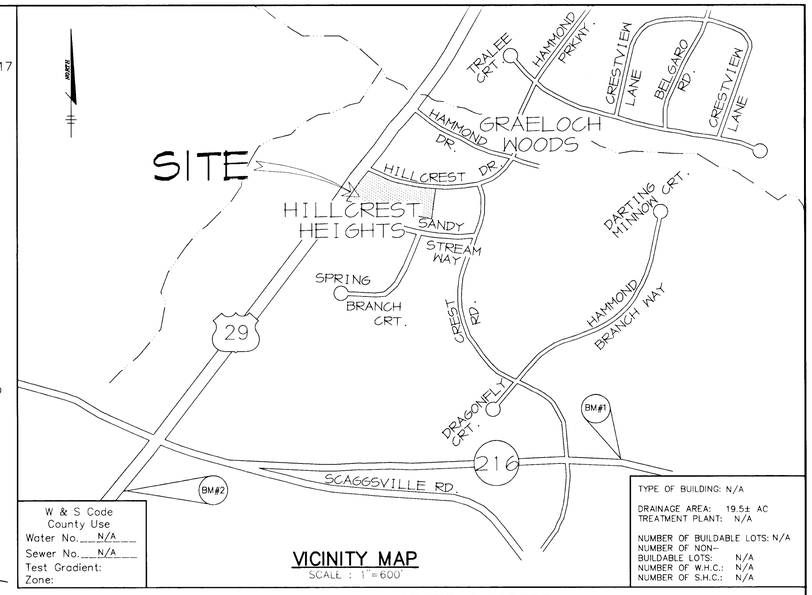
BM #1 HO.CO. SURVEY CONTROL STATION 46B2
STANDARD DISK ON CONCRETE MONUMENT, NORTH SIDE OF RTE. 216, 0.7 MILES WEST OF RTE. 29, 24.7 FEET NORTH OF C&P POLE #17
ELEVATION 474.66 (NVD 88)
N 539,987.722
E 1,337,218.470

BM #2 HO.CO. SURVEY CONTROL STATION 46BA
STANDARD DISK ON CONCRETE MONUMENT, EAST SIDE OF RTE. 29, 32.4 FEET WEST OF BGE POLE #6, 0.15 MILES SOUTH OF RTE. 216
ELEVATION 425.82 (NVD 88)
N 537,545.8494
E 1,339,849.084

SECTION TWO
HILLCREST



VICINITY MAP
SCALE : 1"=600'

W & S Code
County Use
Water No. N/A
Sewer No. N/A
Test Gradient:
Zone:

TYPE OF BUILDING: N/A
DRAINAGE AREA: 19.5± AC
TREATMENT PLANT: N/A
NUMBER OF BUILDABLE LOTS: N/A
NUMBER OF NON-BUILDABLE LOTS: N/A
NUMBER OF W.H.C.: N/A
NUMBER OF S.H.C.: N/A

GENERAL NOTES

1. Approximate location of existing utilities and other obstructions are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
2. All horizontal controls are based on NAD 83.
3. Vertical controls are based on U.S.G.S. datum.
4. All pipe elevations shown (~) are invert elevations.
5. Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum or tunnel as required. Coordinate with the utility companies to schedule any necessary bracing of the poles.
6. For details not shown on the drawings, and for materials required, refer to Specifications.
7. Existing utilities in the vicinity of the proposed work shall be located by the Contractor two weeks in advance of construction operations at his own expense.
8. Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

State Highway Administration	410-531-5533
Baltimore Gas & Electric Co. Contractor Services	410-850-4620
Baltimore Gas & Electric Co. Underground Damage Control	410-787-9068
Miss Utility	1-800-257-7777
Bureau of Utilities, Howard County Department of Public Works	410-313-4900

9. Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located on private property within the construction strip are not to be 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. Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
12. Sediment control to be provided as shown and shall be approved by the Sediment Control Inspector before starting any site grading. Trench length is limited to three (3)pipe lengths at any one time, to be stabilized immediately.
13. Contractor to protect the existing trees or shrubs and replace any damaged during construction.
14. Trenching and backfilling shall be in accordance with Howard County standard detail G2.01.
15. All work shall comply with all applicable provisions of the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" issued by the Water Resources Administration and the Soil Conservation Service.
16. Boundary and topographic information shown here is based on "as-built" plans of Patuxent Springs dated July, 1990 and field surveys by Reimer Muegge & Associates, Inc., dated March 1997.
17. The Contractor shall note that in the case of a discrepancy between the scaled and the figured dimensions shown on the plans, the figured dimensions shall govern.
18. It shall be distinctly understood that failure to mention specifically any work which would be required to complete the project shall not relieve the Contractor of his responsibility to perform such work.
19. At the end of each working day, all sediment control measures will be inspected and left in operational condition.

LEGEND

PROPERTY LINE
EARTH DIKE
EX. FENCE LINE
EX. CONTOUR
PROPOSED CONTOUR
L.O.D.
SILTFENCE
PROPOSED INLET
TRAVERSE
PROPOSED STORM DRAIN
STD. INLET PROTECTION
EX. TREE LINE
EX. GUARDRAIL
C350 EROSION CONTROL MATTING
CLASS I RIPRAP

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
DEVELOPER — DATE 2/24/98

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.
ENGINEER — DATE 12/22/97

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
NATURAL RESOURCES CONSERVATION — DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT — DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 2/25/98
CHIEF, BUREAU OF ENGINEERING — DATE 2/24/98
CHIEF, BUREAU OF HIGHWAYS — DATE 2/25/98
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT — DATE 2/24/98

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX : 410-997-9282
ENVKENG/W00001 W-CLARKES.DWG

STATE OF MARYLAND — FRANK N. DONALDSON — NO. 8146 — REGISTERED PROFESSIONAL ENGINEER
FRANK DONALDSON #8146

DES: D.A.S.
DRN: E.L.R.
CHK: G.C.L.
DATE: 12/22/97

BY	NO.	REVISION	DATE

HILLCREST DRIVE
STORM DRAIN PLAN

600' SCALE MAP NO. _____ BLOCK NO. _____

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D-1098

SCALE AS SHOWN
SHEET 1 OF 3

C1078A#1

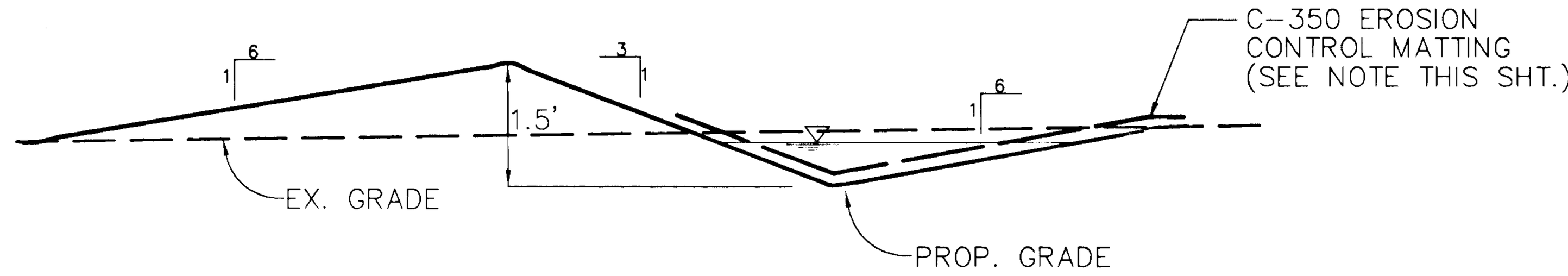
12-22-97

STRUCTURE SCHEDULE

STRUCTURE NUMBER	LOCATION	TYPE	TOP ELEV.	INV. IN	INV. OUT	CREST ELEV. OF INLET OPENING	REMARKS
I-1	N 540,877.73 E 1,342,218.96	EX. E	EXISTING	368.64	368.48	-----	———
I-2	N 540,820.23 E 1,342,285.18	D	TO MATCH EX. HW.	370.70	370.60	(SEE DETAIL ON SHEET 3)	MOD. HO. CO. SD4.11 SEE DETAIL ON SHT. 3
I-3	N 540,689.61 E 1,342,184.29	D	384.31	375.00	374.75	383.39	HO. CO. STD. SD4.11 ALL SIDES OPEN
I-4	N 540,594.45 E 1,342,407.29	D	384.31	—	379.00	383.39	HO. CO. STD. SD4.11 ALL SIDES OPEN

STORM DRAIN FLOW TABULATION

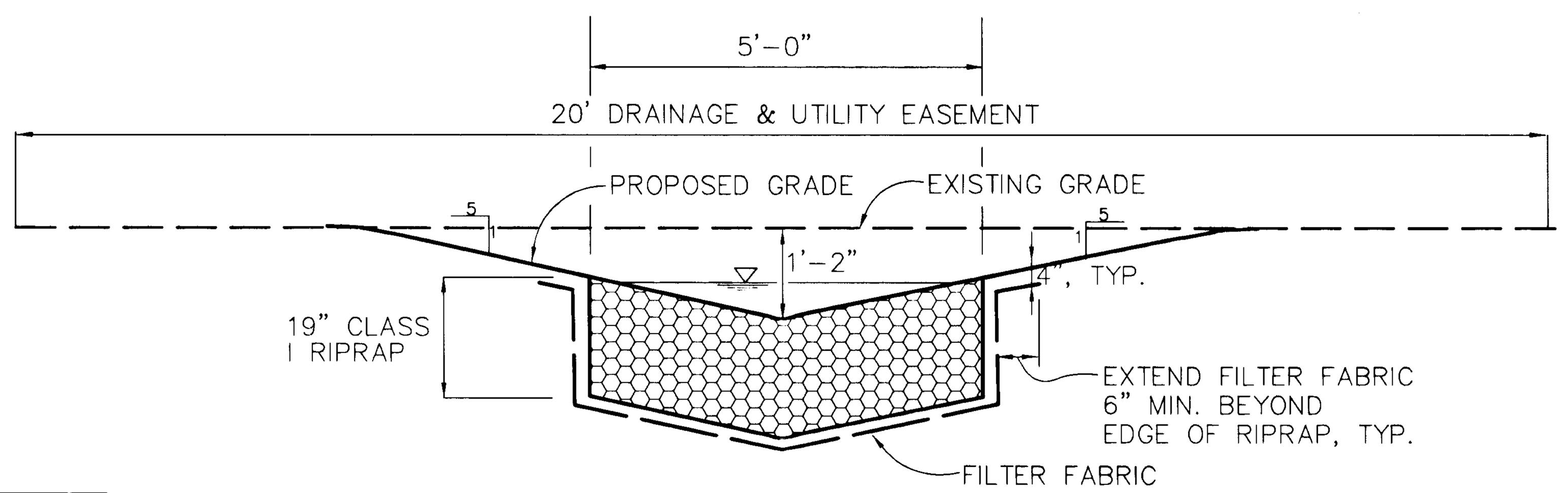
LOCATION		ACRES		TIME CONC. (MIN.)			Q = CIA	PIPE n = 0.014			
FROM	TO	SUB.	TOTAL	INLET	DRAIN	TOTAL	10 YR. C.F.S.	SIZE	SLOPE	VEL.(fps)	LGTH.
	I-4	13.79	13.79	33.40			4.98				
I-4	I-3				1.44		4.98	18"	1.65%	2.82	243'
	I-3	1.30	15.09	27.60			1.85				
I-3	I-2				0.97	34.45	6.83	21"	2.44%	2.84	166'
	I-2	5.38	20.47	16.20			10.50				
I-2	I-1				0.21	35.89	17.33	36"	2.72%	5.78	72'
	I-1	2.08	22.55	27.60			4.54				
I-1	EX. HW				0.33	36.86	21.87	36"	1.91%	7.29	143'



Q10 = 4.98 cfs
V10 = 7.14 cfs
So = 0.10 ft/ft
n = 0.025
dn = 0.53 ft.

SWALE CROSS SECTION B–B

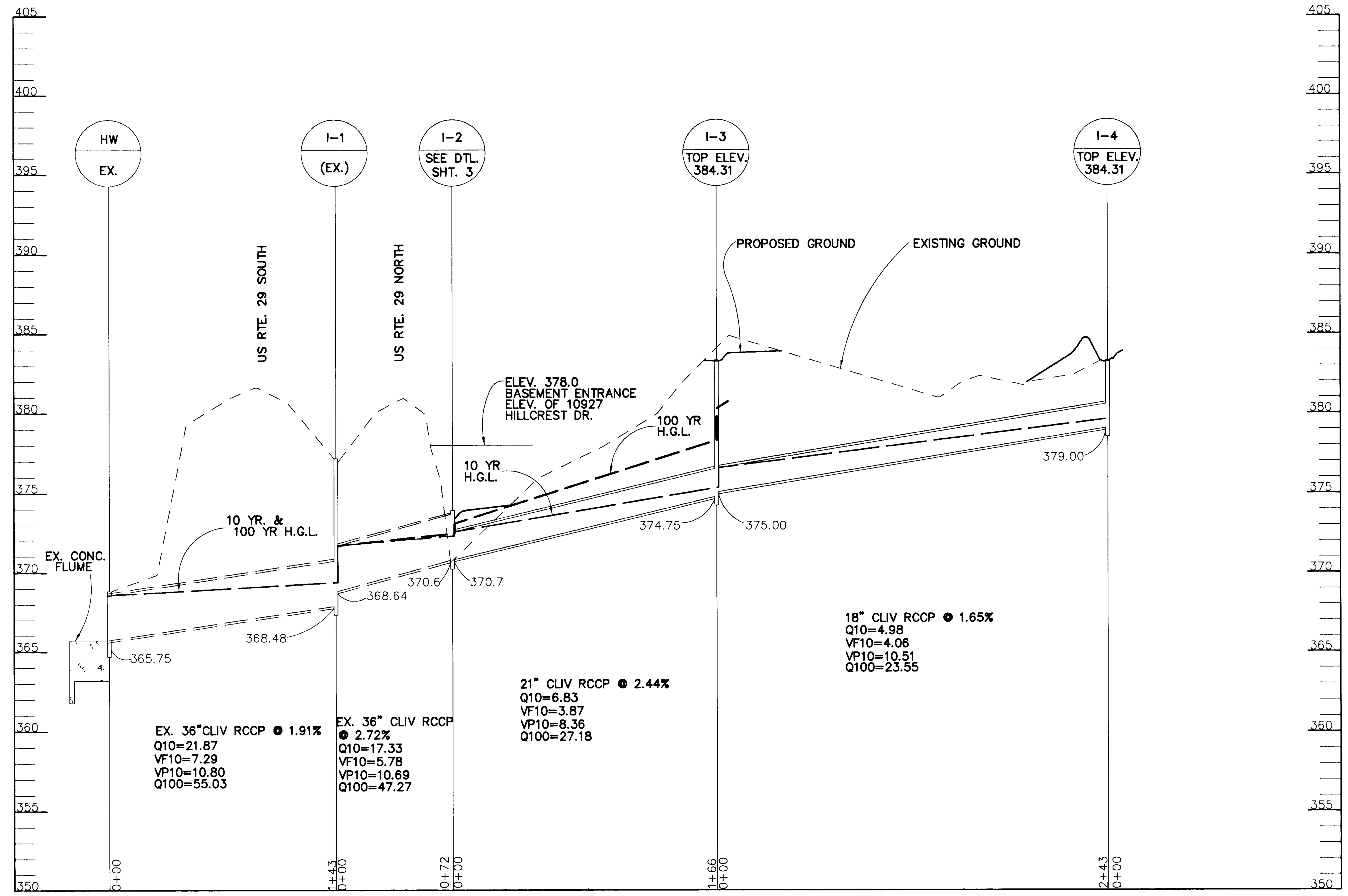
SCALE: 1" = 2'



Q10 = 4.98 cfs
V10 = 6.58 fps
So = 0.094 ft/ft
n = 0.025
dn = 0.43 ft.

SWALE CROSS SECTION A–A

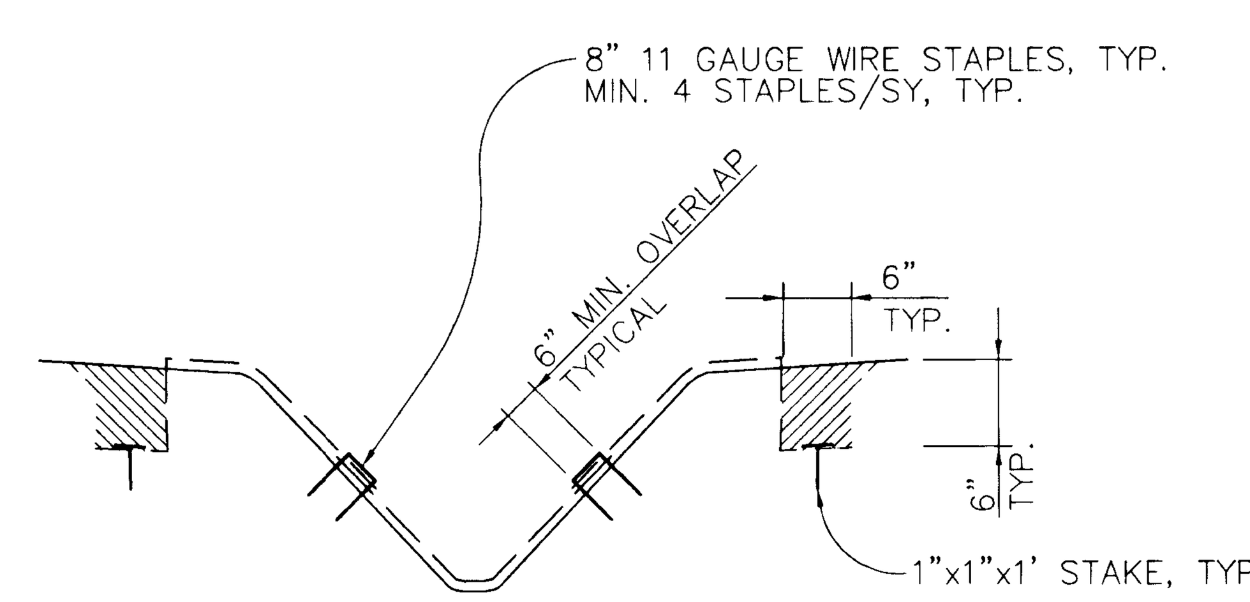
SCALE: 1" = 2'



STORM DRAIN PROFILE

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

NOTE: "TOP ELEV" DENOTES THE ELEV AT THE TOP OF THE INLET SLAB AT CENTER LINE OF INLET.



TYPICAL EROSION CONTROL MATTING INSTALLATION SECTION DETAIL

N.T.S.

EROSION CONTROL MATTING INSTALLATION NOTES:

1. ALL MATTING SHALL BE FREE OF TEARS OR BREAKS.
2. PRIOR TO INSTALLATION OVER DESIGNATED AREA, FINAL GRADING MUST BE COMPLETE.
3. PREPARE SOIL BEFORE INSTALLING BLANKETS. INCLUDE APPLICATION OF LIME, FERTILIZER AND SEED.
4. BEGIN AT THE UPSTREAM END OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
5. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
6. PLACE BLANKETS END OVER END(SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
7. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
8. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 2" OVER THE CENTER BLANKET AND STAPLED.
9. PLACE A STAPLE CHECK SLOT AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
10. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
11. NO VEHICULAR TRAFFIC OF ANY KIND IS PERMITTED ON MATTING DURING OR AFTER INSTALLATION.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION — DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 2/24/98
CHIEF, BUREAU OF ENGINEERING — DATE 2/24/98
CHIEF, BUREAU OF HIGHWAYS — DATE 2/25/98
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT — DATE 2/24/98

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FRANK DONALDSON #8146
12-22-97

DES: D.A.S.
DRN: E.L.R.
CHK: G.C.L.
DATE: 12/22/97

BY	NO.	REVISION	DATE

STORM DRAIN PROFILE
STRUCTURE SCHEDULE &
SWALE CROSS SECTIONS

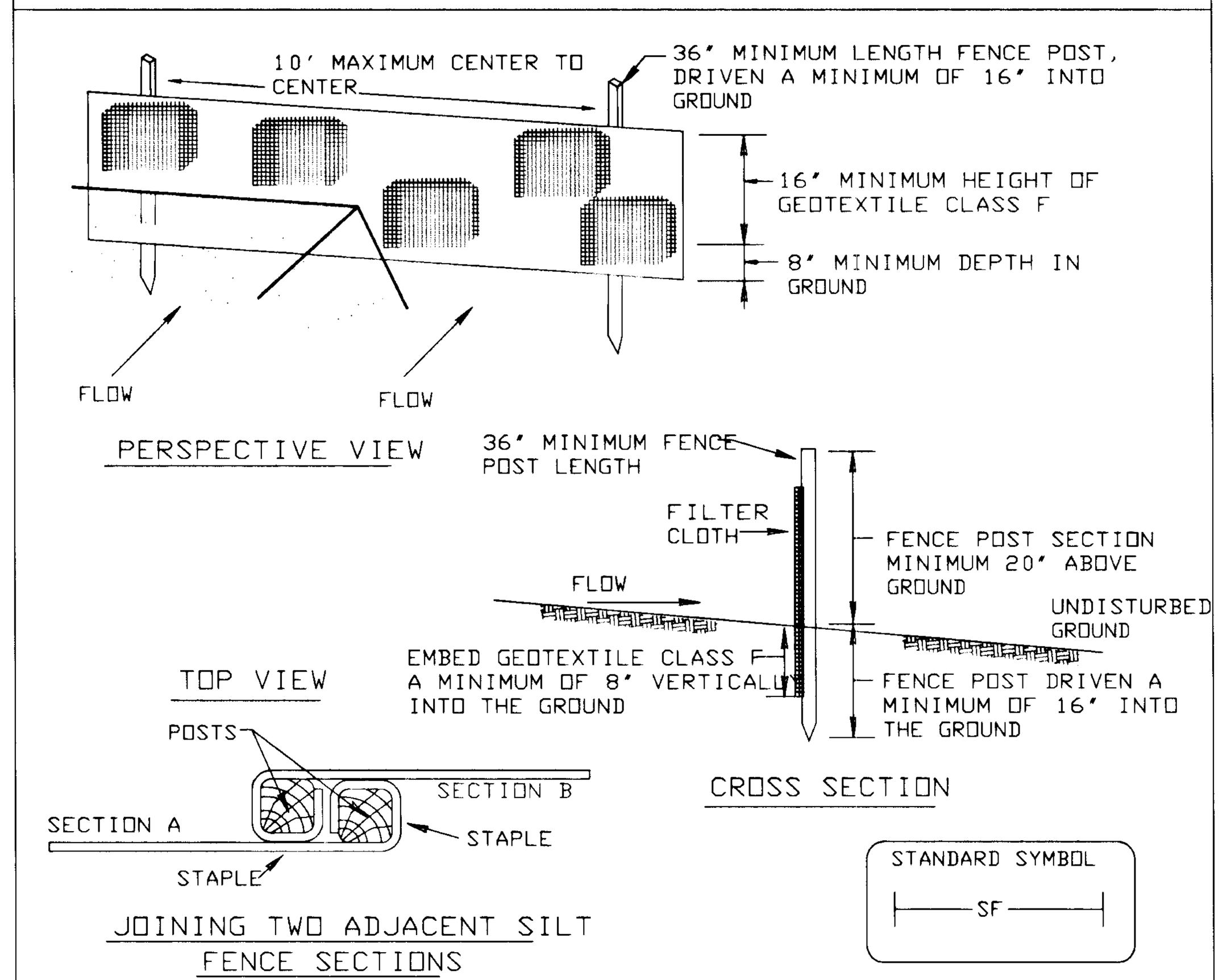
600' SCALE MAP NO. ____ BLOCK NO. ____

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D-1098

SCALE AS SHOWN

SHEET 2 OF 3

DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" 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
Flow Rate	0.3 gal ft ²/ minute (max.)	Test: MSMT 322
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.

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SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

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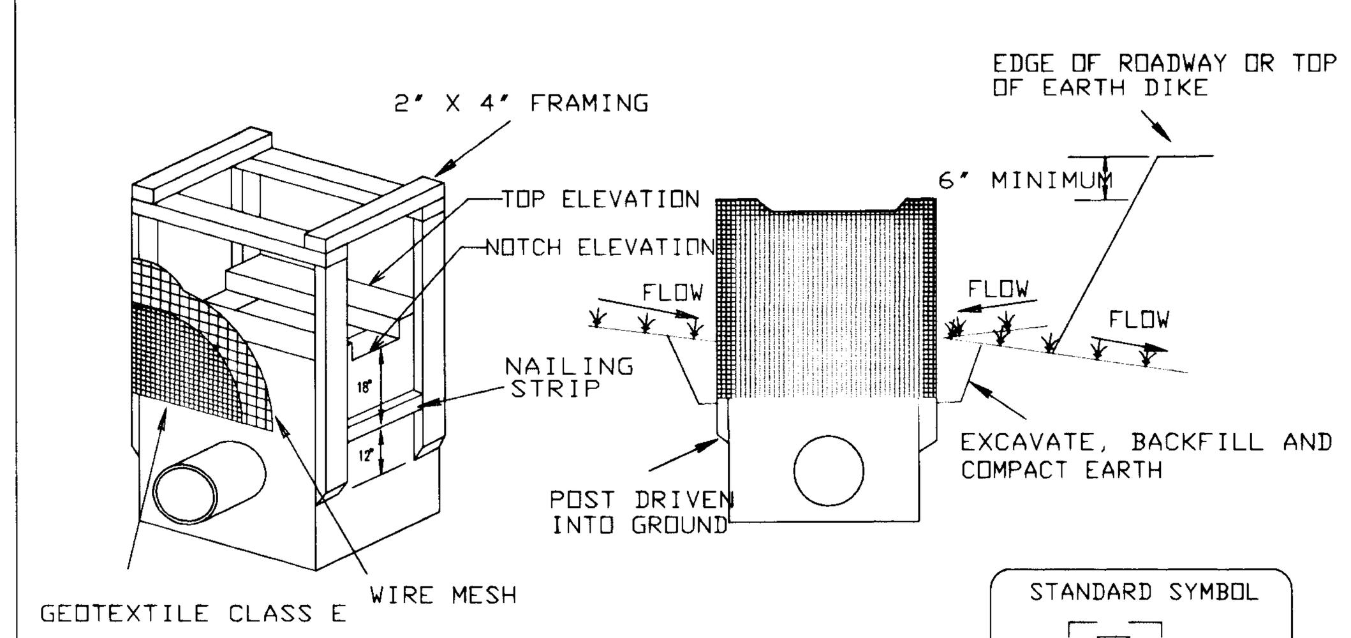
DETAIL 23A – STANDARD INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

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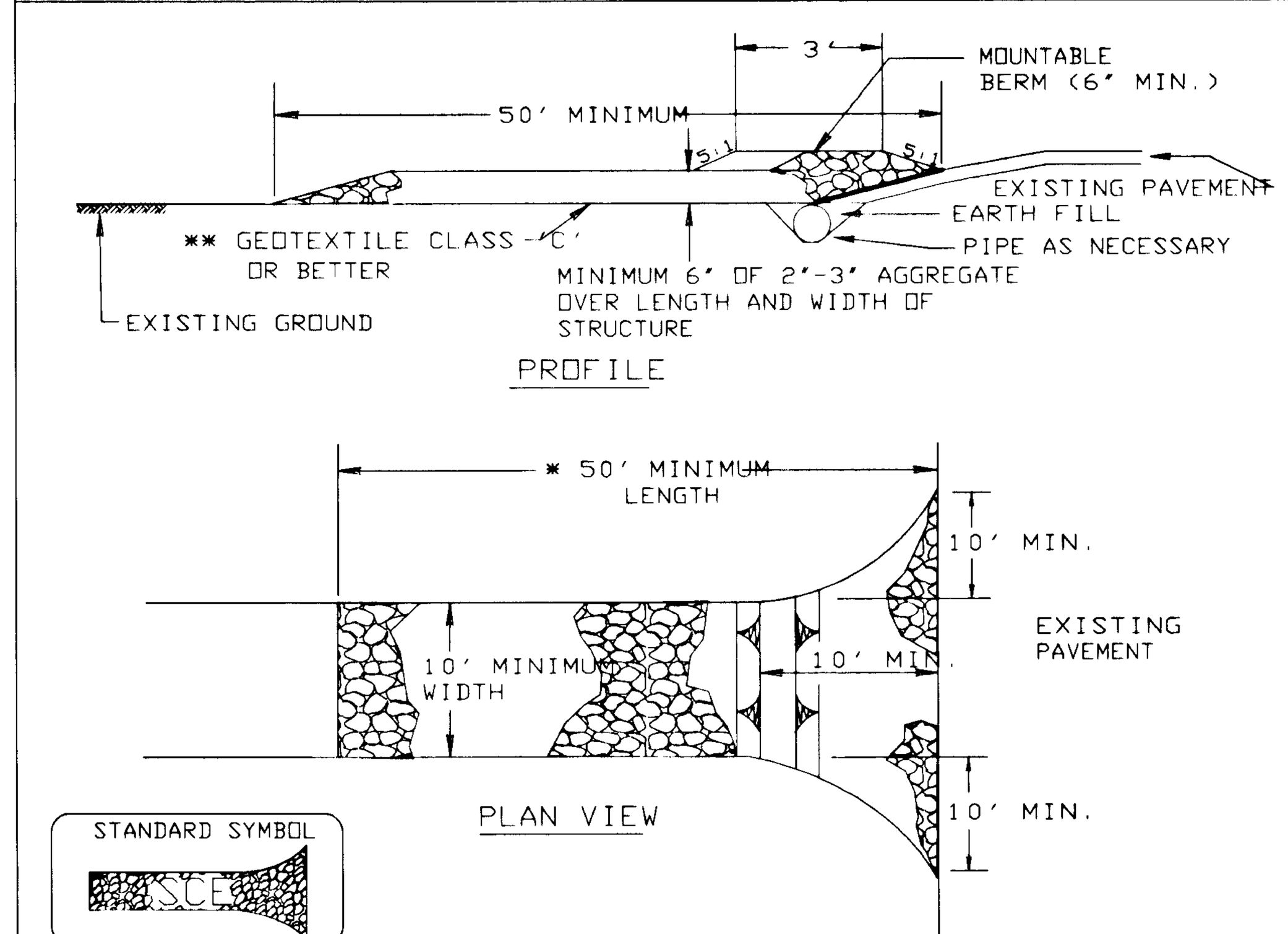
DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

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

2. 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 entrance.

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.

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STABILIZED CONSTRUCTION ENTRANCE

Construction Specification

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

2. 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 entrance.

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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.

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SODDING SPECIFICATIONS

SODDING SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD SPECIFICATION SECTION 707.

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT AND ALL OTHER NECESSARY PERMITS.
2. ADVISE SEDIMENT AND EROSION CONTROL INSPECTOR 48 HOURS IN ADVANCE OF COMMENCING WORK. (1 DAY)
3. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS DIRECTED BY HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, AND AS SHOWN ON DRAWINGS. (2 DAY)
4. INSTALL NEW STORM DRAIN. STABILIZE WORK AREA AT THE END OF EACH DAYS WORK. (7 DAYS)
5. STABILIZE DISTURBED AREA AS INDICATED ON THE DRAWING. (3 DAYS)
6. REMOVE SEDIMENT AND EROSION CONTROL DEVICES WITH PERMISSION OF INSPECTOR AND STABILIZE BALANCE OF AREA. (2 DAY)

NOTE: OPEN TRENCH FOR THE CONSTRUCTION OF THE STORM DRAIN SHALL BE LIMITED TO 60 FEET.

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, if not previously loosened.

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

Seeding : For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2–1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 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. per 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. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 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.

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, 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. per 1000 sq.ft.) and 600 lbs. per acre 10–10–10 fertilizer (14 lbs. per 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. per 1000 sq.ft.).

2) Acceptable – Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10–10–10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding : For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 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 (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options :

1) 2 tons per acre of well–anchored mulch straw and seed as soon as possible in the spring.

2) Use sod.

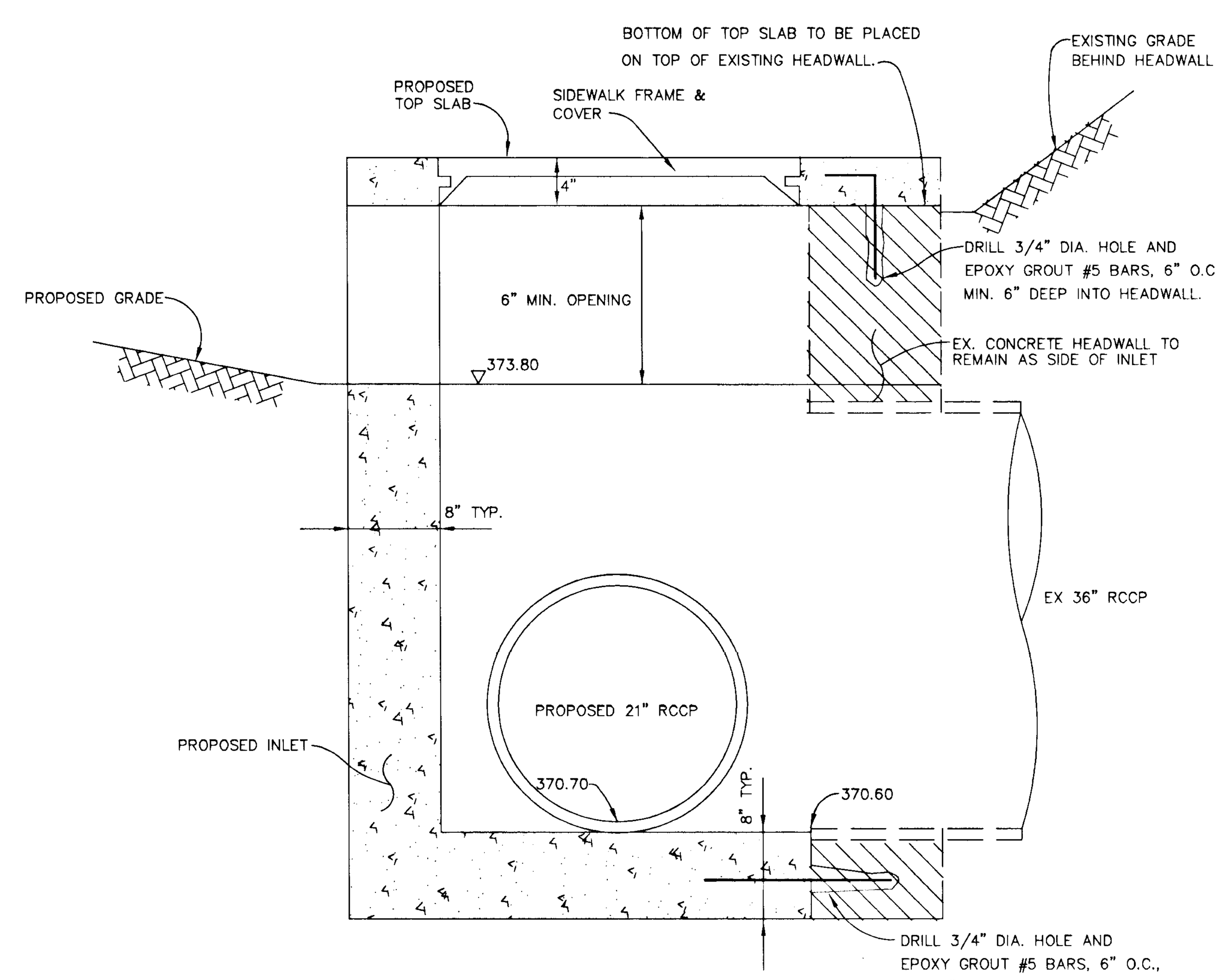
3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching : Apply 1–1/2 to 2 tons per acre (70 to 90 lbs. per 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. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance : Inspect all seeded areas and make needed repairs, replacements and reseedings.

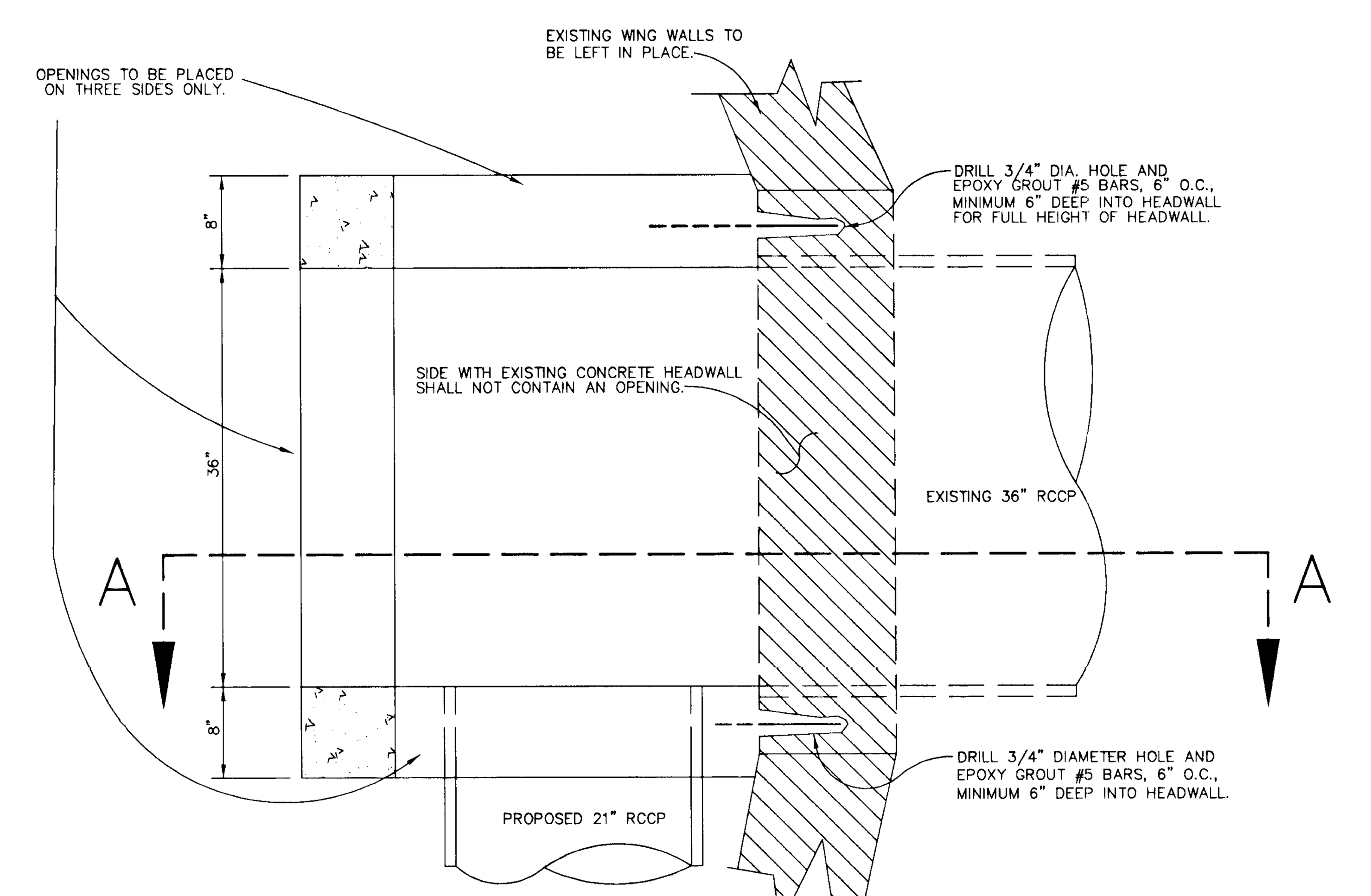
SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS 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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION 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 AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO 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 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL FOR PERMANENT SEEDINGS (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 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. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
7. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
8. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
9. 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 CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.



SEE HOCO. STD. DETAIL 4.11 FOR ANY REINFORCING AND DIMENSIONS NOT PROVIDED ON I-1 DETAIL

INLET I-1 – MODIFIED TYPE D INLET
SECTION A – A
SCALE: 1" = 1'



INLET I-1 – MODIFIED TYPE D INLET
PLAN VIEW WITH TOP SLAB REMOVED
SCALE: 1" = 1'

SITE ANALYSIS	
DRAINAGE AREA	19.50 ACRES
TOTAL DISTURBED AREA	0.35 AC
AREA IN CUT	0.08 AC
AREA IN FILL	0.03 AC
VOLUME OF CUT	252 CY
VOLUME OF FILL	83 CY
AREA TO BE VEGETATIVELY STABILIZED	0.35 AC
AREA TO ROOFED OR PAVED	0.00 AC

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION — DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — 2/24/98 DATE
CHIEF, BUREAU OF ENGINEERING — 2/24/98 DATE
CHIEF, BUREAU OF HIGHWAYS — 2/2/98 DATE
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT — 2/24/98 DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX : 410-997-9282
ENVENG/W00001 W-CLARKS.DWG

STATE OF MARYLAND — FRANK H. DONALDSON — No. 8146 — REGISTERED PROFESSIONAL ENGINEER
FRANK DONALDSON #8146
12-22-97

DES: D.A.S.
DRN: E.L.R.
CHK: G.C.L.
DATE: 12/22/97

BY	NO.	REVISION	DATE

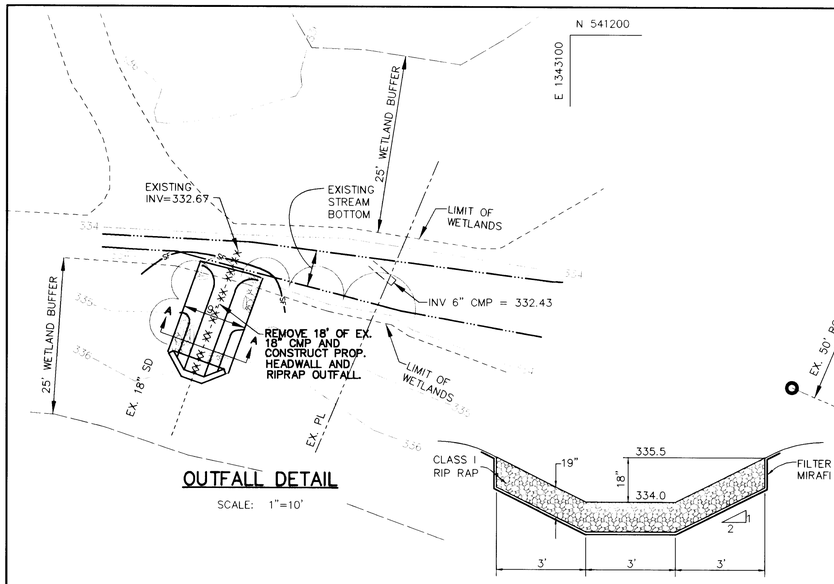
SEDIMENT AND EROSION CONTROL

600' SCALE MAP NO. — BLOCK NO.

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D-1098

SCALE AS SHOWN

SHEET 3 OF 3

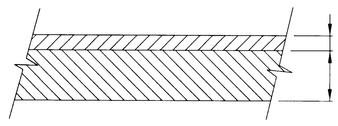


OUTFALL DETAIL

SCALE: 1"=10'

OUTFALL SECTION A-A

SCALE: 1"=4'



P-2 PAVING DETAIL

SCALE: 1" = 1'-0"

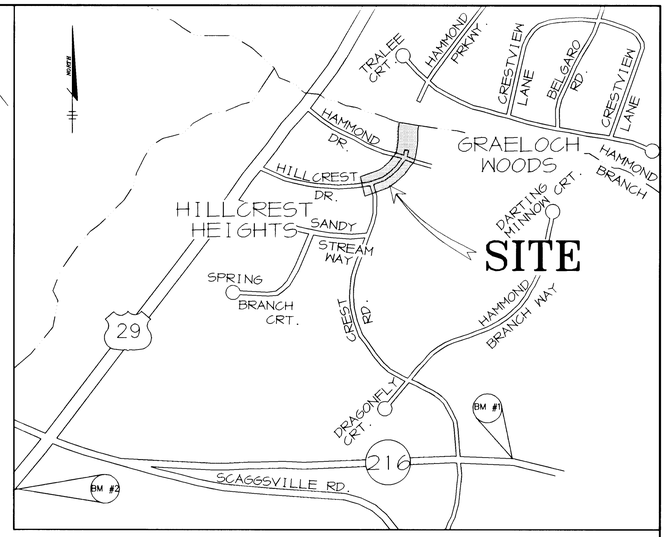
PLAN

SCALE: 1"=30'

BENCH MARKS	
BM #1	HO. CO. STAMPED CONCRETE MON. #46B2. N 539987.722 E 1337218.970
BM #2	HO. CO. STAMPED CONCRETE MON. #46BA N 537545.849 E 1339849.084

TOTAL DISTURBED AREA:

8,825 SQ. FT.



VICINITY MAP

SCALE: 1"=600'

GENERAL NOTES

1. Existing utilities are shown for the convenience of the Contractor and the completeness or accuracy of the same is not guaranteed. The Contractor shall determine the location and elevation of the existing utilities before trench excavation begins. He shall protect service connections and maintain their uninterruped service. Any damage caused by the Contractor shall be repaired immediately. The cost of such repairs shall be borne by the Contractor.
2. Roadside drainage ditches, culverts and underdrains which are damaged or destroyed by construction will be restored to a condition at least equal to that prior to the start of construction at the Contractor's expense.
3. All areas disturbed within Easements and Right-Of-Ways shall be restored to a condition of at least equal to that which existed prior to the start of construction. The cost of such shall be borne by the Contractor.
4. All horizontal controls are based on NAD 83.
5. Vertical controls are based on U.S.G.S. datum.
6. All pipe elevations shown ( ) are invert elevations.
7. Clear all utilities by a minimum of 12". Clear all poles by 3'-0" minimum or tunnel as required. Coordinate with the utility companies to schedule any necessary bracing of the poles.
8. Storm drains shall have a minimum cover of 18" except where greater depths are indicated.
9. For details not shown on the drawings, and for materials required, refer to Howard Co. Design Manual Vol. IV, Standard Specifications for Construction.
10. Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

AT&T	410-393-3553
Baltimore Gas & Electric Co. Contractor Services	410-850-4620
Baltimore Gas & Electric Co. Underground Damage Control	410-787-9068
Miss Utility	1-800-257-7777
Bureau of Utilities, Howard County Department of Public Works	410-313-4900

11. Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located on private property within the construction strip, and outside the immediate line of excavation are not to be removed or damaged by the Contractor.
12. Contractor shall remove trees, stumps and roots along the immediate line of excavation. Payment for such removal shall be included in the unit price bid for construction of the stormdrain.
13. Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
14. Sediment control to be provided as shown and shall be approved by the Sediment Control Inspector before starting any site grading. Trench length is limited to three (3) pipe lengths at any one time, to be stabilized immediately.
15. Trenching and backfilling shall be in accordance with Howard County standard detail G2.01.
16. All work shall comply with all applicable provisions of the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" issued by the Maryland Department of the Environment and the Soil Conservation Service.
17. Boundary and topographic information shown here is based on County deeds and field surveys by Reimer Muegge & Associates, Inc. dated January 1999.
18. It shall be distinctly understood that failure to mention specifically any work which would be required to complete the project shall not relieve the Contractor of his responsibility to perform such work.
19. The Contractor shall note that in the case of a discrepancy between the scaled and the figured dimensions shown on the plans, the figured dimensions shall govern.
20. At the end of each working day, all sediment control measures will be inspected and left in operational condition.
21. Contractor shall immediately remove all spoil material from site to an approved location.

LEGEND

R.O.W. LINE	
PROPERTY LINE	
EARTH DIKE	
EX. FENCE LINE	x
EX. CONTOUR	
PROPOSED CONTOUR	
L.O.D.	L.O.D. L.O.D.
SILTFENCE	SF SF
PROPOSED INLET	
EX. INLET	
PROPOSED STORM DRAIN	
EX. TREE LINE	
PROP. TREE LINE	
EX. POWER POLE	
EX. POWER POLE W/GUY WIRES	
EX. STREET SIGN	
EX. MANHOLE (SANITARY)	S
CLASS I RIPRAP	
EX. WATER VALVE	
PROP. MANHOLE (SD)	D
EX. SANITARY SEWER	
EX. WATER MAIN	
EX. STORMDRAIN	
EX. WATER METER	
EX. FIRE HYDRANT	
PROP. HEADWALL	
EX. PROP. CORNER	
PROP. EASEMENT	
EXIST. SWALE	
TEST PIT	TP
INLET PROTECTION	
STANDARD INLET PROTECTION	SIP
CURB INLET PROTECTION	CIP

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, 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 SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR ~~POND CONSTRUCTION~~, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

4/4/2000
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — 4/6/00 DATE
CHIEF, BUREAU OF ENGINEERING — 4/5/00 DATE
CHIEF, BUREAU OF HIGHWAYS — 4-6-00 DATE
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT — 4/5/00 DATE

RIEMER MUEGGE & ASSOCIATES INC
ENGINEERING ● ENVIRONMENTAL SERVICES ● PLANNING ● SURVEYING
8618 Centre Park Drive, Columbia, MD 21045
tel 410.997.8900 fax 410.997.9282

STATE OF MARYLAND — FRANK DONALDSON #8146 — PROFESSIONAL ENGINEER
4/4/2000

DES: J.S.C.
DRN: R.J.C.
CHK: G.C.L.
JANUARY, 2000

BY	NO.	REVISION	DATE

HILLCREST DRIVE
STORM DRAIN PLAN

600' SCALE MAP NO. 41 BLOCK NO. 23

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D-1098

SCALE AS SHOWN

SHEET 1 OF 3

C1078 B#1

Please II

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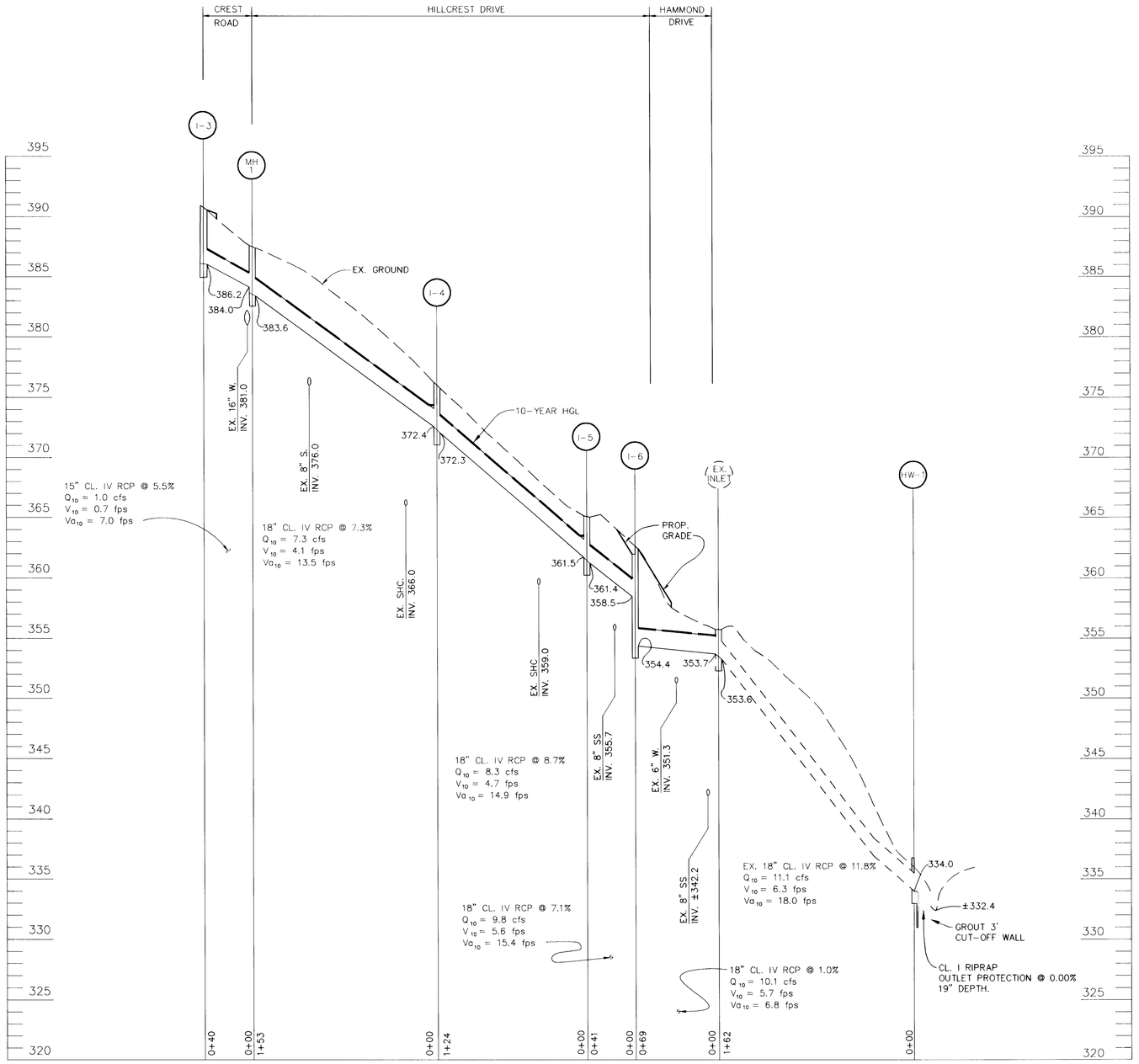
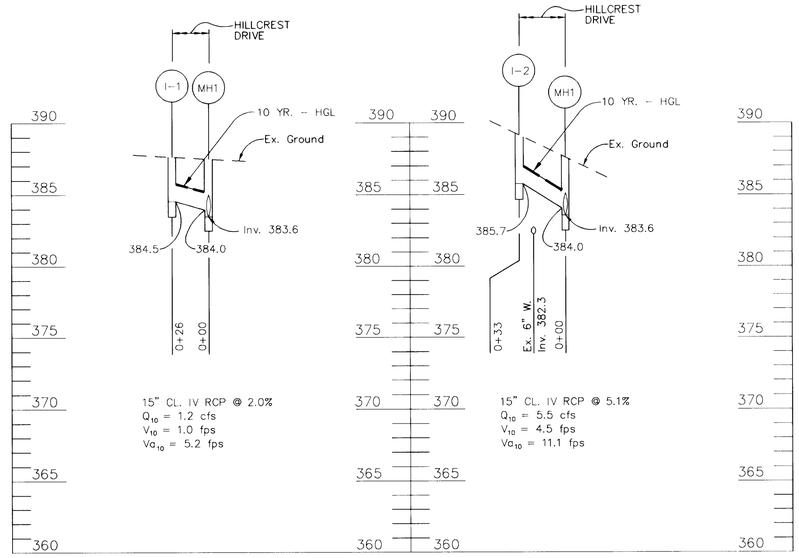


STORM DRAIN PROFILE

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



STORM DRAIN PROFILES

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

STORM DRAIN FLOW TABULATION

LOCATION		ACRES		C x A			TIME	I	Q = CIA	PIPE n = 0.013				TIME
FROM	TO	SUB.	TOTAL	C	C x A	SUM	(MIN.)	(IN./HR.)	10 YR. C.F.S.	SIZE	SLOPE %	VEL.(fps)	LGTH (ft)	(MIN.)
I-1	MH-1	0.89	0.89	0.28	0.25	0.25	19.2	4.82	1.2	15"	0.04	1.0	26	0.5
I-2	MH-1	3.83	3.83	0.28	1.073	1.073	16.2	5.12	5.5	15"	0.73	4.5	33	0.1
I-3	MH-1	0.68	0.68	0.28	0.191	0.191	16.2	5.12	1.0	15"	0.03	0.7	40	1.0
MH-1	I-4	—	5.40	—	—	1.514	19.7	4.75	7.3	18"	0.48	4.1	153	0.6
I-4	I-5	0.93	6.33	0.28	0.261	1.773	20.3	4.67	8.3	18"	0.63	4.7	124	0.4
I-5	I-6	1.22	7.55	0.28	0.342	2.114	20.7	4.63	9.8	18"	0.87	5.6	41	0.1
I-6	EX. I	0.28	7.83	0.28	0.079	2.196	20.8	4.61	10.1	18"	0.93	5.7	69	0.2
EX. I	HW-1	0.23	8.06	0.28	0.065	2.408	21.0	4.59	11.1	18"	1.12	6.3	180	0.5

STRUCTURE SCHEDULE

STRUCTURE NUMBER	LOCATION	TYPE	TOP GRATE ELEV.	INV. IN	INV. OUT	REMARKS
I-1	N 540767.6871 E 1343191.7931	TYPE A-5	387.6	---	384.5	HO. CO. STD. SD-4.01
I-2	N 540740.2058 E 1343182.9055	TYPE 'E'	389.0	---	385.7	MOD. HO. CO. SD-4.21
I-3	N 540715.5975 E 1343221.7225	TYPE A-5	390.8	---	386.2	HO. CO. STD. SD-4.01
MH-1	N 540754.4868 E 1343212.1927	STD. 4'-0"	387.5	384.0	383.6	HO. CO. STD. G-5.12
I-4	N 540922.7159 E 1343446.0769	DOUBLE 'S' COMBINATION	376.0	372.4	372.3	HO. CO. STD. SD-4.34 PARALLEL TO CURB
I-5	N 540887.1283 E 1343453.0519	DOUBLE 'S' COMBINATION	365.0	361.5	361.4	HO. CO. STD. SD-4.34 PARALLEL TO CURB
I-6	N 540927.0502 E 1343445.9035	TYPE A-5	362.0	358.5	354.4	HO. CO. STD. SD-4.01
HW-1	N 541145.9478 E 1343481.5167	TYPE A	–	–	334.0	HO. CO. STD. SD-5.11

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/5/00
CHIEF, BUREAU OF ENGINEERING — DATE 4/5/00
CHIEF, BUREAU OF HIGHWAYS — DATE 4-6-00
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT — DATE 4/5/00

RIEMER MUEGGE & ASSOCIATES INC
ENGINEERING ⊕ ENVIRONMENTAL SERVICES ⊕ PLANNING ⊕ SURVEYING
8618 Centre Park Drive, Columbia, MD 21045
tel 410.997.8900 fax 410.997.9282

STATE OF MARYLAND — FRANK M. DONALDSON — 8146 — REGISTERED PROFESSIONAL ENGINEER
FRANK DONALDSON #8146
4/4/2000

DES: J.S.C.
DRN: R.J.C.
CHK: G.C.L.
JANUARY, 2000

BY	NO.	REVISION	DATE

STORM DRAIN PROFILES
STRUCTURE SCHEDULE &
STORM DRAIN COMPUTATIONS

600' SCALE MAP NO. 41 BLOCK NO. 23

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D-1098

SCALE AS SHOWN

SHEET 2 OF 3

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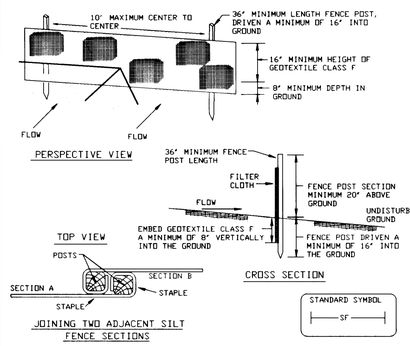
DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round wood. 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:

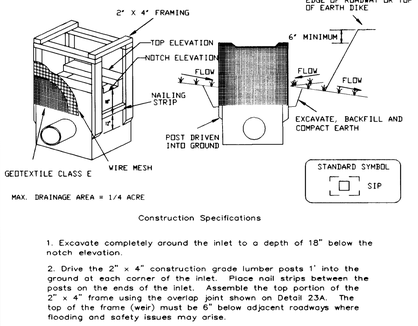
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft ² / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23A – STANDARD INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotitkle extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

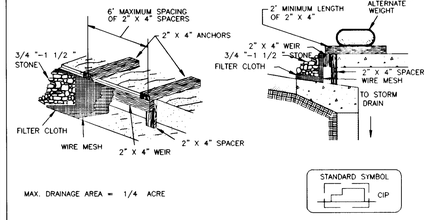
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 16 – 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23C – CURB INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4") to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

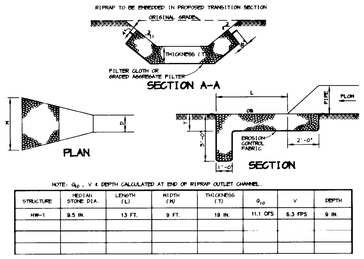
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 16 – 5B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



NOTE: d_{50} = V 4 DEPTH CALCULATED AT END OF RIPRAP OUTLET CHANNEL.

STRUCTURE	MEDIAN STONE DIA.	LENGTH (L)	WIDTH (W)	THICKNESS (T)	Q_{10}	V	DEPTH
HW-1	9.5 IN.	13 FT.	9 FT.	18 IN.	11.1 CFS	6.3 FPS	9 IN.

RIPRAP OUTLET PROTECTION DETAIL

NO SCALE

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS 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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION 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 AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO 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 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 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL FOR PERMANENT SEEDINGS (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 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: HILLCREST DRIVE

TOTAL AREA OF SITE (DRAINAGE AREA)	8.06 ACRES
AREA DISTURBED	0.20 AC
AREA TO BE ROOFED OR PAVED	0.14 AC
AREA TO BE VEGETATIVELY STABILIZED	0.06AC
TOTAL CUT	20 CY
TOTAL FILL	20 CY
OFFSITE WASTE/BORROW AREA LOCATION	N/A

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.
10. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.
11. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
12. 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 CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.
13. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., 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.
14. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

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, if not previously loosened.

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

Seeding : For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2–1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 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. per 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. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 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.

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, 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. per 1000 sq.ft.) and 600 lbs. per acre 10–10–10 fertilizer (14 lbs. per 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. per 1000 sq.ft.).

2) Acceptable – Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10–10–10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding : For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 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 (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options :

1) 2 tons per acre of well–anchored mulch straw and seed as soon as possible in the spring.
2) Use sod.
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. per 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. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance : Inspect all seeded areas and make needed repairs, replacements and reseedings.

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 15 – 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT AND ALL OTHER NECESSARY PERMITS.
2. ADVISE SEDIMENT AND EROSION CONTROL INSPECTOR 48 HOURS IN ADVANCE OF COMMENCING WORK. (1 DAY)
3. INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS DIRECTED BY HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, AND AS SHOWN ON DRAWINGS. (2 DAY)
4. INSTALL NEW STORM DRAIN AND HEADWALL OUTFALL. STABILIZE WORK AREA AT THE END OF EACH DAYS WORK. (14 DAYS)
5. STABILIZE DISTURBED AREA AS INDICATED ON THE DRAWING. (3 DAYS)
6. REMOVE SEDIMENT AND EROSION CONTROL DEVICES WITH PERMISSION OF INSPECTOR AND STABILIZE BALANCE OF AREA. (2 DAY)

NOTE: OPEN TRENCH FOR THE CONSTRUCTION OF THE STORM DRAIN SHALL BE LIMITED TO 60 FEET.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/6/00
CHIEF, BUREAU OF ENGINEERING — DATE 4/5/00
CHIEF, BUREAU OF HIGHWAYS — DATE 4-6-00
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT — DATE 4/5/00

RIEMER MUEGGE & ASSOCIATES INC
ENGINEERING ● ENVIRONMENTAL SERVICES ● PLANNING ● SURVEYING
8818 Centre Park Drive, Columbia, MD 21045
tel 410.997.8900 fax 410.997.9282

STATE OF MARYLAND — FRANK DONALDSON — PROFESSIONAL ENGINEER
FRANK DONALDSON #8146
4/4/2000

DES: J.S.C.
DRN: R.J.C.
CHK: G.C.L.
JANUARY, 2000

BY	NO.	REVISION	DATE

SEDIMENT AND EROSION CONTROL

600' SCALE MAP NO. 41 BLOCK NO. 23

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D–1098

SCALE AS SHOWN

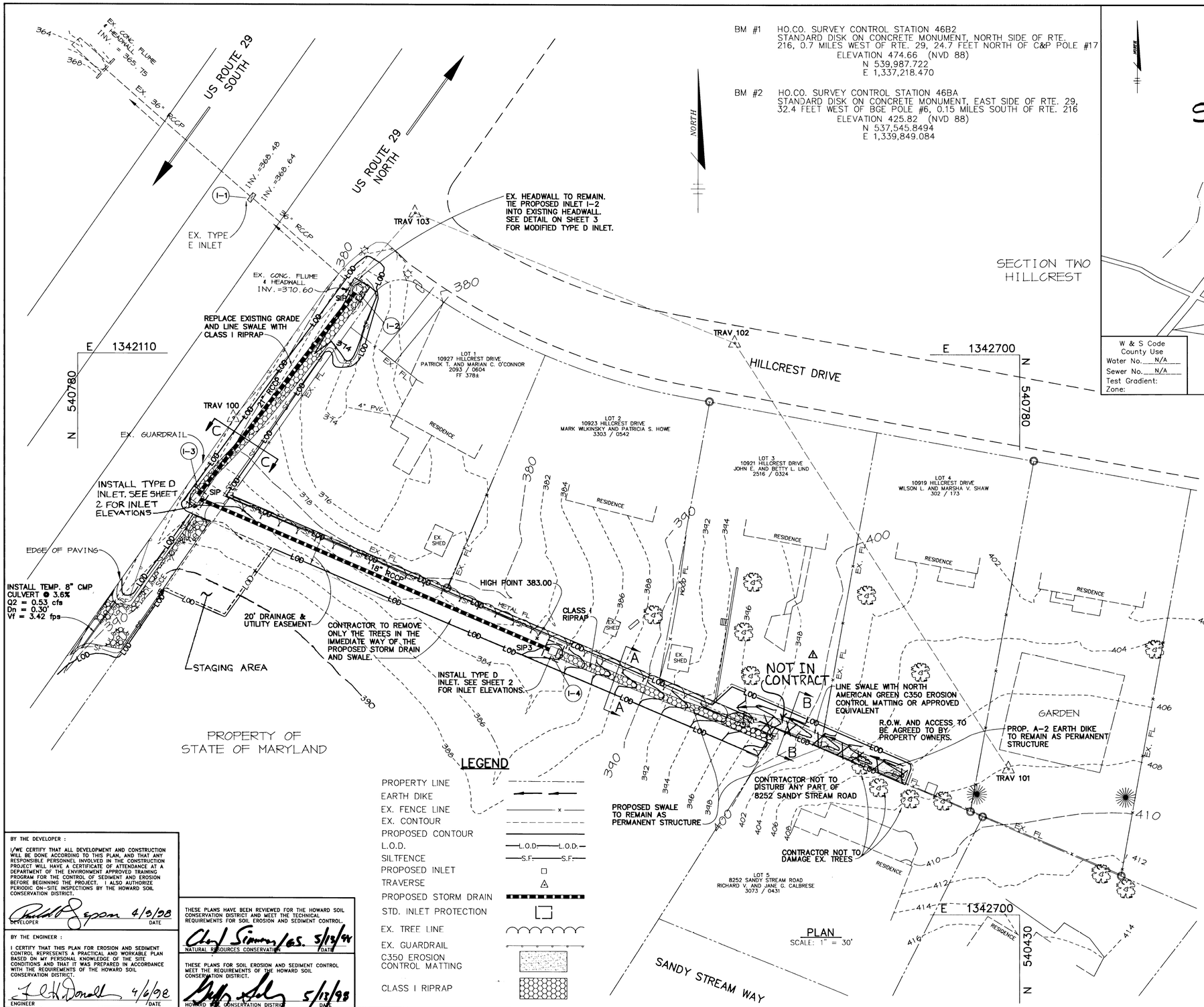
SHEET 3 OF 3

F:\PROJECT\98015\Sederoco.dwg Tue Apr 04 15:28:09 2000 RIEMER MUEGGE & ASSOCIATES, INC.

BM #1 HO.CO. SURVEY CONTROL STATION 46B2
STANDARD DISK ON CONCRETE MONUMENT, NORTH SIDE OF RTE. 216, 0.7 MILES WEST OF RTE. 29, 24.7 FEET NORTH OF C&P POLE #17
ELEVATION 474.66 (NVD 88)
N 539,987.722
E 1,337,218.470

BM #2 HO.CO. SURVEY CONTROL STATION 46BA
STANDARD DISK ON CONCRETE MONUMENT, EAST SIDE OF RTE. 29, 32.4 FEET WEST OF BGE POLE #6, 0.15 MILES SOUTH OF RTE. 216
ELEVATION 425.82 (NVD 88)
N 537,545.8494
E 1,339,849.084

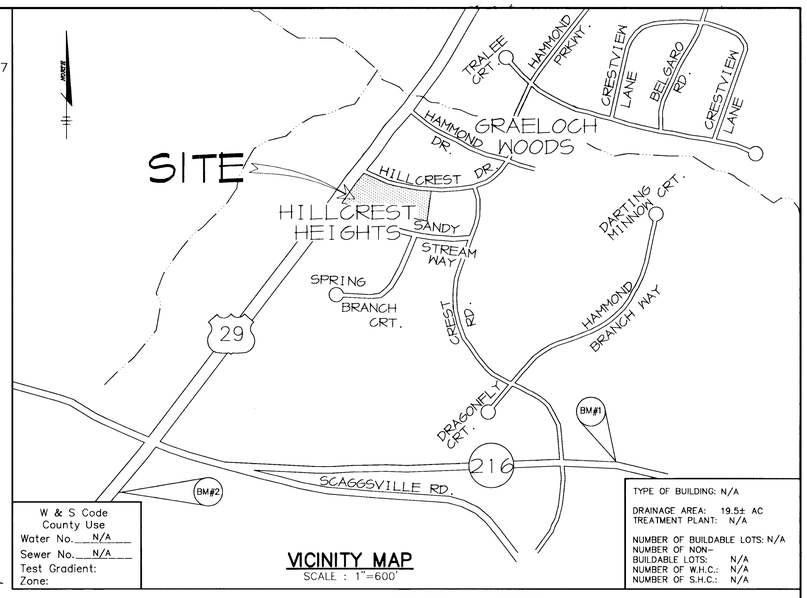
SECTION TWO
HILLCREST



PLAN
SCALE: 1" = 30'

LEGEND

- PROPERTY LINE
- EARTH DIKE
- EX. FENCE LINE
- EX. CONTOUR
- PROPOSED CONTOUR
- L.O.D.
- SILTFENCE
- PROPOSED INLET
- TRAVERSE
- PROPOSED STORM DRAIN
- STD. INLET PROTECTION
- EX. TREE LINE
- EX. GUARDRAIL
- C350 EROSION CONTROL MATTING
- CLASS I RIPRAP



VICINITY MAP
SCALE : 1"=600'

W & S Code
County Use
Water No. N/A
Sewer No. N/A
Test Gradient:
Zone:

TYPE OF BUILDING: N/A
DRAINAGE AREA: 19.5± AC
TREATMENT PLANT: N/A
NUMBER OF BUILDABLE LOTS: N/A
NUMBER OF NON-BUILDABLE LOTS: N/A
NUMBER OF W.H.C.: N/A
NUMBER OF S.H.C.: N/A

GENERAL NOTES

1. Approximate location of existing utilities and other obstructions are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer at the Contractor's expense.
2. All horizontal controls are based on NAD 83.
3. Vertical controls are based on U.S.G.S. datum.
4. All pipe elevations shown ( ) are invert elevations.
5. Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum or tunnel as required. Coordinate with the utility companies to schedule any necessary bracing of the poles.
6. For details not shown on the drawings, and for materials required, refer to Specifications.
7. Existing utilities in the vicinity of the proposed work shall be located by the Contractor two weeks in advance of construction operations at his own expense.
8. Contractor shall notify the following utility companies or agencies at least five working days before starting work shown on these plans:

State Highway Administration	410-531-5533
Baltimore Gas & Electric Co. Contractor Services	410-850-4620
Baltimore Gas & Electric Co. Underground Damage Control	410-787-9068
Miss Utility	1-800-257-7777
Bureau of Utilities, Howard County Department of Public Works	410-313-4900

9. Trees and shrubs are to be protected from damage to maximum extent. Trees and shrubs located on private property within the construction strip, and outside the immediate line of excavation are not to be removed or damaged by the Contractor.
10. Contractor shall remove trees, stumps and roots along the immediate line of excavation. Payment for such removal shall be included in the unit price bid for construction of the stormdrain.
11. Contractor is solely responsible for construction means, methods, techniques, sequences, procedures, and safety precautions and programs.
12. Sediment control to be provided as shown and shall be approved by the Sediment Control Inspector before starting any site grading. Trench length is limited to three (3)pipe lengths at any one time, to be stabilized immediately.
13. Contractor to protect the existing trees or shrubs and replace any damaged during construction.
14. Trenching and backfilling shall be in accordance with Howard County standard detail G2.01.
15. All work shall comply with all applicable provisions of the "1994 Maryland Standards and Specifications for Soil Erosion and Sediment Control" issued by the Maryland Department of the Environment and the Soil Conservation Service.
16. Boundary and topographic information shown here is based on "as-built" plans of Patuxent Springs dated July, 1990 and field surveys by Reimer Muegge & Associates, Inc., dated March 1997.
17. The Contractor shall note that in the case of a discrepancy between the scaled and the figured dimensions shown on the plans, the figured dimensions shall govern.
18. It shall be distinctly understood that failure to mention specifically any work which would be required to complete the project shall not relieve the Contractor of his responsibility to perform such work.
19. At the end of each working day, all sediment control measures will be inspected and left in operational condition.
20. Contractor shall immediately remove all spoil material from site to an approved location.

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
DEVELOPER — DATE 4/9/98

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.
ENGINEER — DATE 4/6/98

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
NATURAL RESOURCES CONSERVATION — DATE 5/13/98

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT — DATE 5/13/98

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS	4/8/98 DATE	CHIEF, BUREAU OF ENGINEERING	4/9/98 DATE
CHIEF, BUREAU OF HIGHWAYS	4-14-98 DATE	CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT	4/8/98 DATE

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
410-997-8900 FAX : 410-997-9282
ENVRENG/W00001 W-CLARKES.DWG

STATE OF MARYLAND — FRANK W. DONALDSON — NO. 8146 — REGISTERED PROFESSIONAL ENGINEER
FRANK DONALDSON #8146
4/6/98

DES: D.A.S.
DRN: E.L.R.
CHK: G.C.L.
DATE: 04/06/98

BY	NO.	REVISION	DATE
A.J.M.	1	REV. DITCH - MARK AS "NOT IN CONTRACT"	12/8/98

HILLCREST DRIVE
STORM DRAIN PLAN

600' SCALE MAP NO. _____ BLOCK NO. _____

C1078C #1

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D-1098

SCALE AS SHOWN

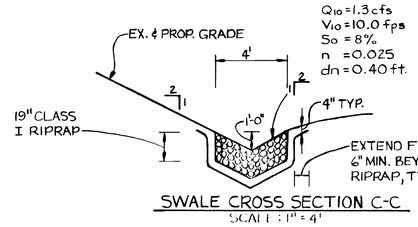
SHEET 1 OF 3

EP 98-17

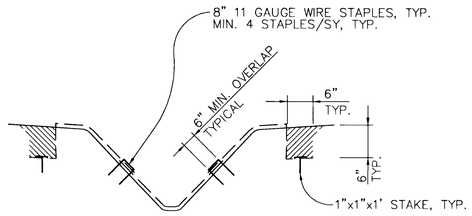
W:\PROJECTS\97064\HILLCRES\PLAN Mon Apr 6 12:13:03 1998 REIMER MUEGGE AND ASSOCIATES, INC.

STRUCTURE SCHEDULE							
STRUCTURE NUMBER	LOCATION	TYPE	TOP ELEV.	INV. IN	INV. OUT	CREST ELEV. OF INLET OPENING	REMARKS
I-1	N 540,877.73 E 1,342,218.96	EX. E	EXISTING	368.64	368.48	-----	———
I-2	N 540,820.23 E 1,342,285.18	D	TO MATCH EX. HW.	370.70	370.60	(SEE DETAIL ON SHEET 3)	MOD. HO. CO. SD4.11 SEE DETAIL ON SHT. 3
I-3	N 540,689.61 E 1,342,184.29	D	384.31	375.00	374.75	383.39	HO. CO. STD. SD4.11 ALL SIDES OPEN
I-4	N 540,594.45 E 1,342,407.29	D	384.31	—	379.00	383.39	HO. CO. STD. SD4.11 ALL SIDES OPEN

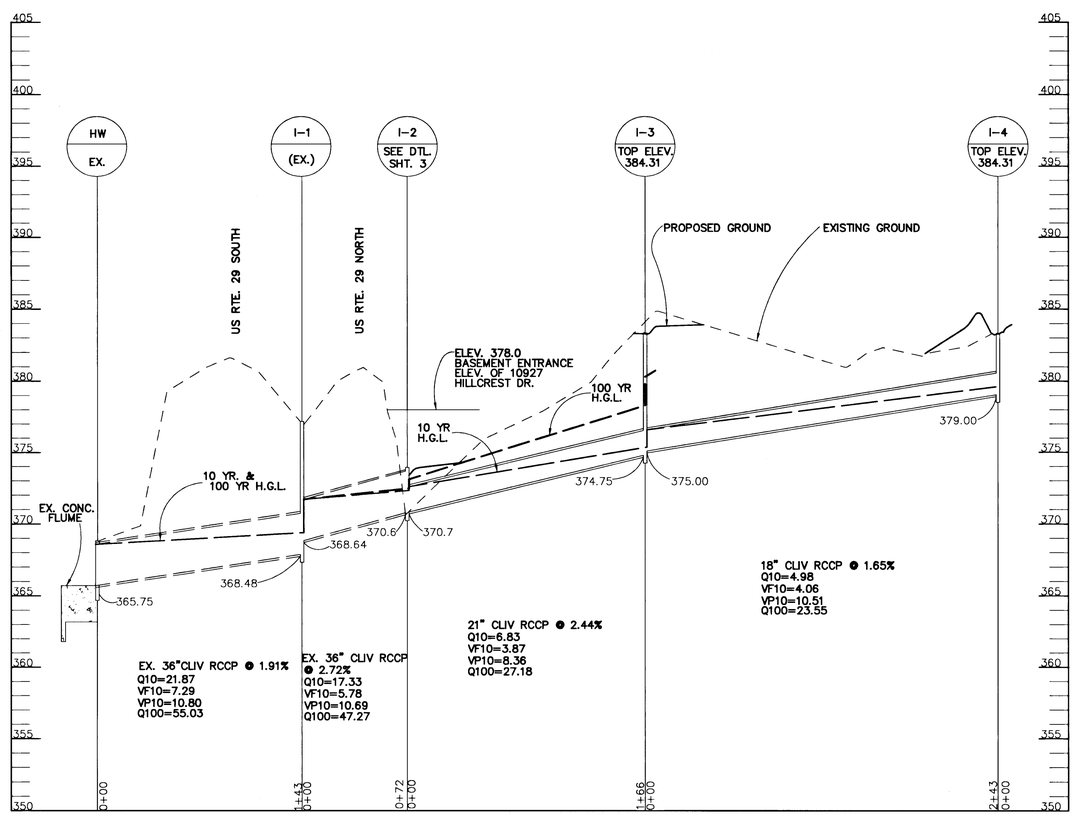
STORM DRAIN FLOW TABULATION											
LOCATION		ACRES		TIME CONC. (MIN.)			Q = CIA	PIPE n = 0.014			
FROM	TO	SUB.	TOTAL	INLET	DRAIN	TOTAL	10 YR. C.F.S.	SIZE	SLOPE	VEL.(fps)	LGTH.
	I-4	13.79	13.79	33.40			4.98				
I-4	I-3				1.44		4.98	18"	1.65%	2.82	243'
	I-3	1.30	15.09	27.60			1.85				
I-3	I-2				0.97	34.45	6.83	21"	2.44%	2.84	166'
	I-2	5.38	20.47	16.20			10.50				
I-2	I-1				0.21	35.89	17.33	36"	2.72%	5.78	72'
	I-1	2.08	22.55	27.60			4.54				
I-1	EX. HW				0.33	36.86	21.87	36"	1.91%	7.29	143'



SWALE CROSS SECTION C-C
SCALE : 1" = 4'



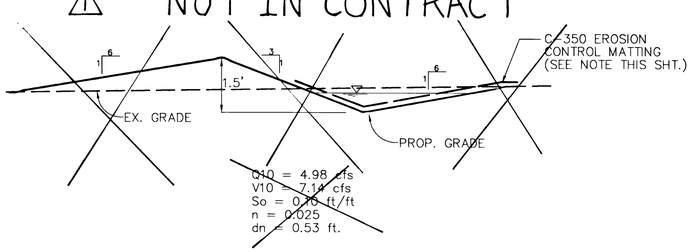
TYPICAL EROSION CONTROL MATTING INSTALLATION SECTION DETAIL
N.T.S.



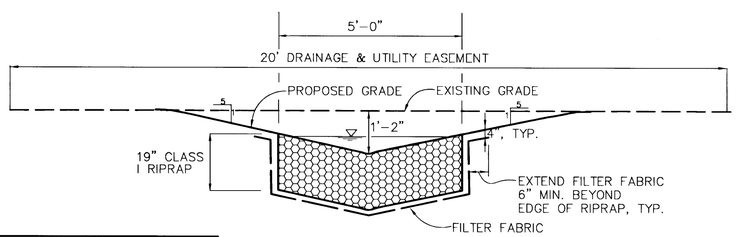
STORM DRAIN PROFILE
SCALE: VERT.: 1" = 5'
HORIZ.: = 1" = 50'

NOTE: "TOP ELEV" DENOTES THE ELEV AT THE TOP OF THE INLET SLAB AT CENTER LINE OF INLET.

⚠ NOT IN CONTRACT



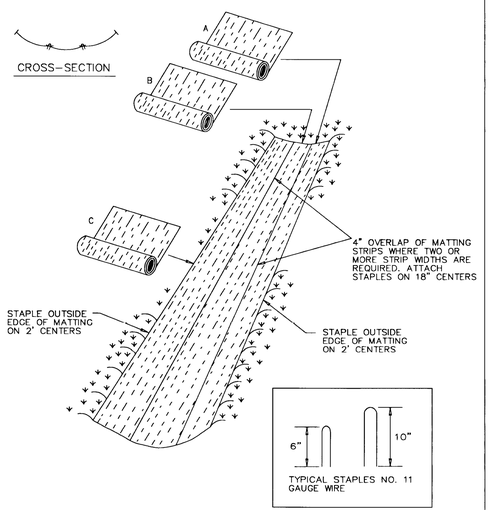
SWALE CROSS SECTION B-B
SCALE: 1" = 2'



Q10 = 4.98 cfs
V10 = 6.58 fps
So = 0.094 ft/ft
n = 0.025
dn = 0.43 ft.

SWALE CROSS SECTION A-A
SCALE: 1" = 2'

DETAIL 30 – EROSION CONTROL MATTING



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G - 22 - 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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 SOIL CONSERVATION SERVICE	PAGE G - 22 - 2A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

EROSION CONTROL MATTING INSTALLATION NOTES:

1. ALL MATTING SHALL BE FREE OF TEARS OR BREAKS.
2. EROSION CONTROL MATTING INSTALLATION SHALL OCCUR ON THE SAME WORKDAY AS FINAL GRADING.
3. PREPARE SOIL BEFORE INSTALLING BLANKETS. INCLUDE APPLICATION OF LIME, FERTILIZER AND SEED.
4. BEGIN AT THE UPSTREAM END OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
5. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
6. PLACE BLANKETS END OVER END(SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
7. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
8. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 2" OVER THE CENTER BLANKET AND STAPLED.
9. PLACE A STAPLE CHECK SLOT AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
10. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
11. NO VEHICULAR TRAFFIC OF ANY KIND IS PERMITTED ON MATTING DURING OR AFTER INSTALLATION.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
NATURAL RESOURCES CONSERVATION — DATE 5/12/98

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.
HOWARD SOIL CONSERVATION DISTRICT — DATE 5/12/98

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — DATE 4/9/98
CHIEF, BUREAU OF ENGINEERING — DATE 4/8/98
CHIEF, BUREAU OF HIGHWAYS — DATE 4-10-98
CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT — DATE 4/8/98

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410-997-8900 FAX : 410-997-9282
ENVRENG/W00001 W-CLARKS.DWG

STATE OF MARYLAND FRANK A. DONALDSON No. 8146 REGISTERED PROFESSIONAL ENGINEER
FRANK DONALDSON #8146
4/6/98

DES: D.A.S.
DRN: E.L.R.
CHK: G.C.L.
DATE: 04/06/98

BY	NO.	REVISION	DATE
AJM	⚠	REV. SWALE CROSS SECTION B-B AS N.I.C.	12/8/98

STORM DRAIN PROFILE
STRUCTURE SCHEDULE &
SWALE CROSS SECTIONS

600' SCALE MAP NO. _____ BLOCK NO. _____

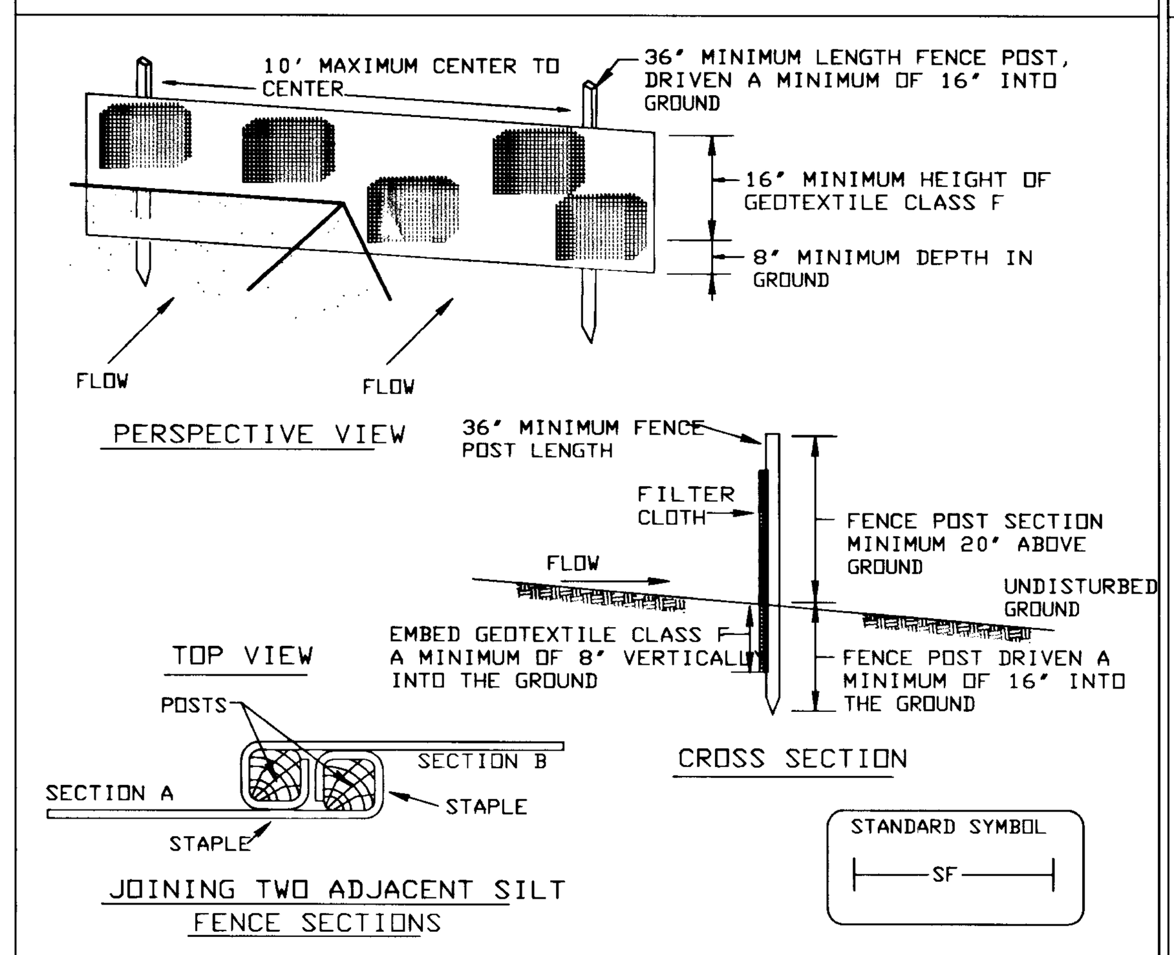
HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D-1098

SCALE AS SHOWN

SHEET 2 OF 3

M:\PROJECT\97064\HILLCRES\PROFILE Mon Apr 6 12:14:30 1998 RIEMER MUEGGE AND ASSOCIATES, INC.

DETAIL 22 – SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" 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
Flow Rate	0.3 gal ft ²/ minute (max.)	Test: MSMT 322
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.

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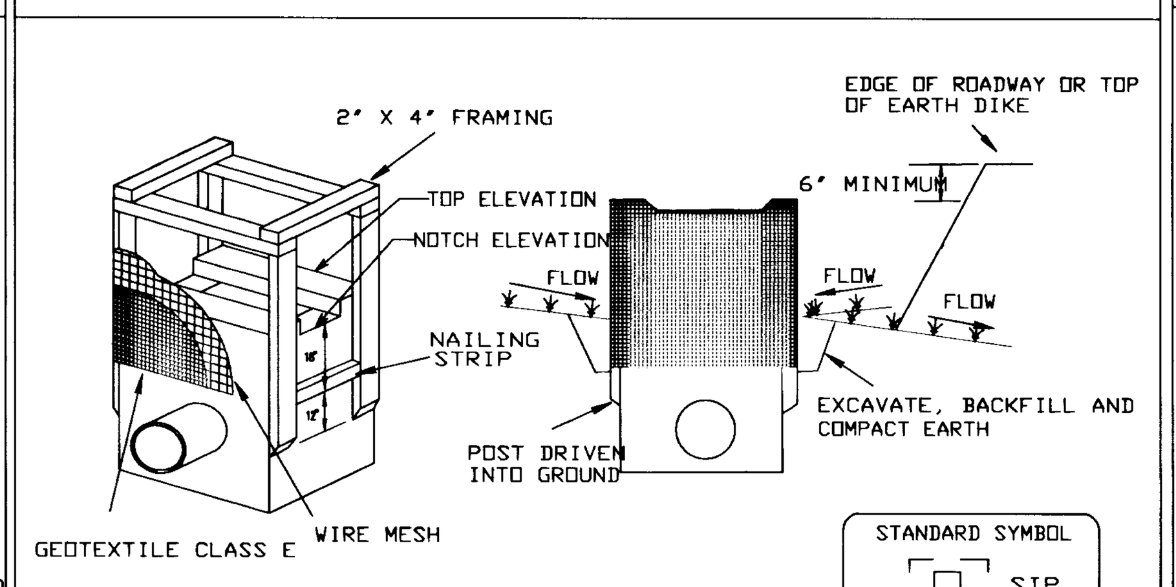
DETAIL 23A – STANDARD INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

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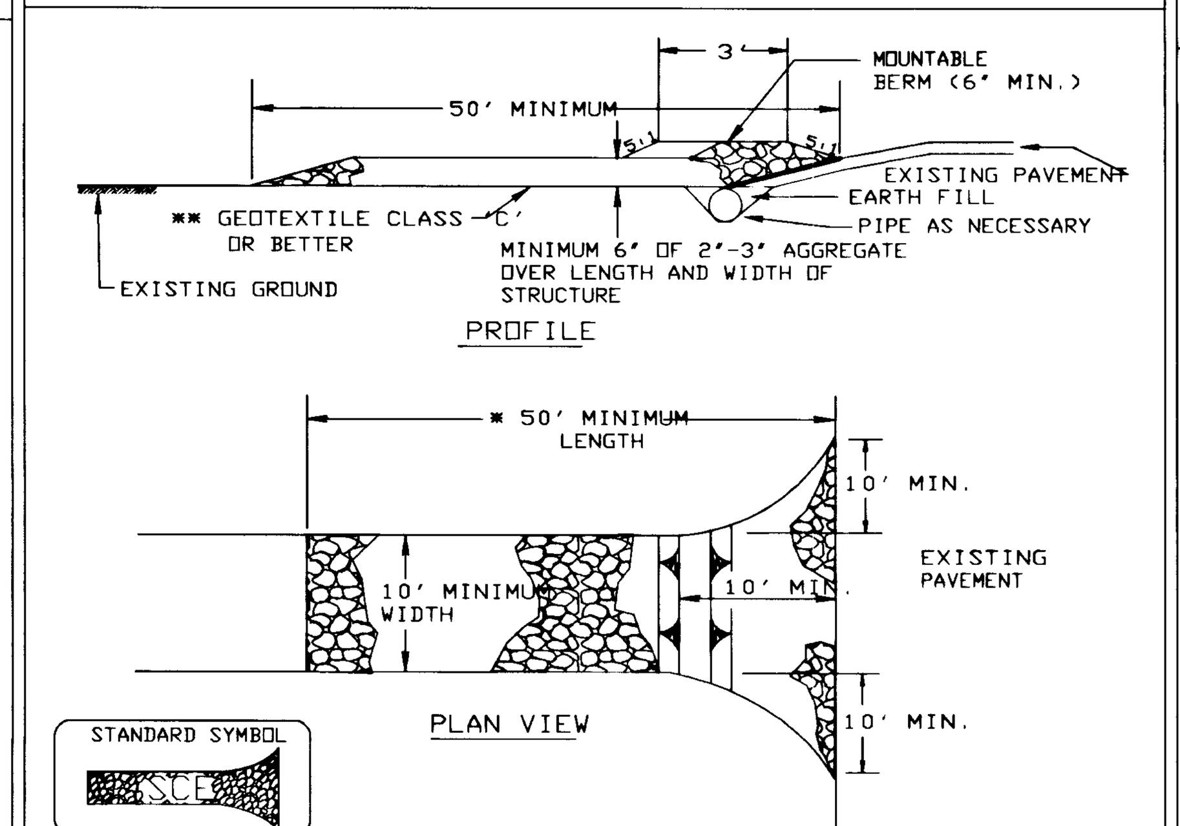
DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

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

2. 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 entrance.

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.

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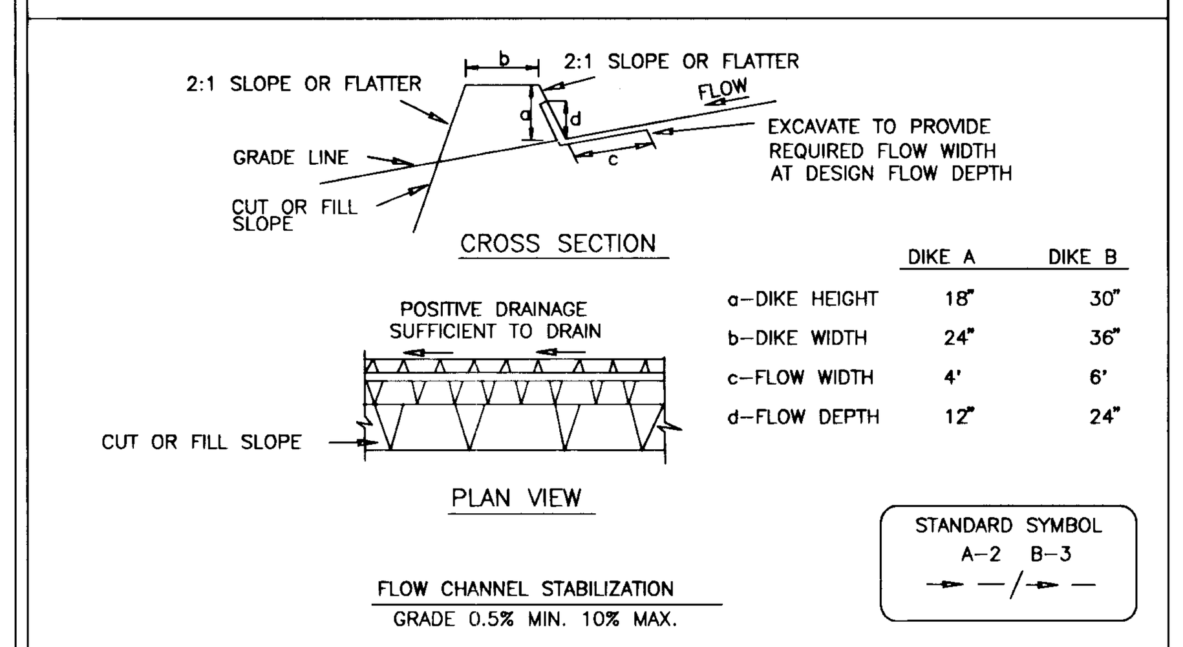
DETAIL 1 – EARTH DIKE



	DIKE A	DIKE B
a–DIKE HEIGHT	18"	30"
b–DIKE WIDTH	24"	36"
c–FLOW WIDTH	4'	6'
d–FLOW DEPTH	12"	24"

FLOW CHANNEL STABILIZATION

GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non–erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

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SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS 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 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION 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 AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO 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 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 1991 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL AND EROSION CONTROL FOR PERMANENT SEEDINGS (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 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	19.50 ACRES
AREA DISTURBED	0.40 AC
AREA TO BE ROOFED OR PAVED	0.00 AC
AREA TO BE VEGETATIVELY STABILIZED	0.40 AC
TOTAL CUT	252 CY
TOTAL FILL	83 CY
OFFSITE WASTE/BORROW AREA LOCATION	CONTRACTOR SHALL SELECT A LOCATION WITH AN APPROVED & ACTIVE GRADING PERMIT.

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.

10. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.

11. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.

12. 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 CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

13. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 AC., 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.

14. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

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, if not previously loosened.

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

Seeding : For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2–1/2 bushels per acre of annual rye (3.2 lbs. per 1000 sq.ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (0.07 lbs. per 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. per 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. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 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.

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, 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. per 1000 sq.ft.) and 600 lbs. per acre 10–10–10 fertilizer (14 lbs. per 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. per 1000 sq.ft.).

2) Acceptable – Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10–10–10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding : For the period March 1 thru April 30 and from August 1 thru October 15, seed with 60 lbs. per acre (1.4 lbs. per 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 (0.05 lbs. per 1000 sq.ft.) of weeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options :

1) 2 tons per acre of well–anchored mulch straw and seed as soon as possible in the spring.

2) Use sod.

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. per 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. per 1000 sq.ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 347 gal. per acre (8 gal. per 1000 sq.ft.) for anchoring.

Maintenance : Inspect all seeded areas and make needed repairs, replacements and reseedings.

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

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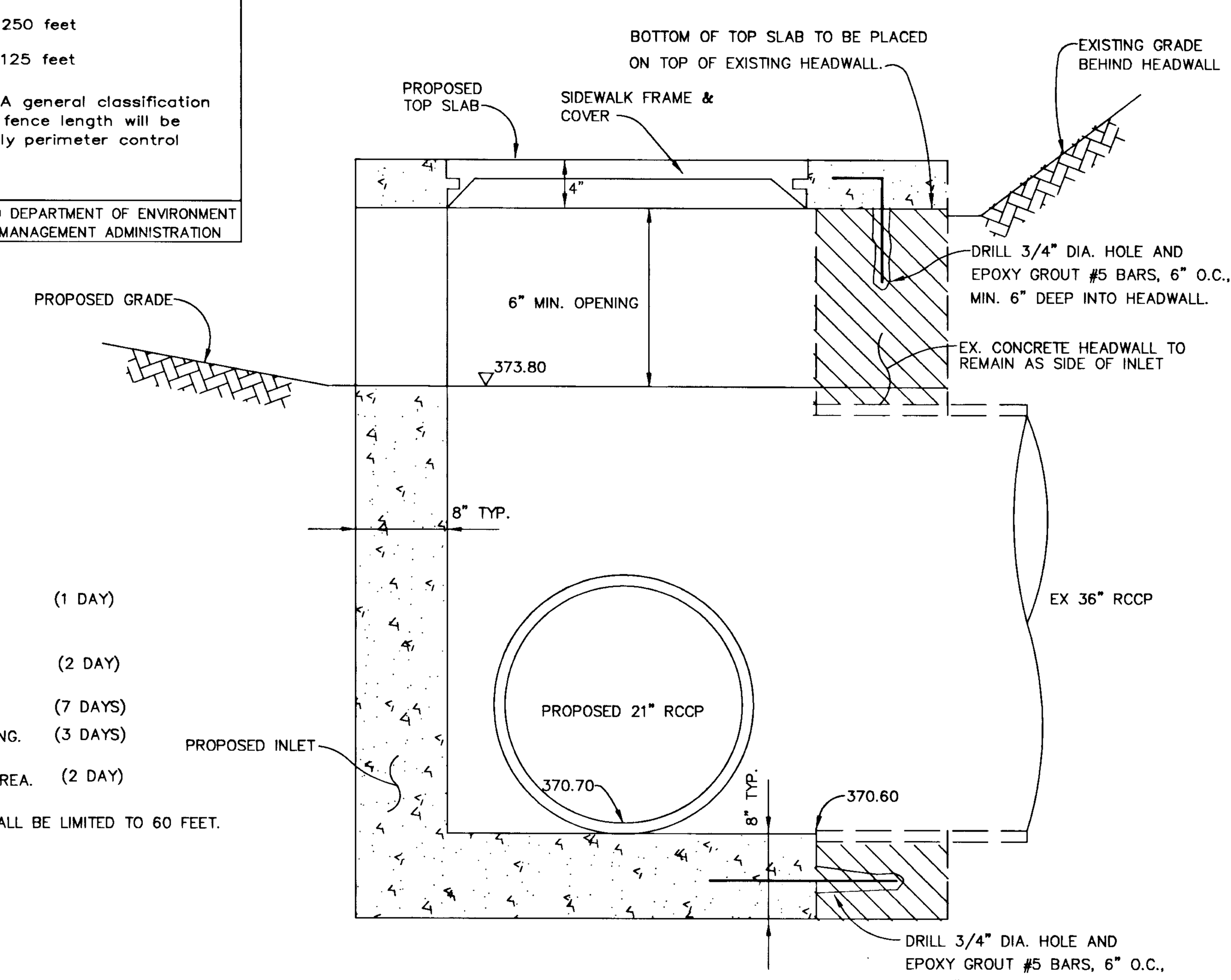
SEE HOCO. STD. DETAIL 4.11 FOR ANY REINFORCING AND DIMENSIONS NOT PROVIDED ON I–2 DETAIL

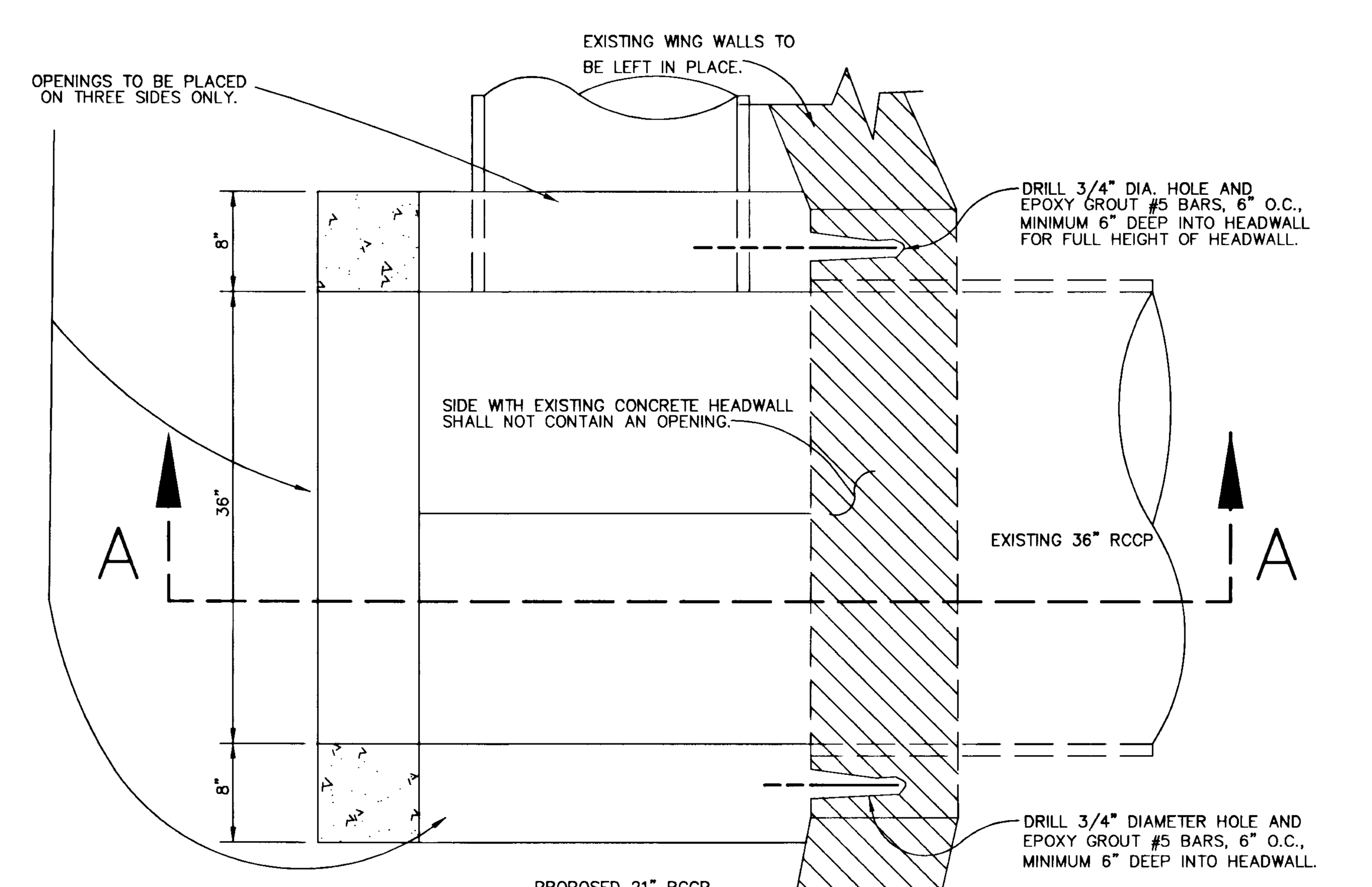
SEQUENCE OF CONSTRUCTION

1.	OBTAIN A GRADING PERMIT AND ALL OTHER NECESSARY PERMITS.	
2.	ADVISE SEDIMENT AND EROSION CONTROL INSPECTOR 48 HOURS IN ADVANCE OF COMMENCING WORK.	(1 DAY)
3.	INSTALL SEDIMENT AND EROSION CONTROL DEVICES AS DIRECTED BY HOWARD COUNTY DILP SEDIMENT CONTROL INSPECTOR, AND AS SHOWN ON DRAWINGS.	(2 DAY)
4.	INSTALL NEW STORM DRAIN. STABILIZE WORK AREA AT THE END OF EACH DAYS WORK.	(7 DAYS)
5.	STABILIZE DISTURBED AREA AS INDICATED ON THE DRAWING.	(3 DAYS)
6.	REMOVE SEDIMENT AND EROSION CONTROL DEVICES WITH PERMISSION OF INSPECTOR AND STABILIZE BALANCE OF AREA.	(2 DAY)

NOTE: OPEN TRENCH FOR THE CONSTRUCTION OF THE STORM DRAIN SHALL BE LIMITED TO 60 FEET.



INLET I–2 – MODIFIED TYPE D INLET
SECTION A – A
SCALE: 1" = 1'



INLET I–2 – MODIFIED TYPE D INLET
PLAN VIEW WITH TOP SLAB REMOVED
SCALE: 1" = 1'

21.0 STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

I. This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

I. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA–SCS in cooperation with Maryland Agricultural Experimentation Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:

i. Topsoi shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1?" in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4–8 tons/acre (200–400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

For sites having disturbed areas under 5 acres:

i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:

i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.

b. Organic content of topsoil shall be not less than 1.5 percent by weight.

c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto–toxic materials.

Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

V. Topsoil Application

i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" – 8" higher in elevation.

iii. Topsoil shall be uniformly distributed in a 4" – 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding – instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:

a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding. MD–VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

(signature) 5/13/98
NATURAL RESOURCES CONSERVATION — DATE

THESE PLANS FOR SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

(signature) 5/13/98
HOWARD SOIL CONSERVATION DISTRICT — DATE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS (signature)	DATE 4/9/98	CHIEF, BUREAU OF ENGINEERING (signature)	DATE 4/9/98
CHIEF, BUREAU OF HIGHWAYS (signature)	DATE 4-14-98	CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT (signature)	DATE 4/6/98

RIEMER MUEGGE & ASSOCIATES, INC.
ENGINEERING • ENVIRONMENTAL SERVICES • PLANNING • SURVEYING
8818 Centre Park Drive • Suite 200 • Columbia, MD 21045
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STATE OF MARYLAND — FRANK H. DONALDSON — NO. 8146 REGISTERED — PROFESSIONAL ENGINEER
FRANK DONALDSON #8146 (signature) 4/6/98

DES: D.A.S.
DRN: E.L.R.
CHK: G.C.L.
DATE:04/06/98

BY	NO.	REVISION	DATE

SEDIMENT AND EROSION CONTROL

600' SCALE MAP NO. BLOCK NO.

HILLCREST DRIVE
STORM DRAIN IMPROVEMENT
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
CONTRACT NO. D–1098

SCALE AS SHOWN

SHEET 3 OF 3

M:\PROJECT\97064\HILLCRES\SEDEROCO Mon Apr 6 13:55:51 1998 RIEMER MUEGGE AND ASSOCIATES, INC.