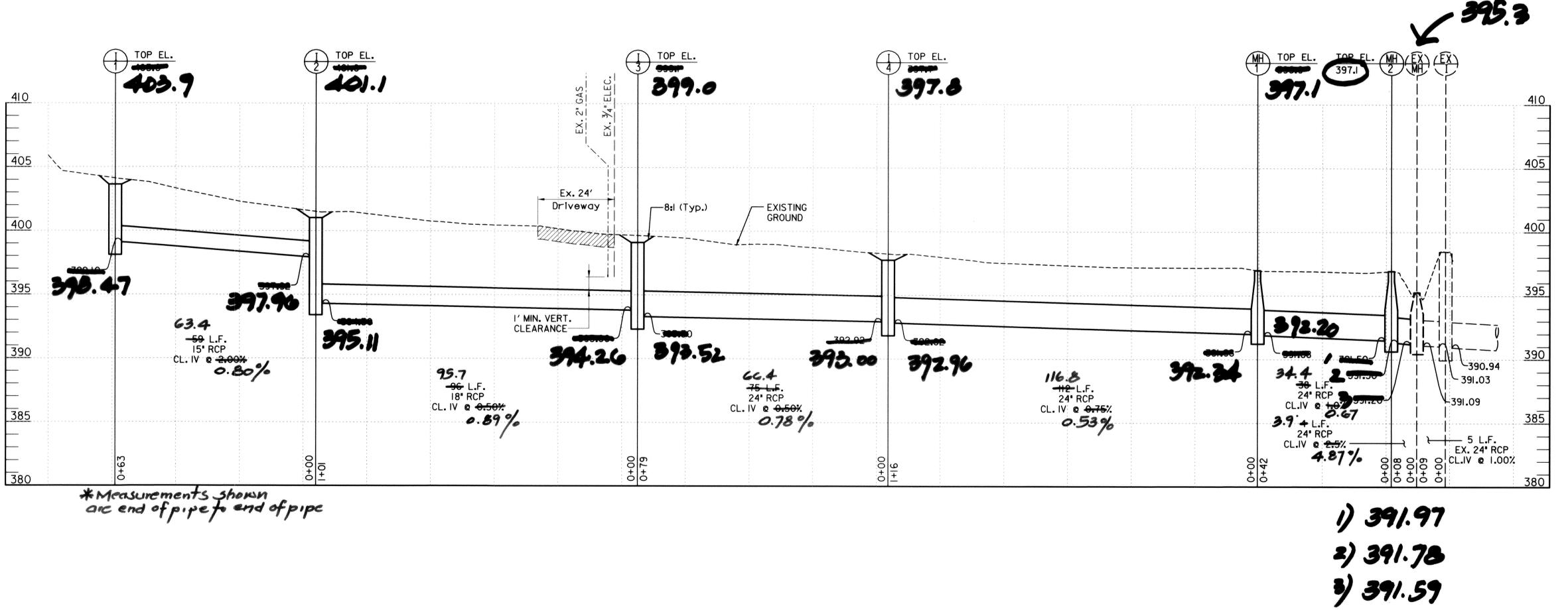
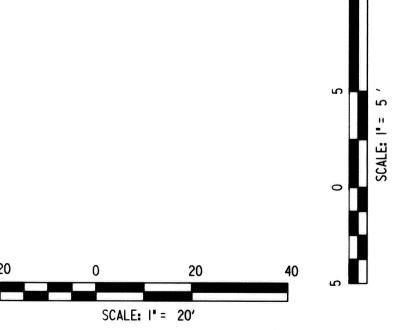


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	ST	ORM DRAIN	STRUCTURE S	CHEDULE			
STRUCTURE NO.	WORK POINT* NORTH EAST		INVERT IN / OUT	TOP ELEV.	REMARK		
1-1	558,455.08	1,344,588.58	- /399.10	403.6	TYPE 'S' INLET (SD 4.22)		
I-2	558,446.17	1,344,650.66	397.92/394.30	401.0	TYPE 'S' INLET (SD 4.22)		
I-3	558,453.34	1,344,750.22	393.80/393.30	399.1	TYPE 'S' INLET (SD 4.22)		
I-4	558,463.99	1,344,828.14	392.92/392.82	397.7	TYPE 'S' INLET (SD 4.22)		
MH-I	558,481.65	1,344,942.27	391.98/391.88	396.9	STD. MH (G 5.12)		
MH-2	558,442.49	1,344,956.89	391.50/391.30	397.1	STD. MH (G 5.12)		

* WORK POINT IS LOCATED AT THE CENTER OF RESPECTIVE STRUCTURE





Asburtshown 1.4.07 D. Maker

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND CHIEF. TRANSPORTATION AND DATE SPECIAL PROJECTS DIVISION

PREPARED BY 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220



Hor	DATE: 9/05	BY	NO.	REVISION	DATE	
I,	CHK: DTM					
1	DRN: EGB					
	DES: BNL					

PIPE PROFILE

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SCALE MAP NO. 41 BLOCK NO.

HARMEL DRIVE DRAINAGE IMPROVEMENTS

HOWARD COUNTY, MARYLAND

SCALE

AS SHOWN

SHEET 2 OF 3

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS

SEEDBED PREPARATION: LOOSEN UPPER 3 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:

- I) PREFERRED APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1.000 SQUARE FEET) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1.000 SQUARE FEET) BEFORE SEEDING. HARROW OR DISC INTO UPPER 3 INCHES OF SOIL, AT TIME OF SEEDING, APPLY 400 LBS, PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PER 1,000 SQUARE FEET).
- 2) ACCEPTABLE APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1,000 SQUARE FEET) AND 1,000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS. PER 1,000 SQUARE FEET) BEFORE SEEDING. HARROW OR DISC INTO UPPER 3 INCHES OF SOIL.

SEEDING: FOR THE PERIOD MARCH I THROUGH APRIL 30 AND FROM AUGUST I THROUGH OCTOBER 15. SEED WITH 60 LBS. PER ACRE (1.4 LBS. PER 1.000 SQUARE FEET) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY I THROUGH JULY 31. SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.05 LBS. PER 1.000 SQUARE FEET) OF WEEPING LOVEGRASS. DURING THE PERIOD OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY ONE OF THE

1) 2 TONS PER ACRE OF WELL-ANCHORED MULCH STRAW AND SEED AS SOON AS POSSIBLE IN THE SPRING.

2) USE SOD.

FOLLOWING OPTIONS:

3) SEED WITH 60 LBS. PER ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE WELL ANCHORED STRAW.

MULCHING: APPLY 1/2 TO 2 TONS PER ACRE (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 218 GALLONS PER ACRE (5 GALLONS PER 1,000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FEET OR HIGHER, USE 347 GALLONS PER ACRE (8 GALLONS PER 1,000 SQUARE FEET) FOR ANCHORING.

MAINTENANCE: INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS, AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTRIBUTED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER 3 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. PER 1,000 SQUARE FEET).

SEEDING: FOR PERIODS MARCH I THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOVEMBER 15, SEED WITH $2\frac{1}{2}$ BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS. PER 1,000 SQUARE FEET). FOR THE PERIOD MAY I THROUGH AUGUST 14. SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.07 LBS. PER 1,000 SQUARE FEET). FOR THE PERIOD NOVEMBER 16 THROUGH 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 1/2 TO 2 TONS PER ACRE (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 218 GALLONS PER ACRE (5 GALLONS PER 1,000 SQUARE FEET) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FEET OR HIGHER, USE 347 GALLONS PER ACRE (8 GALLONS PER 1,000 SQUARE FEET) FOR ANCHORING. REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

SEQUENCE OF CONSTRUCTION

- I. OBTAIN THE GRADING PERMIT PRIOR TO CONSTRUCTION. (I DAY)
- 2. INSTALL THE PERIMETER SEDIMENT CONTROL MEASURES INCLUDING SILT FENCE, SUPER SILT FENCE, EARTH DIKE, AND STABILIZED CONSTRUCTION ENTRANCE AS SHOWN ON PLAN. (3 DAYS)
- 3. CLEAR AND GRUB THE SITE AS NEEDED. (2 DAYS)
- 4. INSTALL NEW STORM DRAINS BEGINNING DOWNSTREAM TO UPSTREAM BACKFILL AND STABILIZE AS WORK PROGRESSES.
- 5. STABILIZE THE DISTURBED AREAS WITH TOPSOIL, PERMANENT SEEDING AND MULCHING AS NEEDED. (2 DAYS)
- 6. CONTRACTOR SHALL CLEAN ALL PIPES INSTALLED AS PART OF THIS PROJECT AFTER ALL UPSTREAM AREAS HAVE BEEN STABILIZED.
- 7. UPON THE HOWARD CO. INSPECTOR'S APPROVAL. REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES AND STABILIZE THE REMAINING AREAS WITH PERMANENT SEEDING. (5 DAYS)

STANDARD SEDIMENT CONTROL NOTES

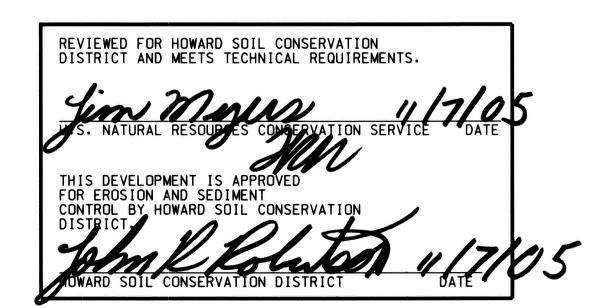
- I. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS. LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION
- 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- 3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
- A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER 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 THE PERIMETER IN ACCORDANCE WITH VOLUME I, CHAPTER 7, 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SECTION G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL 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 THERE REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 7. SITE ANALYSIS:
 - TOTAL SITE AREA 2.15 ACRES AREA DISTURBED - 0.18 ACRES
 - AREAS TO BE ROOFED OR PAVED O ACRES
 - AREA TO BE VEGETATIVELY STABILIZED 0.05 ACRES TOTAL CUT - 325 C.Y.
 - TOTAL FILL O C.Y.
 - OFF-SITE WASTE SITE HOWARD COUNTY LANDFILL OFF-SITE BORROW SITE - APPROVED SITE
- 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 CONTROLS MUST BE PROVIDED. IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- IO. 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.
- II. TRENCHES FOR THE CONSTRUCTION OF UNTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
- 12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
- 13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN
- 14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL. STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONDIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
- 15. CONSTRUCTION WITHIN, ALONG OR ACROSS STREAM CHANNELS SHALL, AS A MINIMUM CONFORM TO CRITERIA DESCRIBED UNDER "MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION".

EROSION CONTROL MATTING

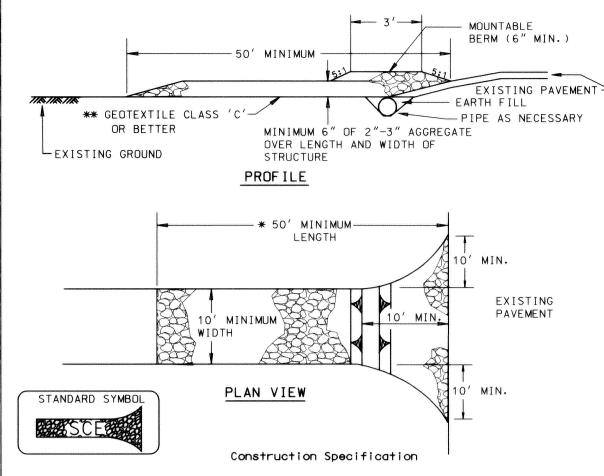
Construction Specifications

- 1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
- 2. Staple the 4" overlap in the channel center using an 18" spacing between staples. 3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
- 4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
- 5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
- 6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.
- Note: If flow will enter from the edge of the matting then the area

effected by the flow must be keyed-in.									
	U.S. DEPARTMENT OF AGRICULTURE	PAGE	MARYLAND DEPARTMENT OF ENVIRONMENT						
	SOIL CONSERVATION SERVICE	G - 22 - 2A	WATER MANAGEMENT ADMINISTRATION						



DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



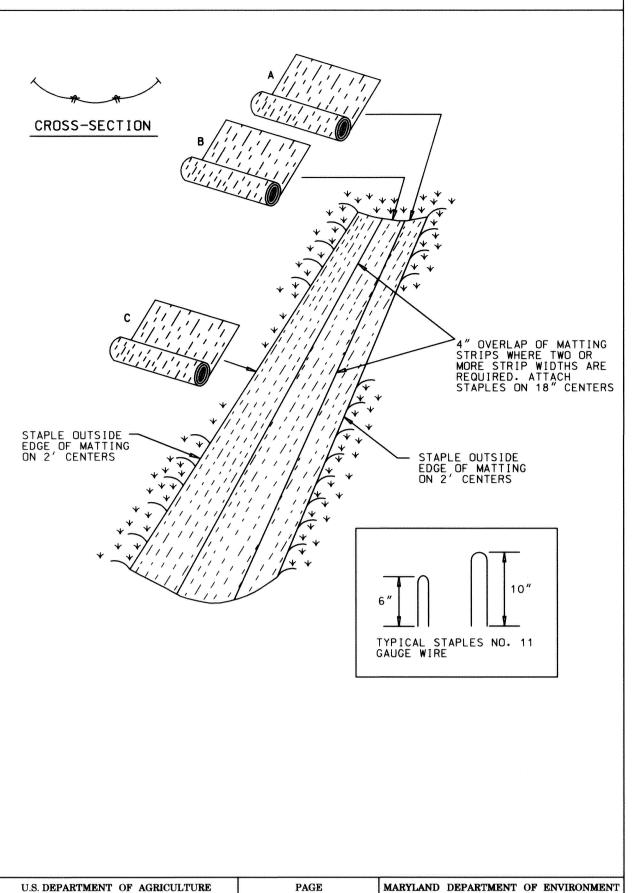
1. Length - minimum of 50' (*30' for single residence lot).

- Width 10' minimum, should be flared at the existing road to provide a turning radius.
- 3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
- 4. Stone crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the
- 5. Surface Water all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

6. Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

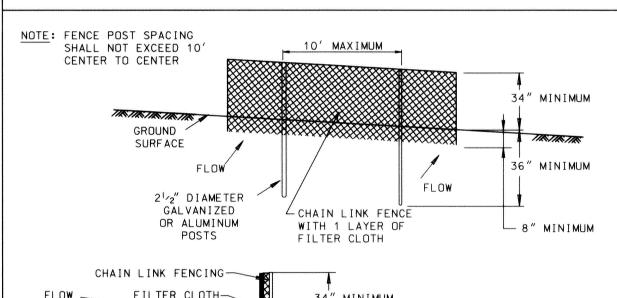
U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT

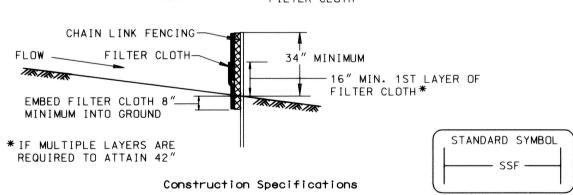
WATER MANAGEMENT ADMINISTRATION SOIL CONSERVATION SERVICE



DETAIL 30 - EROSION CONTROL MATTING







1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

- 3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
- 4. Filter cloth shall be embedded a minimum of 8" into the ground.
- 5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges"

develop in the silt fence, or when silt reaches 50% of fence height 7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for

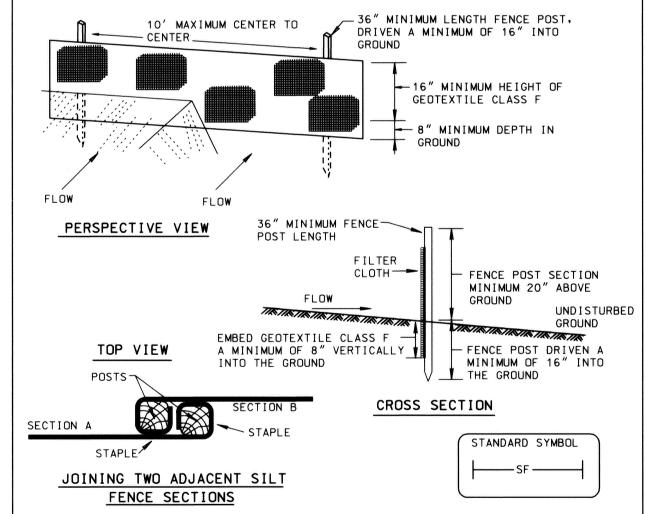
Geotextile Class F: Test: MSMT 509 Tensile Strength 50 lbs/in (min. Test: MSMT 509 Tensile Modulus 20 lbs/in (min.) Flow Rate 0.3 gal/ft2/minute (max.) Test: MSMT 322 Filtering Efficiency 75% (min.) Test: MSMT 322

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION DETAIL 22 - SILT FENCE

G - 22 - 2

WATER MANAGEMENT ADMINISTRATION

SOIL CONSERVATION SERVICE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be $1\frac{1}{2}$ " x $1\frac{1}{2}$ " square (minimum) cut, or $1\frac{3}{4}$ " diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength 50 lbs/in (min.) Test: MSMT 509 Tensile Modulus 20 lbs/in (min.) Test: MSMT 509 0.3 gal ft²/ minute (max.) Test: MSMT 322 Flow Rate Filtering Efficiency 75% (min.) Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

MARYLAND DEPARTMENT OF ENVIRONMENT U.S. DEPARTMENT OF AGRICULTURE MARYLAND DEPARTMENT OF ENVIRONMENT SOIL CONSERVATION SERVICE WATER MANAGEMENT ADMINISTRATION

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY, MARYLAND

NOTE: THE TIME LINE EXCLUDES WEATHER RELATED DELAYS.

Shanan CHIEF, TRANSPORTATION AND

SPECIAL PROJECTS DIVISION

PREPARED BY URS 4 NORTH PARK DRIVE HUNT VALLEY, MARYLAND TEL: (410) 785-7220



	DATE: 9/05	BY	NO.	REVISION	DATE	
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EROSION & SEDIMENT CONTROL NOTES & DETAILS

SCALE MAP NO. 41 BLOCK NO. 1

HARMEL DRIVE DRAINAGE IMPROVEMENTS

HOWARD COUNTY, MARYLAND

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SCALE

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