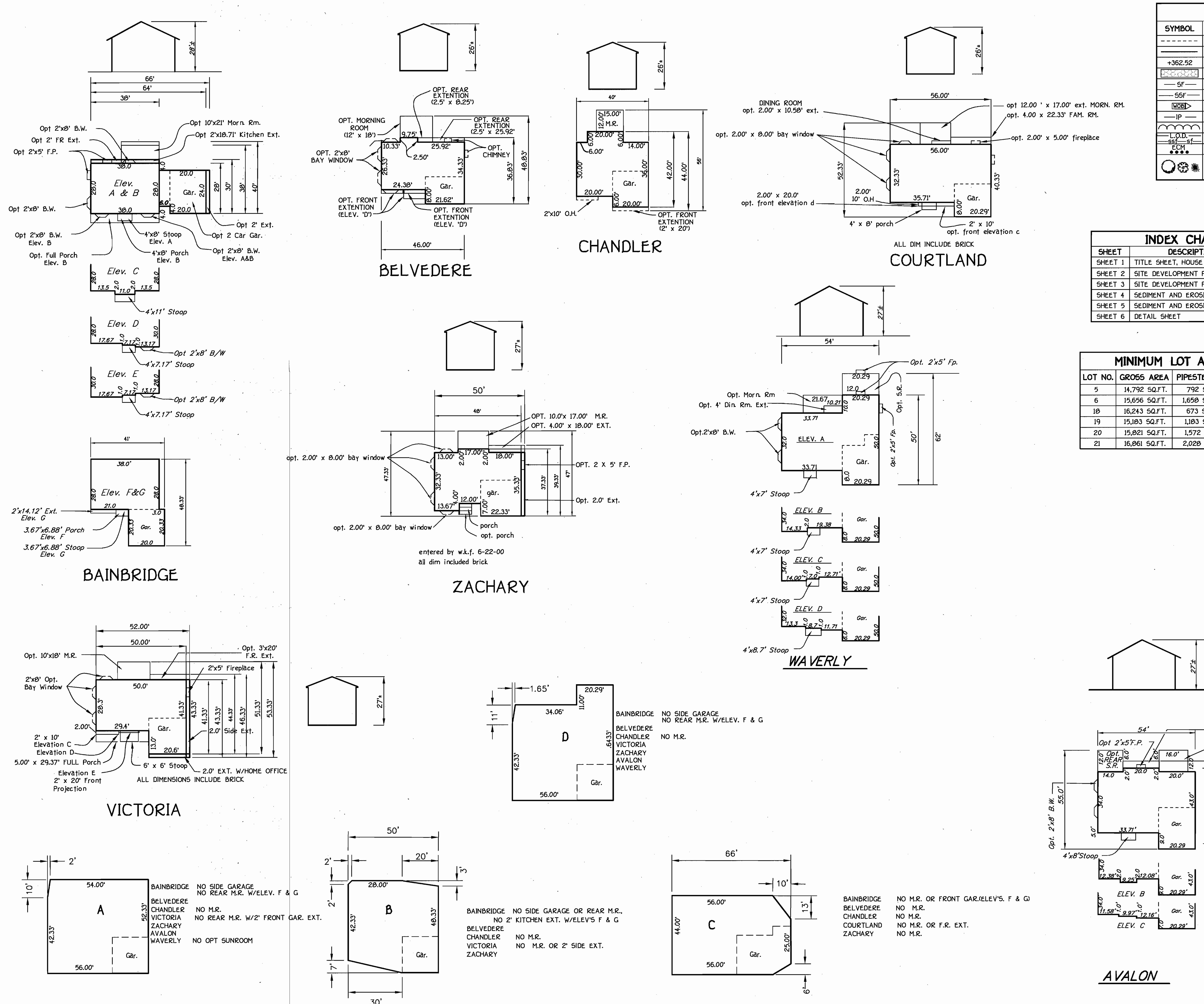


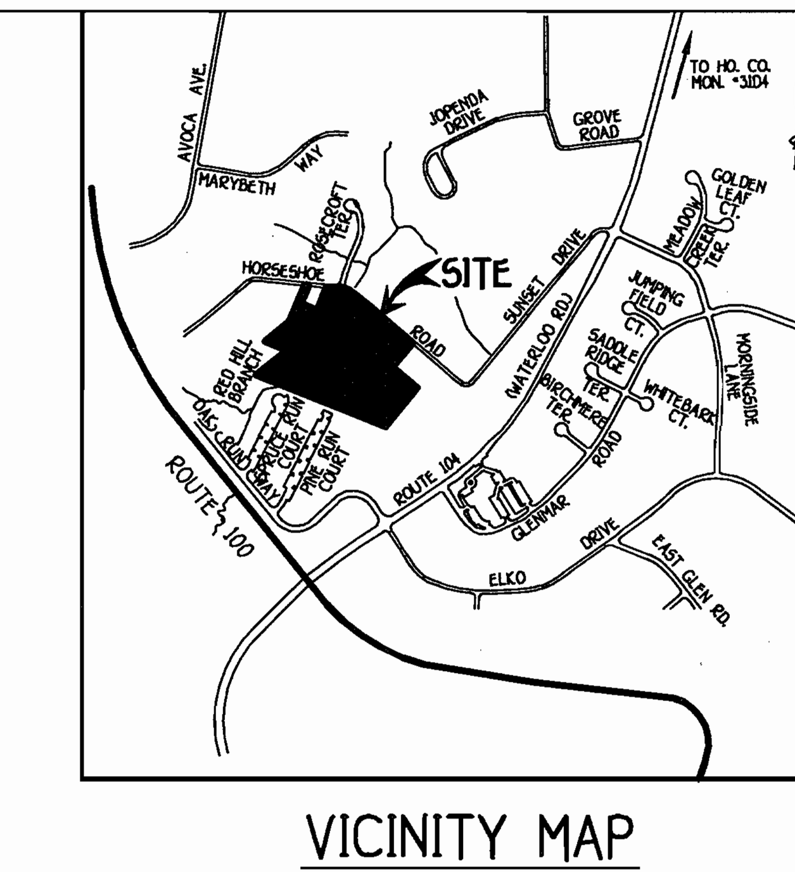
LEGEND

SYMBOL	DESCRIPTION
- - - - - - - -	EXISTING CONTOUR 2' INTERVAL
————	PROPOSED CONTOUR 2' INTERVAL
+362.52	SPOT ELEVATION
	FOREST CONSERVATION EASEMENT
— SF —	SILT FENCE
— SSF —	SUPER SILT FENCE
WOB	WALK OUT BASEMENT
— IP —	INLET PROTECTION
	EXISTING TREES TO BE SAVED
L.O.D. ssf sf	LIMIT OF DISTURBANCE
ECM	EROSION CONTROL MATTING
	PROPOSED STREET TREE, PERIMETER & SWM LANDSCAPING PER F-02-64

BENCH MARKS

MON. 41EA ELEV. 407.502
N. 544,825.805
E. 1,339,217.454
LOC. NEAR THE INTERSECTION
OF RTE. 29 & JOHNS HOPKINS RD.

MON. 31D4 ELEV. 495.181
N. 571,700.681
E. 1,369,606.396
LOC. AT THE INTERSECTION
OF ROUTE 103 & ROUTE 104



VICINITY MAP

SCALE: 1" = 2000'

INDEX CHART

SHEET	DESCRIPTION
SHEET 1	TITLE SHEET, HOUSE TYPES, TEMPLATES
SHEET 2	SITE DEVELOPMENT PLAN
SHEET 3	SITE DEVELOPMENT PLAN
SHEET 4	SEDIMENT AND EROSION CONTROL PLAN
SHEET 5	SEDIMENT AND EROSION CONTROL PLAN
SHEET 6	DETAIL SHEET

MINIMUM LOT AREA TABLE

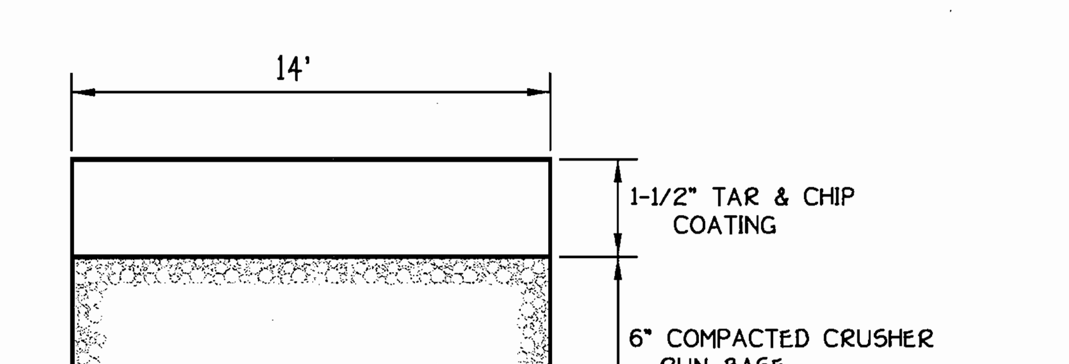
LOT NO.	GROSS AREA	PIPESTEM AREA	MINIMUM AREA
5	14,792 SQ.FT.	792 SQ.FT.	14,000 SQ.FT.
6	15,656 SQ.FT.	1,658 SQ.FT.	14,000 SQ.FT.
18	16,243 SQ.FT.	673 SQ.FT.	15,570 SQ.FT.
19	15,183 SQ.FT.	1,183 SQ.FT.	14,000 SQ.FT.
20	15,821 SQ.FT.	1,572 SQ.FT.	14,249 SQ.FT.
21	16,861 SQ.FT.	2,028 SQ.FT.	14,833 SQ.FT.

GENERAL NOTES

1. SUBJECT PROPERTY ZONED R-20 PER 10/18/93 COMPREHENSIVE REZONING PLAN.
2. TOTAL AREA OF SITE: 6.9879 ACRES
3. TOTAL NUMBER OF LOTS SUBMITTED: 21
4. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION INSPECTION DIVISION AT (410)313-1880 AT LEAST (5) FIVE WORKING DAYS PRIOR TO THE START OF WORK.
5. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
6. THIS PROJECT IS SUBJECT TO HOWARD COUNTY FILES: P-01-11, S-99-14, F-01-28, W&S CONT. •34-3924-D.
7. DEPARTMENT OF PLANNING AND ZONING REFERENCE FILE NUMBERS: F-81-65, F-01-168, SP-01-02, WP-01-18, F-02-64.
8. HORIZONTAL AND VERTICAL CONTROL DATUM IS BASED ON NAD 83, MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.
   HOWARD COUNTY MONUMENT 31R1 N 565,303.465 E 1,372,517.678
   HOWARD COUNTY MONUMENT 31D4 N 571,700.681 E 1,369,606.396
9. ANY DAMAGE TO THE COUNTY'S RIGHT-OF-WAY SHALL BE CORRECTED AT THE DEVCELOPER'S EXPENSE.
10. THIS PLAN IS FOR HOUSE SITING AND GRADING ONLY. IMPROVEMENTS SHOWN WITHIN THE RIGHTS-OF-WAY OF THIS S.D.P. ARE NOT USED FOR CONSTRUCTION. FOR CONSTRUCTION SEE APPROVED ROAD CONSTRUCTION PLANS F-02-64, AND/OR APPROVED WATER AND SEWER PLANS CONTRACT NO. 24-4013-D.
11. CONTRACTOR WILL CHECK SEWER HOUSE CONNECTION ELEVATION AT EASEMENT LINE PRIOR TO CONSTRUCTION.
12. STORMWATER MANAGEMENT CONTROL WILL BE PROVIDED BY THE METHOD OF EXTENDED DETENTION. STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY H.O.A. PER F-02-64.
13. IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND LANDSCAPE MANUAL STREET TREES AND PERIMETER LANDSCAPING WILL BE PROVIDED AS SHOWN ON THE APPROVED ROAD CONSTRUCTION PLANS FOR F-02-64. SURETY WILL BE POSTED WITH THE DEVELOPER'S AGREEMENT.
14. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1202 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBMISSION HAS BEEN FULFILLED BY ON-SITE RETENTION IN THE AMOUNT OF 0.99 ACRES OF CREDITED EASEMENT AND 0.63 ACRES OF NON-CREDITED (FLOODPLAIN) EASEMENT TO TOTAL 1.62 ACRES OF FOREST CONSERVATION EASEMENT (RETENTION), REFORESTATION IN THE AMOUNT OF 0.87 ACRES, AND OFF-SITE REFORESTATION (LISTON FARM, MAP 2, PARCEL17) IN THE AMOUNT OF 2.45 ACRES. FINANCIAL SURETY HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT FOR THE ON-SITE RETENTION (0.99 ACRES OR 43.124.4 SQ. FT.) IN THE AMOUNT OF$8,624.88, ON-SITE REFORESTATION (0.87 ACRES OR 37,897.2 SQ. FT.) IN THE AMOUNT OF $18,948.60, AND OFF- SITE REFORESTATION (2.45 ACRES OR 106,722 SQ.FT.) IN THE AMOUNT OF $53,361.00.
15. HOWARD COUNTY STANDARD DRIVEWAY DETAIL R-6.03 & R-6.05
16. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENT OCCUPANCY TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
   A) WIDTH - 12 FEET (14 FEET IF SERVING MORE THAN ONE RESIDENCE)
   B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING
   C) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 18% GRADE CHANGE AND MINIMUM 45 FOOT TURNING RADIUS
   D) STRUCTURES (CULVERTS/BRIDGES) - MUST SUPPORT 25 GROSS TON LOADING (H25 LOADING)
   E) DRAINAGE ELEMENTS - CAPABLE OF SAFETY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACES
   F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
   G) MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
17. FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY LINE ONLY.
18. FLOODPLAIN STUDY PREPARED BY MILDENBURG, BOENDER AND ASSOC., INC., IN MAY 2000,APPROVED UNDER SP- 01-02, ON FEB. 2, 2001.
19. WETLAND DELINEATION PREPARED BY WILDMAN ENVIRONMENTAL SERVICES INC. DATED APRIL 2000. APPROVED UNDER SP-01-02, FEB. 2, 2001.
20. EXISTING TOPOGRAPHY WAS TAKEN FROM APPROVED ROAD CONSTRUCTION PLANS PREPARED BY MILDENBERG, BOENDER & ASSOC., INC. (F-02-64).
21. NO CEMETERIES OR HISTORIC STRUCTURES EXIST ON-SITE.
22. IN ACCORDANCE WITH SECTION 128 (A)(1) OF THE HO.CO. ZONING REGULATION, BAY WINDOWS, CHIMNEY OR EXTERIOR STAIRWAYS NOT MORE THAN 16 FEET IN WIDTH MAY PROJECT NOT MORE THAN 4 FEET INTO ANY SETBACK, PORCHES OR DECKS, OPEN OR ENCLOSED MAY PROJECT NOT MORE THAN 10 FEET INTO THE FRONT OR REAR YARD SETBACKS.
23. THIS SITE DEVELOPMENT PLAN IS IN CONFORMANCE WITH THE FIFTH EDITION OF THE SUBMISSION AND LAND DEVELOPMENT REGULATIONS.THE DEVELOPER/BUILDER MUST APPLY FOR ALL BUILDING PERMITS FOR ALL CONSTRUCTION AUTHORIZED ON THIS PLAN WITHIN FIVE YEARS FROM THE DATE OF SIGNATURE APPROVAL.
24. THE HOA DOCUMENTS FOR THIS DEVELOPMENT HAVE BEEN RECORDED WITH THE MARYLAND DEPARTMENT OF ASSESSMENTS AND TAXATION AS **RECEIPT NO. D07060045 ON OCT. 29, 2002.**

ADDRESS CHART

LOT NUMBER	STREET ADDRESS	
1	5210	TIYANA COURT
2	5214	TIYANA COURT
3	5218	TIYANA COURT
4	5222	TIYANA COURT
5	5226	TIYANA COURT
6	5230	TIYANA COURT
7	5234	TIYANA COURT
8	5238	TIYANA COURT
9	5242	TIYANA COURT
10	5246	TIYANA COURT
11	5250	TIYANA COURT
12	5249	TIYANA COURT
13	5245	TIYANA COURT
14	5215	TIYANA COURT
15	5211	TIYANA COURT
16	5207	TIYANA COURT
17	5203	TIYANA COURT
4	8501	HORSESHOE ROAD
19	8507	HORSESHOE ROAD
20	8509	HORSESHOE ROAD
21	8511	HORSESHOE ROAD

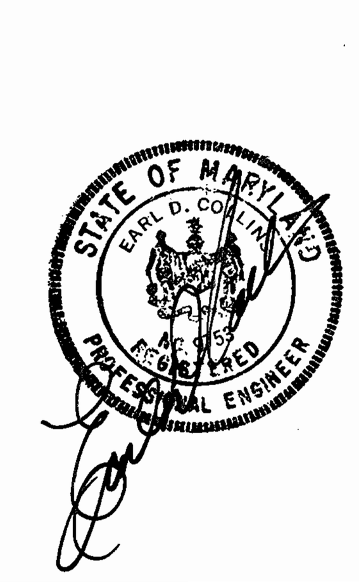


COMMON DRIVEWAY DETAIL

NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE



ENGINEER'S CERTIFICATE

"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."

Signature of Engineer — Date 12·20·02

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer JOHN LEWIS — Date 11·4·02

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT

Howard SCD — Date

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE •128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 1/6/03
Chief, Development Engineering Division — Date 1/2/03
Director - Department of Planning and Zoning — Date 1/8/03

PROJECT		SECTION		LOTS NO.	
RED HILL BRANCH OVERLOOK KOCH PROPERTY		N/A		1-17, 19-21 & 4	
PLAT	BLOCK NO.	ZONE	TAX MAP.	ELEC. DIST.	CENSUS TR.
15711 - 15714 14860	13	R-20	31	SECOND	6023.02
WATER CODE			SEWER CODE		
G-01			5750691		

SITE DEVELOPMENT PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 P/O PARCEL: 60
SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY, 2002

SDP-03-14

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE

STATE OF MARYLAND
EARL D. COLLINS
NO. 15... REGISTERED
PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Signature of Engineer EARL D. COLLINS — 11.6.02 Date

BUILDER/DEVELOPER'S CERTIFICATE

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Signature of Developer JOHN LEWIS — 11.4.02 Date

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE #128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 1/8/03 Date

Chief, Development Engineering Division — 1/2/03 Date

Director - Department of Planning and Zoning — 1/8/03 Date

SITE DEVELOPMENT PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002
SHEET 2 OF 6

SDP 03-14

K:\SDSKPROJ\61741 Red Hill Branch Overlook\dwg\61741 Sdp-sht 2 lots 1-6 18-21.dwg, 11/05/02 11:57:20 AM

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE

STATE OF MARYLAND — EARL D. COLLINS — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

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Signature of Developer JOHN LEWIS — 11-4-02 Date

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE #128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 1/6/03 Date

Chief, Development Engineering Division — 1/2/03 Date

Director - Department of Planning and Zoning — 1/8/03 Date

SITE DEVELOPMENT PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002
SHEET 3 OF 6

SDP 03-14

K:\SDSKPROJ\61741 Red Hill Branch Overlook\dwg\61741 Sdp-sht 3 lots 7-17.dwg, 11/05/02 10:10:05 AM

ROSECROFT TERRACE
HORSESHOE ROAD
50' PUBLIC R/W LOCAL ROAD
TIYANA COURT
40'R/W
(PUBLIC ACCESS PLACE)
4' SIDEWALK
LOT 1
14,000 SQ.FT.
MCE 453.28
LOT 2
14,003 SQ.FT.
MCE 453.70
LOT 3
14,002 SQ.FT.
MCE 454.47
LOT 4
14,000 SQ.FT.
MCE 456.72
LOT 5
14,792 SQ.FT.
MCE 457.09
LOT 6
15,656 SQ.FT.
MCE 458.63
LOT 19
15,115 SQ.FT.
MCE 456.15
LOT 20
15,021 SQ.FT.
MCE 456.07
LOT 21
15,861 SQ.FT.
MCE 459.27
EXISTING HOUSE TO REMAIN
FUTURE DRIVEWAY
PART OF OPEN SPACE LOT 22 (2.88 AC) (DEDICATED TO HOWARD COUNTY RECREATION AND PARKS)
FOREST CONSERVATION EASEMENT 'A' (RETENTION) 0.56 ACRES
PART OF OPEN SPACE LOT 22 FOREST CONSERVATION EASEMENT 'B' (RETENTION) 0.62 ACRES
PART OF OPEN SPACE LOT 22 FOREST CONSERVATION EASEMENT 'C' (REFORESTATION) 1.94 ACRES
PART OF OPEN SPACE LOT 22 FOREST CONSERVATION EASEMENT 'D' (RETENTION) 0.14 ACRES
PART OF OPEN SPACE LOT 22 FOREST CONSERVATION EASEMENT 'E' (RETENTION) 0.19 ACRES
PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE AND UTILITY EASEMENT PLAT NO. 15712
CENTERLINE OF STREAM (CLASS III)
EX. PUBLIC 20' SEWER AND UTILITY EASEMENT PLAT # 15712
OPEN SPACE LOT 23 (0.63 ACRES) (DEDICATED TO HOMEOWNERS ASSOCIATION)
PRIVATE STORMWATER MANAGEMENT EASEMENT Plat No. 15712
PUBLIC 10' TREE MAINTENANCE EASEMENT Plat No. 15712
RECREATIONAL OPEN SPACE LOT 24 (0.10 ACRES) DEDICATED TO H.O.A.
24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 5 AND 6 PLAT NO.
24' PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 18,19,20 & 21
EX. E.D. (A-2) CLEANWATER DIVERSION PER F-02-64 (TO BE UTILIZED)
EX. (B-2) PER F-02-64 (TO BE UTILIZED)
SECTION 2 TIMBER RUN VALLEY PLAT NO. 5394 ZONED: R-20
SECTION 1 TIMBER RUN VALLEY PLAT NO. 4432 ZONED: R-20
PARCEL 297 ERNEST & VIRGINIA BOCK 3983/576 ZONED: R-20
PARCEL 59 H.C. DEPT OF PUBLIC WORKS 2161/611
PARCEL 388 DAVID & ALBERTH PHUL 2606/155 ZONED: R-20
PARCEL 387 NORMAN & MARY ANDERSON 1087/340 ZONED: R-20
PLAT NO. 5974 ZONED: R-20
MATCH LINE SEE SHEET NO. 5 OF 6
BOLLARDS
75' STREAM BUFFER

FISHER, COLLINS & CARTER, INC.	CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE	ELLICOTT CITY, MARYLAND 21042 (410) 461-2855

NO.	REVISION	DATE

STATE OF MARYLAND — EARL D. COLLINS — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Signature of Engineer EARL D. COLLINS — Date 11.6.02

BUILDER/DEVELOPER'S CERTIFICATE

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Signature of Developer JOHN LEWIS — Date 11-4-02

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date 12/30/02

This development plan is approved for erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date 12/30/02

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE •128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 1/6/03

Chief, Development Engineering Division — Date 1/2/03

Director - Department of Planning and Zoning — Date 1/8/03

SEDIMENT AND EROSION CONTROL PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002

SDP 03-14

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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(410) 461 - 2855

NO.	REVISION	DATE

STATE OF MARYLAND
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SEDIMENT AND EROSION CONTROL PLAN

RED HILL BRANCH OVERLOOK
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AND
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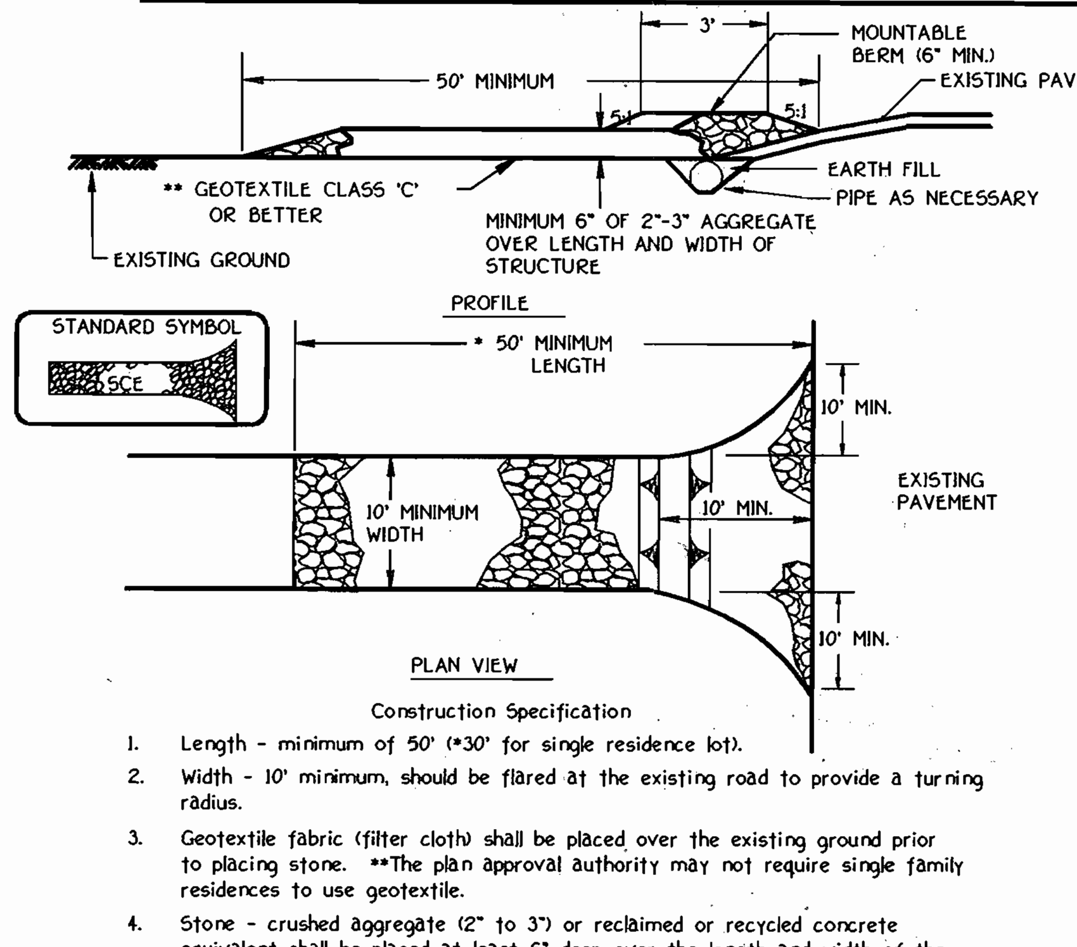
TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002

SDP 03-14

K:\SDSK\PROJ\61741 Red Hill Branch Overlook\dwg\61741 SAE-sht Slots 7-17.dwg, 11/05/02 10:07:52 AM

STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

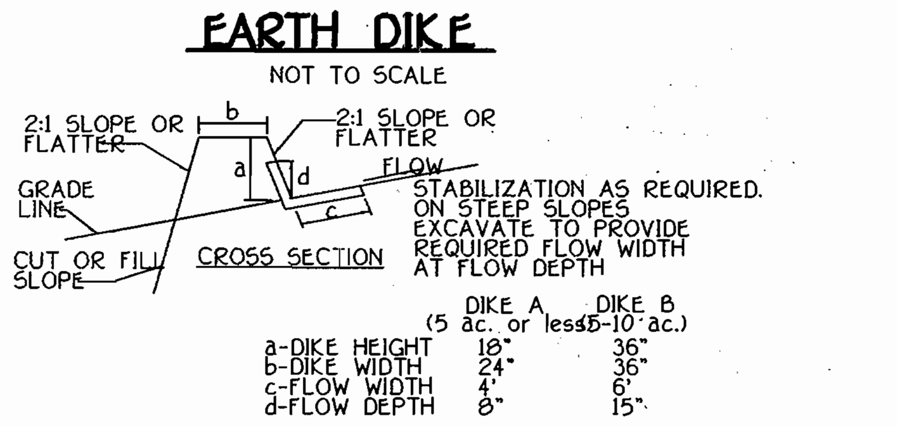
1. Length - minimum of 50' (*30' for single residence lot).
2. Width - 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single 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.

SEQUENCE OF CONSTRUCTION

1.	OBTAIN GRADING PERMIT.	7 DAYS
2.	INSTALL STABILIZED CONSTRUCTION ENTRANCE AS SHOWN ON PLAN.	1 DAY
3.	INSTALL TREE PROTECTION FENCE.	1 DAY
4.	CLEAR AND GRUB TO INSTALL SEDIMENT AND EROSION COTROL DEVICES.	3 DAYS
5.	OBTAIN APPROVAL FROM SEDIMENT AND EROSION INSPECTOR. CLEAR AND GRUB REMAINDER OF SITE.	7 DAYS
6.	GRADE SITE PER PLAN.	15 DAYS
7.	INSTALL TEMPORARY SEEDING AND STABILIZE.	3 DAYS
8.	CONTRACTOR IS TO MAINTAIN, INSPECT AND REPAIR ALL SEDIMENT AND EROSION CONTROL DEVICES DAILY AND AFTER ALL PERIODS OF RAINFALL.	
9.	CONSTRUCT HOUSE, SIDEWALKS AND DRIVEWAY.	90 DAYS
10.	FINE GRADE AND STABILIZE IN ACCORDANCE WITH STANDARDS AND SPEC'S.	3 DAYS
11.	UPON FINAL APPROVAL OF THE SEDIMENT AND EROSION INSPECTOR, REMOVE ALL SEDIMENT AND EROSION CONTROLS.	3 DAYS

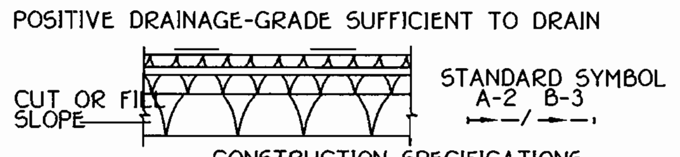
EARTH DIKE

NOT TO SCALE



	DIKE A (5 ac. or less)	DIKE B (5-10 ac.)
a-DIKE HEIGHT	18"	36"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	8"	15"

POSITIVE DRAINAGE-GRADE SUFFICIENT TO DRAIN



CONSTRUCTION SPECIFICATIONS

1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

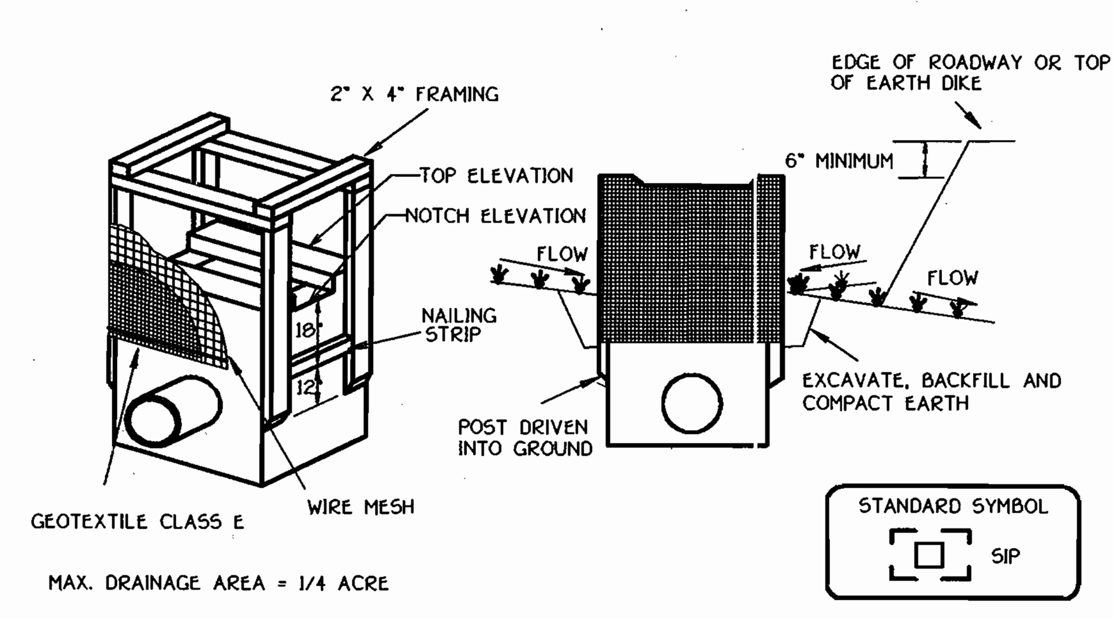
FLOW CHANNEL STABILIZATION

TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	.5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELSIOR; SOD; 2" STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD; 2" STONE	LINED RIP-RAP 4"-8"
4	8.1-20%	LINED RIP-RAP 4"-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.

7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

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.

PERMANENT SEEDING NOTES

ALL DISTURBED AREAS SHALL BE STABILIZED AS FOLLOWS:

SEEDBED PREPARATION:
LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING.

SOIL AMENDMENTS:
APPLY TWO TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1,000 SQ.FT.) AND 600 LBS. PER ACRE 0-20-20 FERTILIZER (14 LBS./1,000 SQ.FT.) BEFORE SEEDING HARROW OR DISC. INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 38-0-0 UREAFORM FERTILIZER (9 LBS./1,000 SQ.FT.) AND 500 LBS. PER ACRE (11.5 LBS./1,000 SQ.FT.) OF 10-20-20 FERTILIZER.

SEEDING:
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 100 LBS. PER ACRE (2.3 LBS./1,000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THROUGH JULY 31, SEED WITH 60 LBS/ACRE (1.4 LBS./1,000 SQ.FT.) KENTUCKY 31 TALL FESCUE AND 2 LBS. PER ACRE (0.05 LBS./1,000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROJECT SITE BY: OPTION (1) - TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING; OPTION (2) - USE SOD; OPTION (3) - SEED WITH 100 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH TWO TONS/ACRE WELL ANCHORED STRAW. ALL SLOPES SHOULD BE HYDROSEEDED.

MULCHING:
APPLY 1 TO 2 TONS PER ACRE (10 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING 200 GALLONS PER ACRE (5 GAL./1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES. ON SLOPES 8 FEET OR HIGHER USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

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

* FOR PUBLIC PONDS SUBSTITUTE CHEMUNG CROWNVETCH AT 15 LBS./ACRE AND KENTUCKY 31 TALL FESCUE AT 40 LBS/ACRE AS THE SEEDING REQUIRMENT. OPTIMUM SEEDING DATE FOR THIS MIXTURE IS MARCH 1 TO APRIL 30.

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.

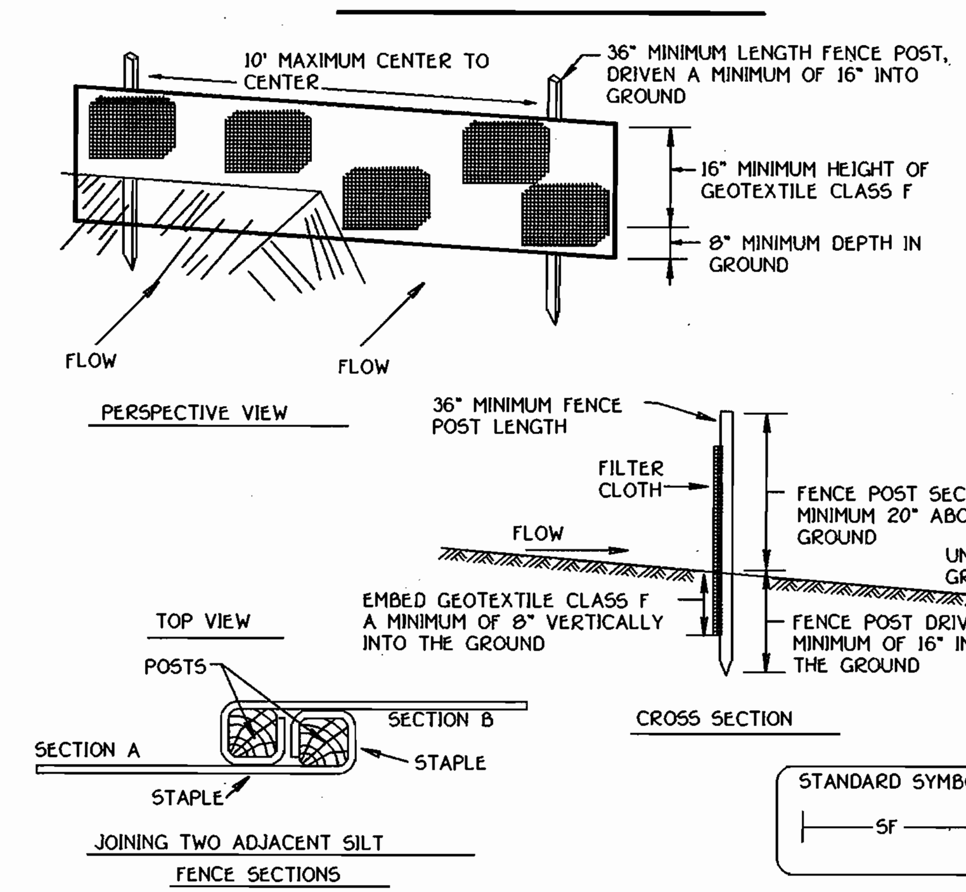
SOIL AMENDMENTS:
APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1,000 SQ.FT.)

SEEDING:
FOR THE PERIODS MARCH 1 THROUGH APRIL 30, AND AUGUST 15 THROUGH NOVEMBER 15, SEED WITH 1 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./ACRE OF WEEPING LOVEGRASS (.07 LBS./1,000 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 TO 2 TONS PER ACRE (70 TO 90 LBS./1,000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL.1,000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT ACRES ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL./1,000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1988 MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

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.

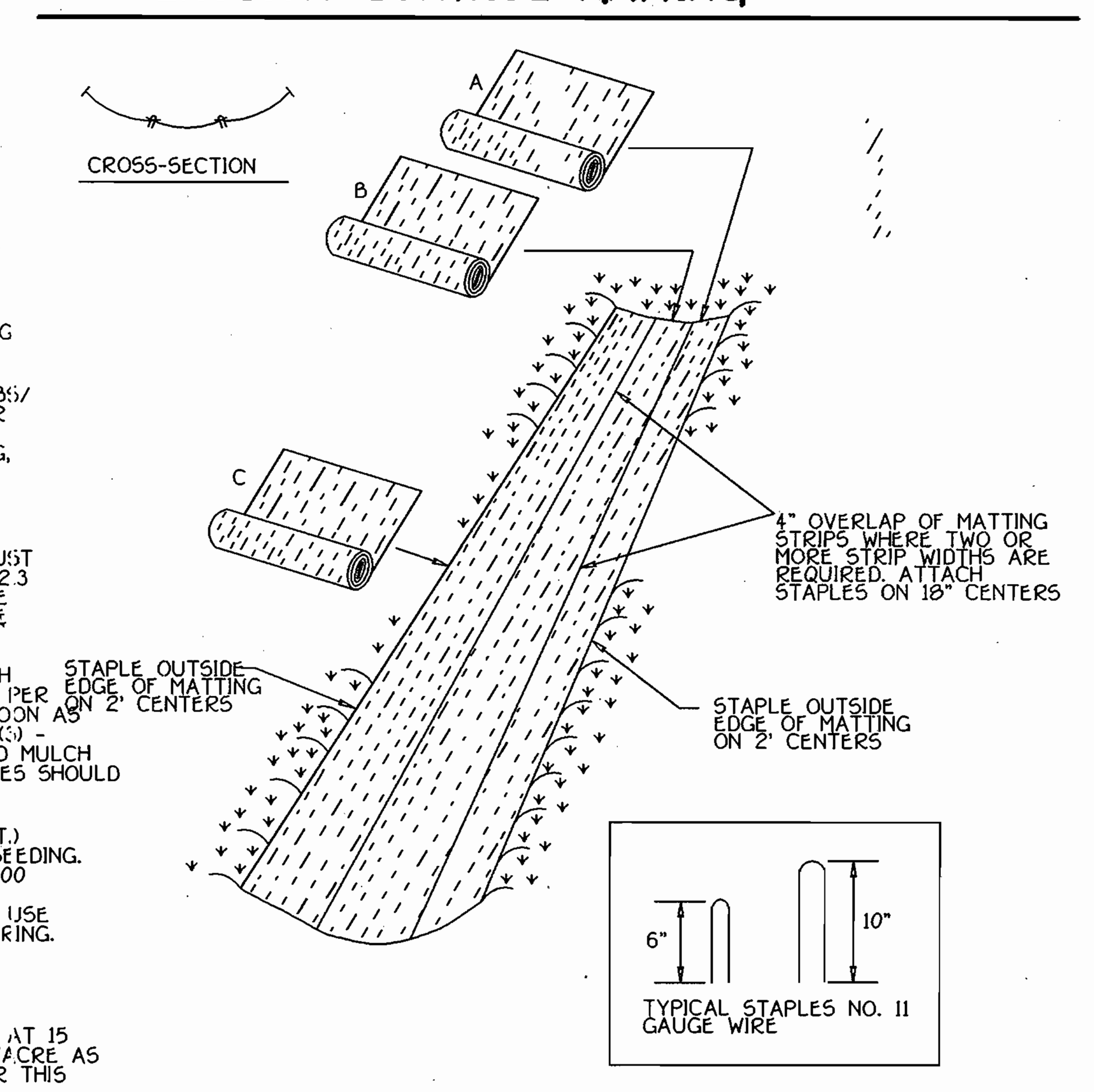
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

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

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.

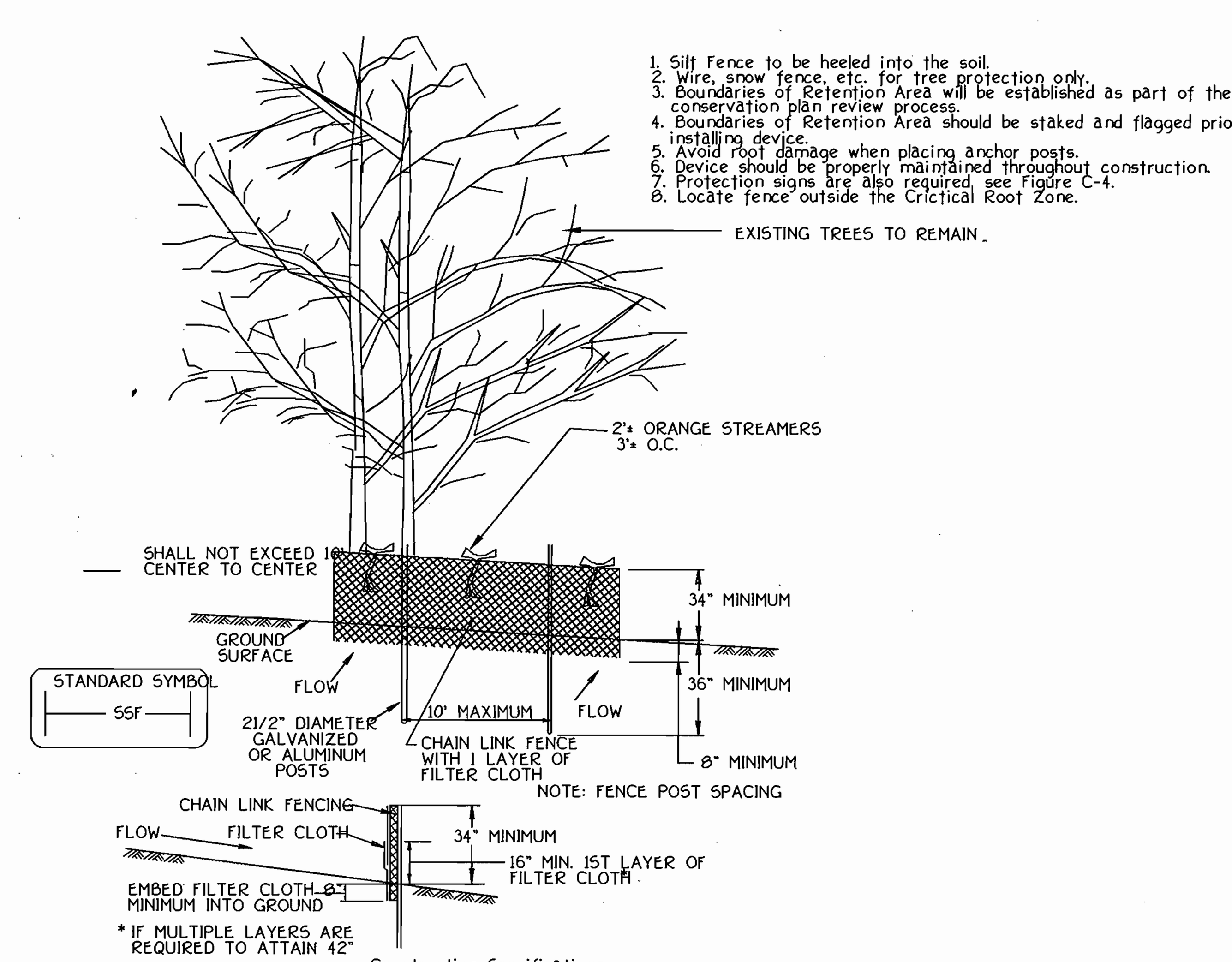
SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL DIVISION 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 MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES 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 THEIR 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
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	6.9879	ACRES
AREA DISTURBED	5.6859	ACRES
AREA TO BE ROOFED OR PAVED	1.3450	ACRES
AREA TO BE VEGETATIVELY STABILIZED	4.6409	ACRES
TOTAL CUT	3500	CU.YDS.
TOTAL FILL	3300	CU.YDS.

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) 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.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

1. Silt Fence to be heeled into the soil.
2. Wire, snow fence, etc. for tree protection only.
3. Boundaries of Retention Area will be established as part of the forest conservation plan review process.
4. Boundaries of Retention Area should be staked and flagged prior to installing device.
5. Avoid root damage when placing anchor posts.
6. Device should be properly maintained throughout construction.
7. Protection signs are also required, see Figure C-4.
8. Locate fence outside the Crictical Root Zone.



Construction Specifications

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 posts.
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:

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

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

SUPER SILT FENCE, TREE PROTECTION FENCE

NOT TO SCALE

STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration (Up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation
 i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.
 ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.
 iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.
B. Soil Amendments (Fertilizer and Lime Specifications)
 i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.
 iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.
 iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
C. Seedbed Preparation
 i. Temporary Seeding
  a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.
  b. Apply fertilizer and lime as prescribed on the plans.
  c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.
 ii. Permanent Seeding
  a. Minimum soil conditions required for permanent vegetative establishment:
   1. Soil pH shall be between 6.0 and 7.0.
   2. Soluble salts shall be less than 500 parts per million (ppm).
   3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
   4. Soil shall contain 1.5% minimum organic matter by weight.
   5. Soil must contain sufficient pore space to permit adequate root penetration.
   6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.
  b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.
  c. Apply soil amendments as per soil test or as included on the plans.
  d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications
 i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.
 Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.
 ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.
E. Methods of Seeding
 i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.
  a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.
  b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
  c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.
 ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
  a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.
  b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
 iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
  b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.
F. Mulch Specifications (In order of preference)
 i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 ii. Wood Cellulose Fiber Mulch (WCFM)
  a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
  b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
  c. WCFM, including dye, shall contain no germination or growth inhibiting factors.
  d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
  e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.
  f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm., diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.
 Note: Only sterile straw mulch should be used in areas where one species of grass is desired.
G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.
 i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
 ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.
 iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.
H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:
 i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.
 ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
 iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.
 iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE

STATE OF MARYLAND — EARL D. COLLINS — No. 9753 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Signature of Engineer EARL D. COLLINS — Date 11-6-02

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer JOHN LEWIS — Date 11-4-02

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date 12/30/02

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date 12/30/02

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE #128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 1/6/03

Chief, Development Engineering Division — Date 1/2/03

Director - Department of Planning and Zoning — Date 1/8/03

SEDIMENT/EROSION CONTROL NOTES & DETAILS

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 P/O PARCEL: 60
SECOND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: FEBRUARY, 2002
SHEET 6 OF 6

SDP 03-14

K:\SDSKPROJ\61741 Red Hill Branch Overlook\dwg\61741 Sec-Detail sht 6 .dwg, 11/05/02 10:38:56 AM

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE
5	ADDED DRYWELLS TO LOTS 2-6 & LOTS 19-21 AS DESIGNATED BY THE F-02-64 ROAD CONSTRUCTION PLANS, ADDED ACTUAL HOUSE MODELS SUPPLANTING THE GENERIC BOXES & WHERE NECESSARY, GRADING & SPOT ELEVATIONS HAVE BEEN ADJUSTED TO ACCOMODATE THESE CHANGES.	12/2/03
4	Rev. hse & grd. lot 1	11-06-03
3	Rev. hse. & grd. lot 19	10.16.03
2	REV. HSE. & GRD. LOT 6 FROM 'B' BOX TO WAVERLY	9/10/03
1	Rev. hse. & grd. lot 4	5-12-03

STATE OF MARYLAND — EARL D. COLLINS — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Signature of Engineer EARL D. COLLINS — Date 11.6.02

BUILDER/DEVELOPER'S CERTIFICATE

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Signature of Developer JOHN LEWIS — Date 11.4.02

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE #128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — Date 1/8/03

Chief, Development Engineering Division — Date 1/2/03

Director - Department of Planning and Zoning — Date 1/8/03

SITE DEVELOPMENT PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002
SHEET 2 OF 6

SDP 03-14

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE
6	Rev. grd. lot 1 to show Ex. Conditions	7-20-04
5	ADDED DRYWELLS TO LOTS 2-6 & LOTS 19-21 AS DESIGNATED BY THE F-02-64 ROAD CONSTRUCTION PLANS, ADDED ACTUAL HOUSE MODELS SUPPLANTING THE GENERIC BOXES & WHERE NECESSARY, GRADING & SPOT ELEVATIONS HAVE BEEN ADJUSTED TO ACCOMODATE THESE CHANGES.	12/2/03
4	Rev. hse & grd. lot 1	11-06-03
3	Rev. hse. & grd. lot 19	10.16.03
2	REV. HSE. & GRD. LOT 6 FROM 'B' BOX TO WAVERLY	9/10/03
1	Rev. hse. & grd. lot 4	5-12-03

STATE OF MARYLAND
EARL D. COLLINS
No. 8156
REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Signature of Engineer EARL D. COLLINS — 11.6.02 Date

BUILDER/DEVELOPER'S CERTIFICATE

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Signature of Developer JOHN LEWIS — 11.4.02 Date

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE #128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 1/8/03 Date

Chief, Development Engineering Division — 1/2/03 Date

Director - Department of Planning and Zoning — 1/8/03 Date

SITE DEVELOPMENT PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002
SHEET 2 OF 6

SDP 03-14

K:\SDSKPROJ\61741 Red Hill Branch Overlook\dwg\61741 Sdp-sht 2 lots 1-6 18-21.dwg, 11/05/02 11:57:20 AM

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE
6	Rev. grd. lot 1 to show Ex. Conditions	7-20-04
5	ADDED DRYWELLS TO LOTS 2-6 & LOTS 19-21 AS DESIGNATED BY THE F-02-64 ROAD CONSTRUCTION PLANS, ADDED ACTUAL HOUSE MODELS SUPPLANTING THE GENERIC BOXES & WHERE NECESSARY, GRADING & SPOT ELEVATIONS HAVE BEEN ADJUSTED TO ACCOMODATE THESE CHANGES.	12/2/03
4	Rev. hse & grd. lot 1	11-06-03
3	Rev. hse. & grd. lot 19	10.16.03
2	REV. HSE. & GRD. LOT 6 FROM 'B' BOX TO WAVERLY	9/10/03
1	Rev. hse. & grd. lot 4	5-12-03

STATE OF MARYLAND
EARL D. COLLINS
REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Signature of Engineer EARL D. COLLINS — 11.6.02 Date

BUILDER/DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan, for sediment and erosion control and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer JOHN LEWIS — 11.4.02 Date

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE #128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 1/8/03 Date

Chief, Development Engineering Division — 1/2/03 Date

Director - Department of Planning and Zoning — 1/8/03 Date

SITE DEVELOPMENT PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002

SHEET 2 OF 6

SDP 03-14

K:\SDSKPROJ\61741 Red Hill Branch Overlook\dwg\61741 Sdp-sht 2 lots 1-6 18-21.dwg, 11/05/02 11:57:20 AM

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

NO.	REVISION	DATE
7	Rev. grd. lot 4 Koch Prop. to show Ex. Conditions	3-4-05
6	Rev. grd. lot 1 to show Ex. Conditions	7-20-04
5	ADDED DRYWELLS TO LOTS 2-6 & LOTS 19-21 AS DESIGNATED BY THE F-02-64 ROAD CONSTRUCTION PLANS, ADDED ACTUAL HOUSE MODELS SUPPLANTING THE GENERIC BOXES & WHERE NECESSARY, GRADING & SPOT ELEVATIONS HAVE BEEN ADJUSTED TO ACCOMODATE THESE CHANGES.	12/2/03
4	Rev. hse & grd. lot 1	11-06-03
3	Rev. hse. & grd. lot 19	10.16-03
2	REV. HSE. & GRD. LOT 6 FROM 'B' BOX TO WAVERLY	9/10/03
1	Rev. hse. & grd. lot 4	5-12-03

STATE OF MARYLAND — EARL D. COLLINS — No. 11536 — REGISTERED PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATE

"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."

Signature of Engineer EARL D. COLLINS — 11.6.02 Date

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Signature of Developer JOHN LEWIS — 11.4.02 Date

Reviewed for HOWARD SCD and meets Technical Requirements.

U.S.D.A.-Natural Resources Conservation Service — Date

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Howard SCD — Date

BUILDER/OWNER/DEVELOPER

RYAN HOMES, INC.
11460 CRONRIDGE DRIVE
SUITE *128
OWINGS MILLS, MARYLAND 21117

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chief, Division of Land Development — 1/8/03 Date
Chief, Development Engineering Division — 1/2/03 Date
Director - Department of Planning and Zoning — 1/8/03 Date

SITE DEVELOPMENT PLAN

RED HILL BRANCH OVERLOOK
LOTS 1 THRU 17 & 19 THRU 21
AND
KOCH PROPERTY LOT 4

TAX MAP No: 31 PARCEL: 60
SIXTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
SCALE: 1" = 30' DATE: FEBRUARY, 2002
SHEET 2 OF 6

SDP 03-14