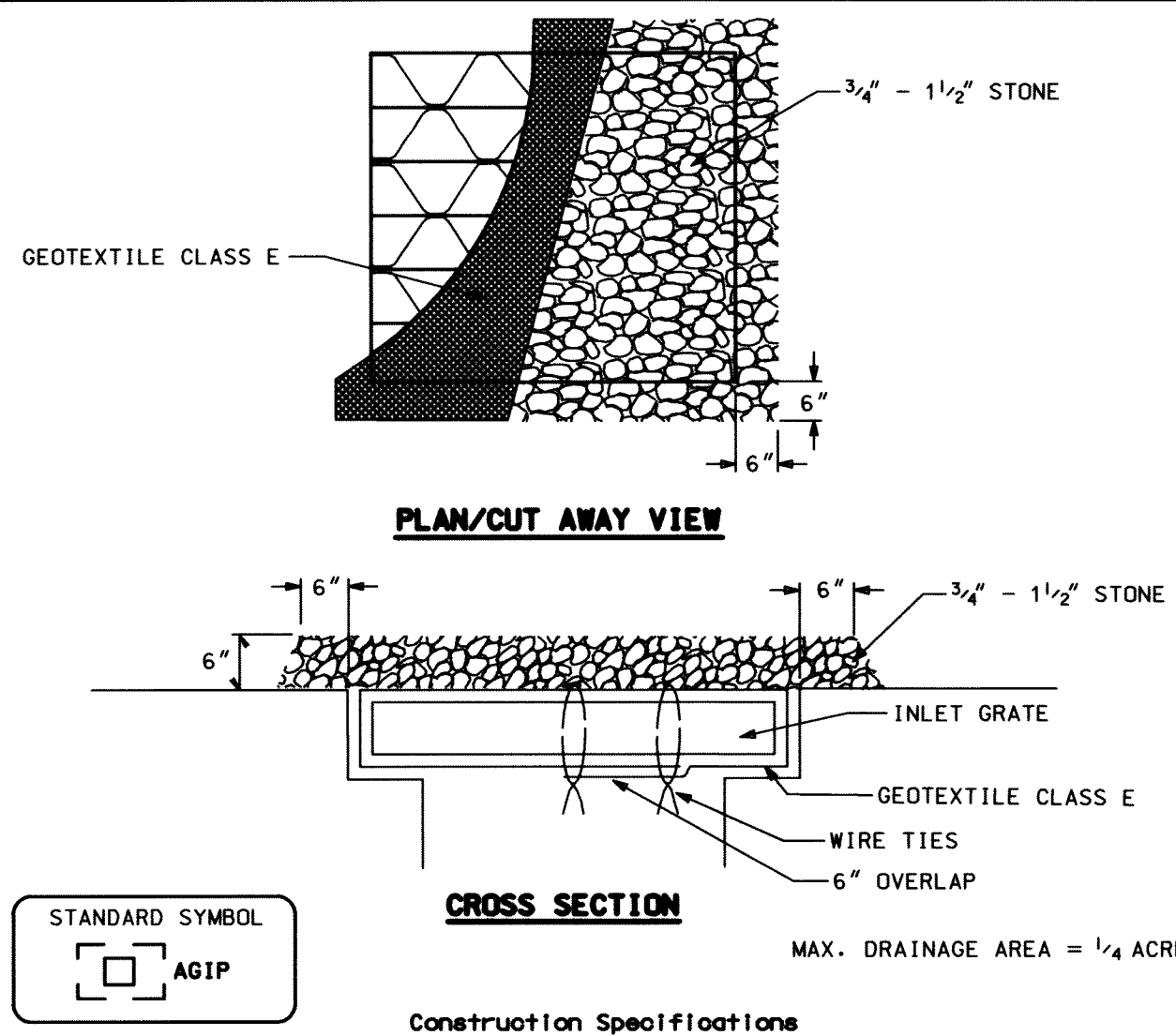
CAPITAL PROJECT NO.
D-1118-54

STORM DRAIN PROFILES
**ATHOL AVENUE
 STORM DRAIN IMPROVEMENTS**

SCALE
 AS SHOWN

SHEET
 3 OF 5

DETAIL 23B - AT GRADE INLET PROTECTION



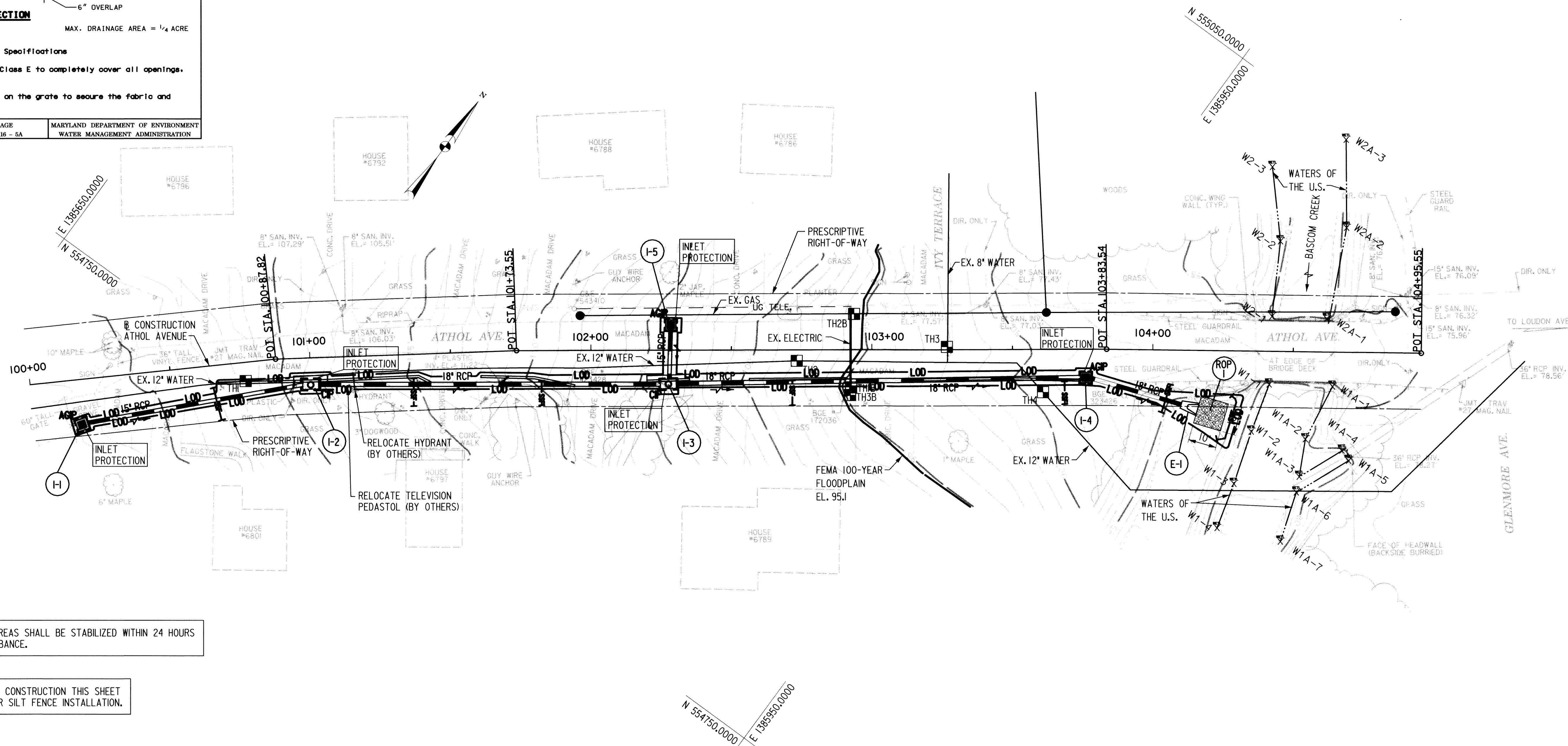
1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
2. Place 3/4\"/>

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE 2 - 16 - 5A | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

1. CONTRACTOR SHALL OBTAIN GRADING PERMIT FROM HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS PRIOR TO BEGINNING CONSTRUCTION.
2. CONTRACTOR SHALL CONTACT HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES, AND PERMITS AT (410) 313-2455 TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS BEFORE CONSTRUCTION IS TO BEGIN.
3. INSTALL SUPER SILT FENCE DOWNSTREAM OF TRENCH EXCAVATION STOCKPILE AREAS TO PREVENT SEDIMENT FROM BEING TRANSPORTED DOWNSTREAM TO STREAM. RELOCATE SUPER SILT FENCE AS CONSTRUCTION PROGRESSES. INSTALL INLET PROTECTION ON PROPOSED INLETS ONCE EACH INLET IS CONSTRUCTED.
4. ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 24 HOURS OF INITIAL DISTURBANCE.

Reviewed for HOWARD SCD and meets Technical Requirements:
 Jim Mayes
 Natural Resources & Information Service
 Date 10-6-04
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 John R. Kauter
 Howard SCD
 Date 10-6-04



ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 24 HOURS OF INITIAL DISTURBANCE.

SEE SEQUENCE OF CONSTRUCTION THIS SHEET CONCERNING SUPER SILT FENCE INSTALLATION.

DATE: 10/6/04 BY: JMB

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Steve Shaner 10/6/04
 CHIEF TRANSPORTATION AND SPECIAL PROJECTS DIVISION

JMPT
 JOHNSON, MIRNIRAN & THOMPSON
 Engineering: A Brighter Future
 72 Loveston Circle Baltimore, Maryland 21152 0949

STATE OF MARYLAND
 JOHN F. CLAVERT
 PROFESSIONAL ENGINEER
 10/7/04/104

DES:	SAM				
DRN:	JMB				
CHK:	PFC				
DATE:	9/04	BY:	NO.		DATE:

CAPITAL PROJECT NO.
 D-1118-54

EROSION AND SEDIMENT CONTROL PLAN SHEET
**ATHOL AVENUE
 STORM DRAIN IMPROVEMENTS**

SCALE
 1" = 20'
 SHEET
 4 OF 5

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 most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.
- Following initial soil disturbance or re-disturbance, 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, but 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 1994 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 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 permission for their removal has been obtained from the Howard County Sediment Control Inspector.
- Site Analysis:

Total Area of Site	0.42	Acres
Area Disturbed	0.08	Acres
Area to be roofed or paved	0.02	Acres (PATCHING)
Area to be vegetatively stabilized	0.06	Acres
Total Cut	345	Cu. Yds. (PIPE TRENCH)
Total Fill	306	Cu. Yds. (PIPE TRENCH BACKFILL)
Off-site waste/borrow area locations:	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 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 back-filled and stabilized by the end of each work day, whichever is shorter.

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 three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

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

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

Seeding -- For the period March 1 -- April 30, and August 1 -- October 15, seed with 60 lbs/acre (1.4 lbs/1000 sq. ft.) of Kentucky 31 Tall Fescue. For the period May 1 -- July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs/acre (.05 lbs/1000 sq. ft.) of weeping lovegrass. During the period of October 16 -- February 28, protect site by:

Option 1 -- Two 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 30 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 seeding areas and make needed repairs, replacements and reseedings.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be re-disturbed where a short-term vegetative cover is needed.

Seedbed preparation: -- Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

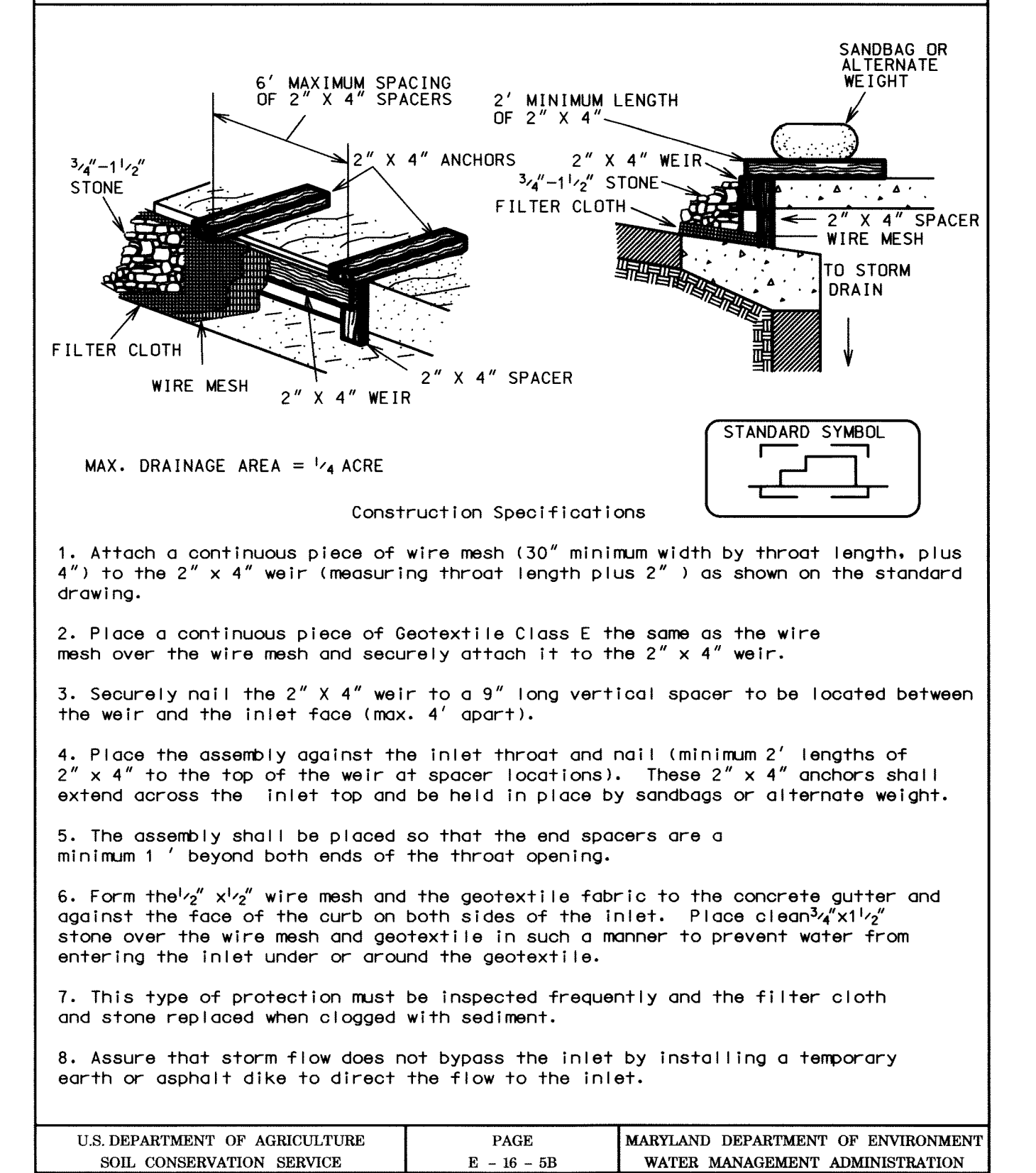
Soil Amendments: -- Apply 600 lbs/acre 10-10-10 fertilizer (14 lbs/1000 sq. ft.).

Seeding: -- For periods March 1 -- April 30 and from August 15 -- October 15, seed with 2-1/2 bushels per acre of annual rye (3.2 lbs/1000 sq. ft.). For the period May 1 -- August 14, seed with 3 lbs/acre of weeping lovegrass (.07 lbs/1000 sq. ft.). For the period November 16 -- February 28, protect site by applying 2 tons/acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

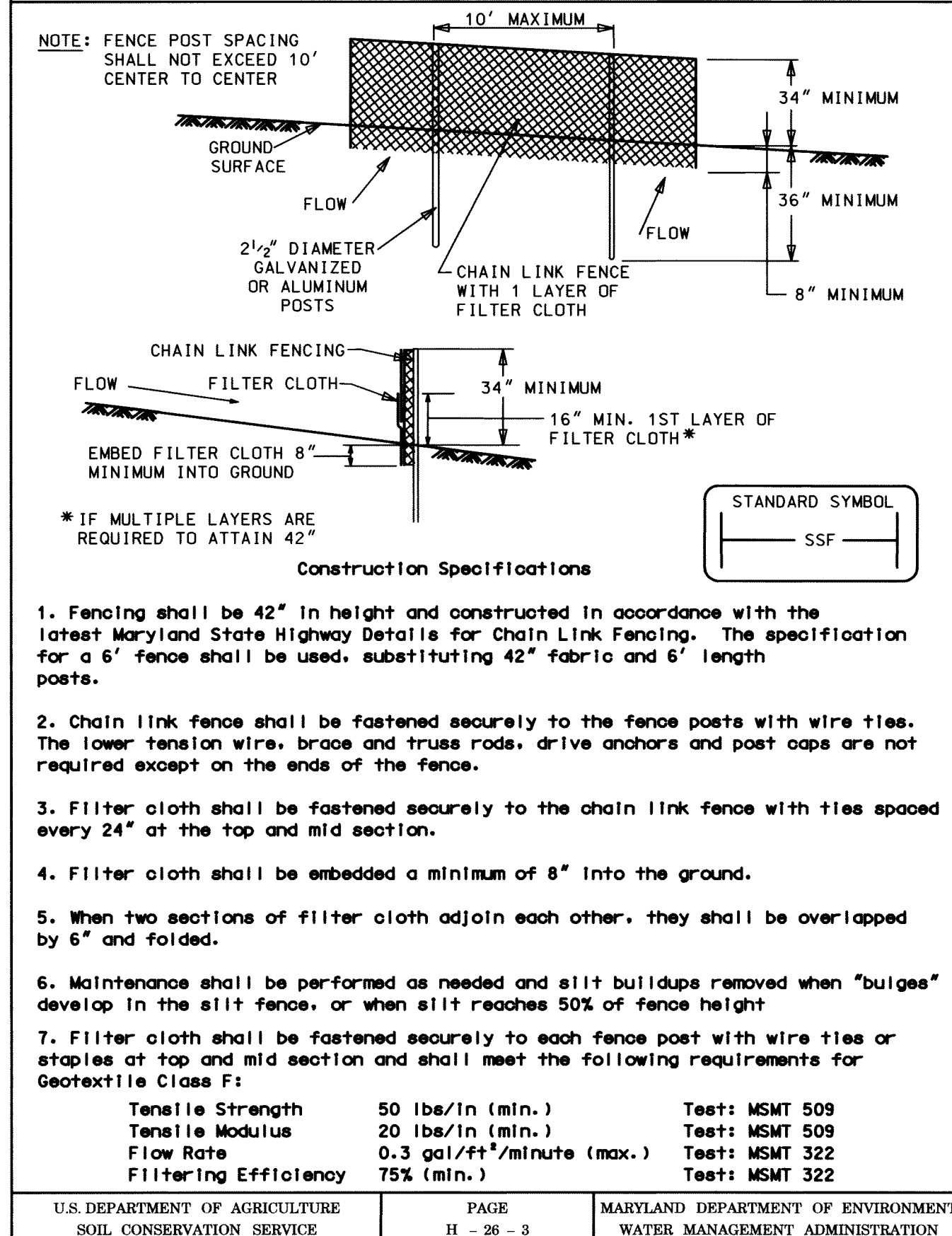
Mulching: -- Apply 1-1/2 to 2 tons/acre (70 to 90 lbs/1000 sq. ft.) of unrotted weed-free, small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq. ft.) of emulsified asphalt on flat areas. On slopes 8 feet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

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

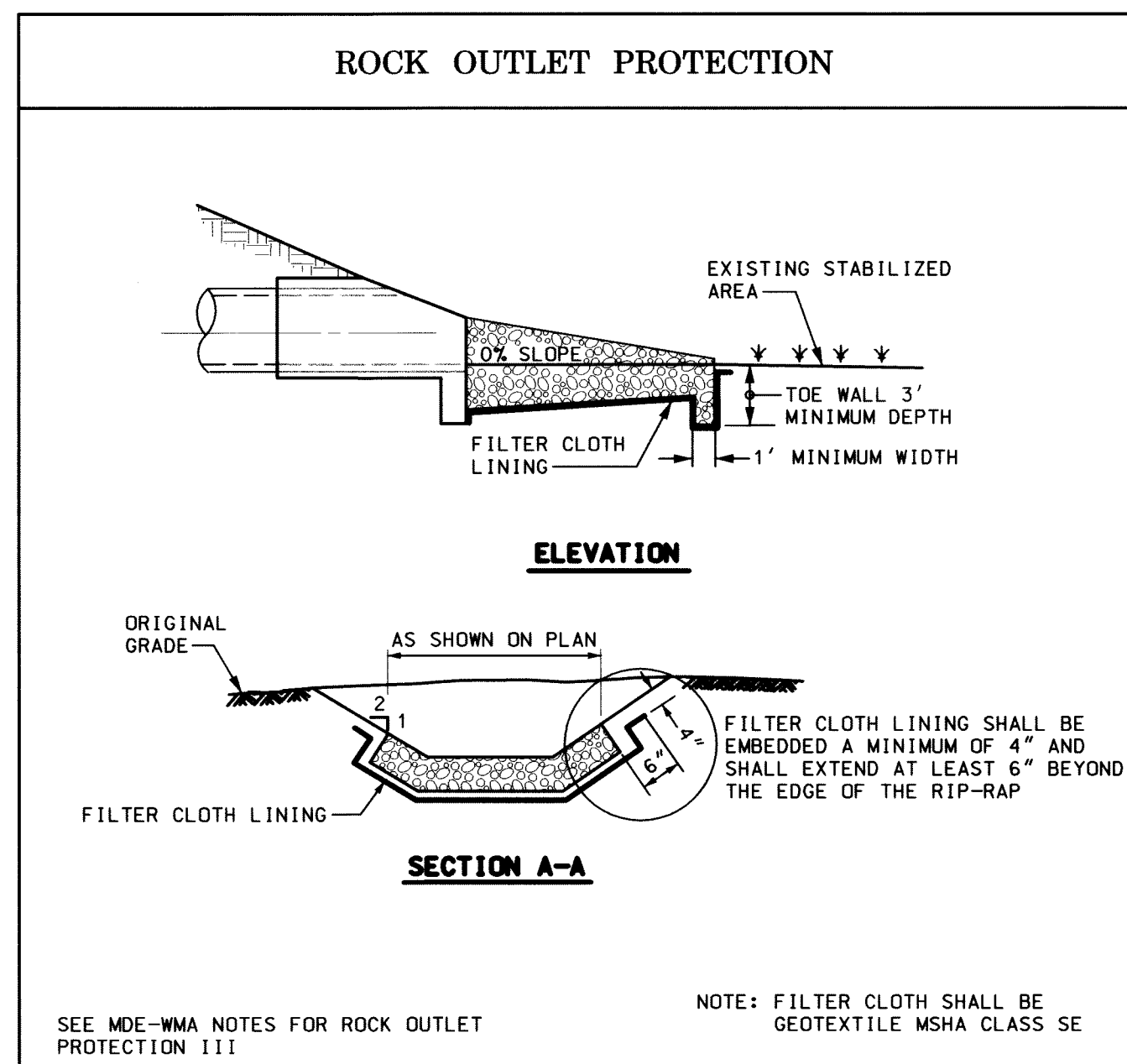
DETAIL 23 - CURB INLET PROTECTION (COG OR COS INLETS)



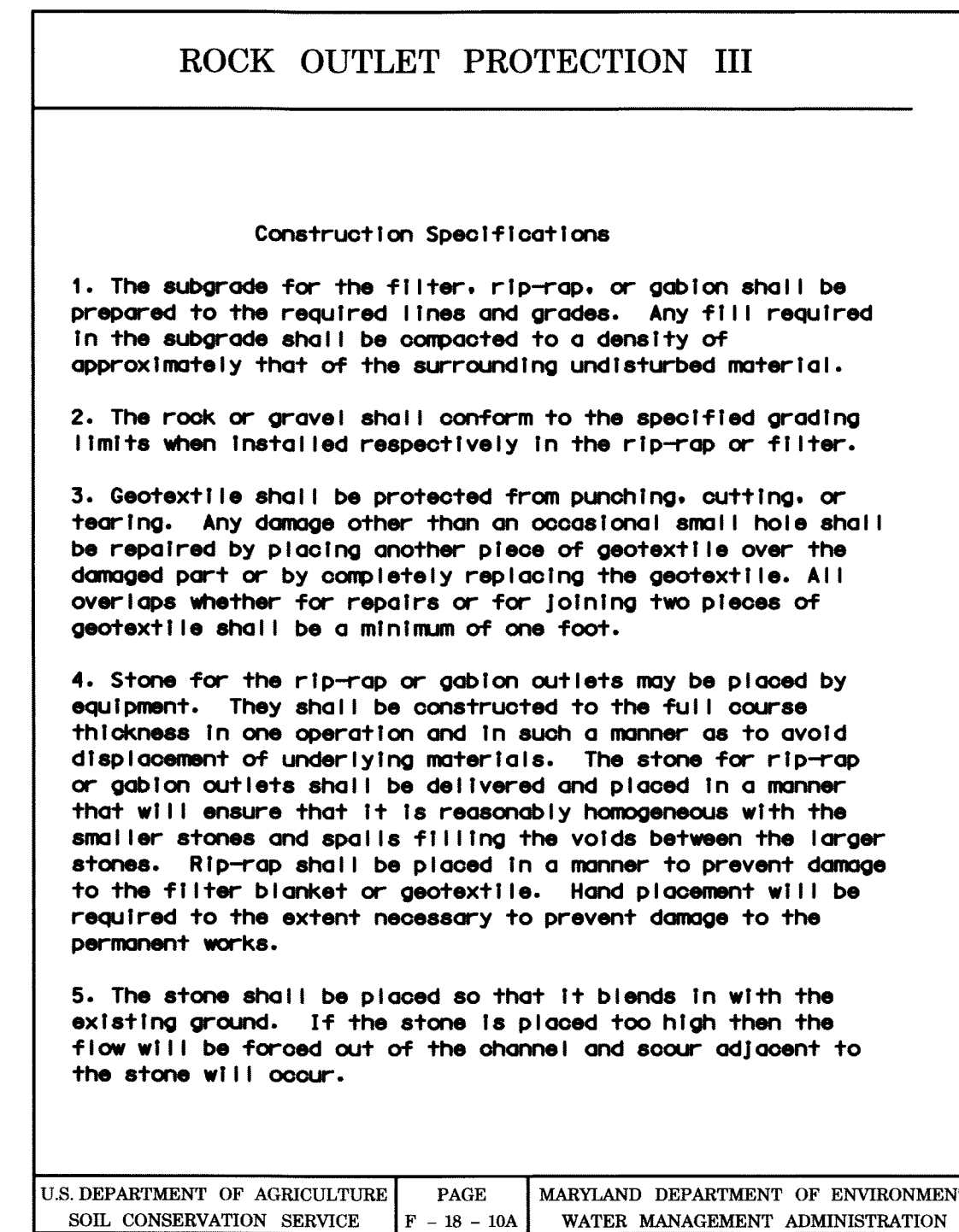
DETAIL 33 - SUPER SILT FENCE



ROCK OUTLET PROTECTION



ROCK OUTLET PROTECTION III



By the Developer:

"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 Department of the Environment 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."

Steve Shavar 10/6/04
 Steve Shavar Date
 Signature of Developer
 Print name below Signature

By the Engineer:

"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."

Paul F. Clement PE # 15466 10/04/04
 PAUL F. CLEMENT Date
 Signature of Engineer
 Print name below Signature

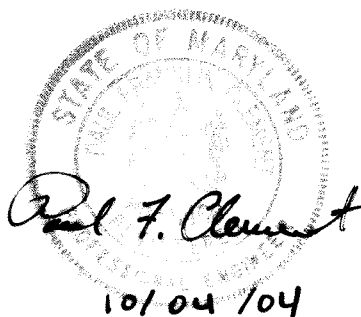
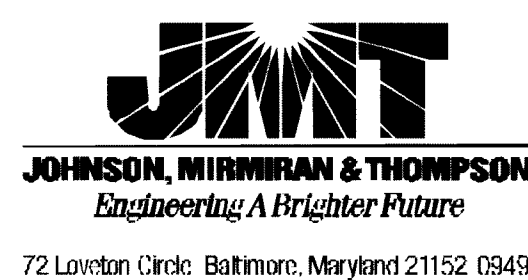
Reviewed for HOWARD SCD and meets Technical Requirements:

Jim Myers 10-6-04
 SDA- Natural Resources Conservation Service Date
 This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.
 John R. Robertson 10-6-04
 Howard SCD Date

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Steve Shavar 10/6/04
 DIRECTOR OF PUBLIC WORKS
 Steve Shavar 10/6/04
 CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION

William Z. Adams 10-6-04
 CHIEF, BUREAU OF ENGINEERING
 William Z. Adams 10-6-04
 CHIEF, BUREAU OF HIGHWAYS



DES:	SAM			
DRN:	JMB			
CHK:	PFC			
DATE:	9/04			
	BY	NO.		
			DATE	

CAPITAL PROJECT NO.
 D-1118-54

SEDIMENT AND EROSION CONTROL DETAILS AND NOTES
ATHOL AVENUE
STORM DRAIN IMPROVEMENTS

SCALE
 AS SHOWN

SHEET
 5 OF 5

DATE: 09/27/2004 10:58:59 AM