ROAD CONSTRUCTION PLANS
ILCHESTER OAKS
LOTS 1 THRU 22
AND
OPEN SPACES 23 THRU 26
& NON-BUILDABLE PARCEL "A"
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

GENERAL NOTES

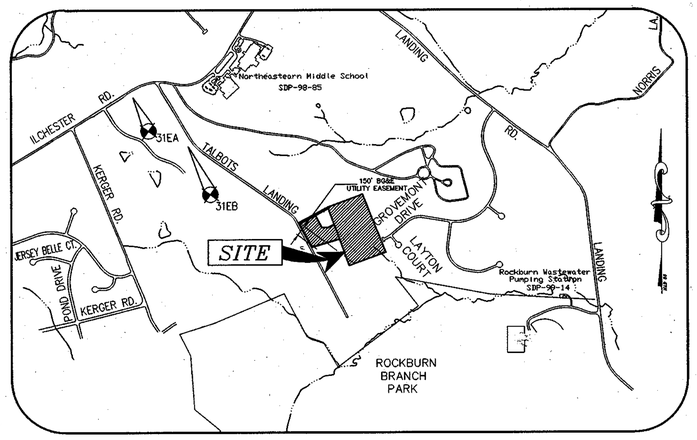
1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY THE FOLLOWNG UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:

MISS UTILITY	1-800-257-7777
C&P TELEPHONE COMPANY	(410) 725-9976
HOWARD COUNTY BUREAU OF UTILITIES	(410) 313-4900
AT&T CABLE LOCATION DIVISION	(410) 393-3533
BALTIMORE GAS & ELECTRIC	(410) 685-0123
STATE HIGHWAY ADMINISTRATION	(410) 531-5533
HOWARD COUNTY DEPT. OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIVISION	(410) 313-1880

4. PROJECT BACKGROUND:
   LOCATION: FIRST ELECTION DISTRICT - TAX MAP 31, GRID 16 - PARCEL 641 & P/O PARCEL 6993 & NON-BUILDABLE PARCEL A
   DEED REFERENCE : 996/245 AND 5889/315, 5091/702.
   ZONING: R-20
   TOTAL TRACT AREA: 13.80 ACRES ±
   AREA OF BG&E UTILITY EASEMENT: 1.08 ACRES ±
   NET AREA: 12.72 ACRES ±
   NUMBER OF PROPOSED LOTS: 26 (22 BUILDABLE & 4 OPEN SPACE)
   ACREAGE OF PROPOSED BUILDABLE LOTS : 3.57 ACRES ±
   NUMBER OF NON-BUILDABLE PARCLS: 1
   ACREAGE OF NON-BUILDABLE PARCEL : 0.21 ACRES ±
   OPEN SPACE REQUIRED : 5.09 ACRES ± (40% OF NET AREA)
   OPEN SPACE PROVIDED : 5.99 ACRES ±
   CREDITED OPEN SPACE : 5.23 ACRES ±
   RECREATIONAL OPEN SPACE REQUIRED (22 UNITS X 200 SQ. FT.) : 4,400 SQ. FT. (0.10 ACRES)
   RECREATIONAL OPEN SPACE PROVIDED : 5,192 SQ. FT. (0.11 ACRES)
   PROPOSED ROAD DEDICATION : 0.78 ACRES ±
   AREA OF STEEP SLOPES : N/A
   AREA OF 100 YEAR FLOODPLAIN : N/A
   DPZ REFERENCE # : SP-02-07, WP-03-63, WP-04-85, WP-04-142
5. TWO FOOT CONTOUR TOPOGRAPHY AND EXISTING CONDITIONS BASED ON FIELD RUN TOPOGRAPHIC SURVEY BY MILDENBERG, BOENDER & ASSOCIATES, INC. IN FEBRUARY 2002. BOUNDARY SHOWN HEREON BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT FEBRUARY 2002 BY MILDENBERG, BOENDER & ASSOCIATES, INC.
6. COORDINATES BASED ON NAD '83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 31EA & 31EB.

STA. No. 31EA	N 569,641.124 E 1,374,815.936	ELEV. 469.604
STA. No. 31EB	N 568,730.984 E 1,376,273.491	ELEV. 453.398

7. DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWNG MINIMUM REQUIREMENTS :
   A) WIDTH - 12 FEET (14 FEET 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 10% GRADE CHANGE AND MINIMUM OF 45-FOOT RADIUS.
   D) STRUCTURES (CULVERT/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
   E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
   F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
   G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
8. PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT. WATER AND SEWER ARE PUBLIC.
9. STORMWATER MANAGEMENT CONTROL WILL BE PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND DESIGN MANUAL. SWM WILL BE PRIVATE. SWM WILL INCLUDE F-1 SAND FILTER, AND EXTENDED DETENTION. SWM FACILITY IS PRIVATELY OWNED AND MAINTAINED.
10. GEOTECHNICAL REPORT PREPARED BY GEO-TECHNOLOGY ASSOCIATES, INC. ON JULY 11, 2000.
11. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
12. COMPACTION IN FILL AREAS TO BE 95% AS DETERMINED PER AASHTO T-180.
13. CONTRACTOR TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES ON SITE PRIOR TO COMMENCING CONSTRUCTION.
14. FOREST CONSERVATION EASEMENT(S) HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.200 OF HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING, OF CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING OR SITE DEVELOPMENT PLAN. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OR CONSERVATION EASEMENT ARE ALLOWED.
15. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION HAVE BEEN MET BY ON-SITE RETENTION OF 1.97 ACRES AND REFORESTATION OF 0.26 ACRES. FINANCIAL SURETY FOR THE 1.97 ACRES ($85,813.2 SQ. FT.) OF RETENTION IN THE AMOUNT OF $17,162.64 AND 0.26 ACRES (11,325.6 SQ. FT.) OF REFORESTATION IN THE AMOUNT OF $5,662.80 HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $22,825.44.
16. OPEN SPACE LOT 26 WILL BE DEDICATED TO HOWARD COUNTY AND OPEN SPACE LOTS 25, 27 & 28 WILL BE CONVEYED TO HOMEOWNERS ASSOCIATION.
17. TO THE BEST OF THE KNOWLEDGE OF THE CURRENT OWNER, NO GRAVES EXIST ON-SITE.
18. ALL STORM DRAIN PIPES TO BE HDPE PIPE UNLESS OTHERWISE NOTED.
19. THE PROPERTY IS RECORDED AS HO-390, TALBOT'S LAST SHIFT IN THE HOWARD COUNTY HISTORIC SITES INVENTORY. THE ORIGINAL INVENTORY FORM ON THE PROPERTY DATES THE STONE HOUSE TO THE 18TH CENTURY AND THE FRAME ADDITIONS TO THE LATE 19TH CENTURY. THE TWO STORY STONE HOUSE, STONE SPRING HOUSE, AND LOG SMOKEHOUSE ARE TO REMAIN. ALL OTHER STRUCTURES ARE TO BE REMOVED. THE STONE HOUSE AND LOG SMOKEHOUSE ARE LOCATED ON LOT 3.
20. WETLAND STUDY AND FOREST STAND DELINEATION IS BY ECO-SCIENCE PROFESSIONAL, INC. DATED APRIL 2002.
21. THIS PROJECT IS EXEMPT FROM APFO ROAD TEST REQUIREMENTS BASED ON THE FACT THAT NO AT GRADE INTERSECTIONS OF MAJOR - MAJOR COLLECTOR OR HIGHER CLASSIFICATION ROADS EXISTS WITHIN A MILE AND HALF OF THE SITE.
22. STREET LIGHTS WILL BE REQUIRED IN THIS DEVELOPMENT IN ACCORDANCE WITH THE DESIGN MANUAL STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SELECTED SHALL BE IN ACCORDANCE WITH THE LATEST HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." THE JUNE 1993 POLICY INCLUDES GUIDELINES FOR LATERAL AND LONGITUDINAL PLACEMENT. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
23. THE STREET LIGHT LOCATIONS AND TYPES OF LIGHTS SHOWN ON SHEETS 2 & 3 ARE AS FOLLOWS :
   - 150-WATT HPS VAPOR PREMIER POST TOP FIXTURE MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE USING A 12' ARM ANGLED RADIAL TO THE FILLET AT AMBROSIA DRIVE, STATION 0+58, 38.28' RIGHT.
   - 100-WATT HPS VAPOR "PREMIER" POST TOP FIXTURE ON A 14' BLACK FIBERGLASS POLE AT AMBROSIA DRIVE, STATION 3+23, 16.45' RIGHT, STATION 5+65, 15' LEFT, LP STATION 1+00, 6.57' LEFT.
   - LIGHT POLES AT STATIONS 5+65 AND L.P. 1+00 SHALL HAVE PRIVATE RANGE OF ADDRESS SIGNS.
   - STREET SIGN POSTS SHALL BE GALVANIZED SQUARE METAL TUBE POSTS (2" SQUARE-14 GAUGE) INSERTED INTO A 3-FOOT LONG GALVANIZED SQUARE METAL TUBE SLEEVE (2.5" SQUARE-12 GAUGE). THERE SHALL BE A METAL CAP ON TOP OF THE SIGN POST.
24. THIS PROJECT IS SUBJECT TO THE 5TH EDITION SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND TO THE COUNTY COUNCIL BILL 50-2001 ZONING REGULATIONS AMENDMENT.
25. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING (38 SHADE TREES, 22, SMALL DECIDUOUS/ ORNAMENTAL TREES, 20 EVERGREENS, 18 PRIVATE STREET TREES) HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $23,100.00.
26. THE PURPOSE OF NON-BUILDABLE PARCEL A IS FOR INGRESS/EGRESS FOR PARCELS 706, 708, 711, 709, 710, 699 AND LOT 10A.
27. THIS PROJECT IS A SUBJECT TO A WP-03-63 TO WAIVE SECTIONS: 16.120(b)(4)(iv), 16.120(c)(2)(ii), 16.121(e)(1) AND 16.121(e)(2). APPROVED ON JANUARY 14.2003 SUBJECT TO FOLLOWING CONDITIONS:
   1. PROVIDE A MINIMUM 20' ACCESS EASEMENT TO THE OPEN SPACE 26 WITHOUT OBLIGATION TO DEPARTMENT OF RECREATION AND PARKS TO SHARE IN DRIVEWAY MAINTENANCE.
   2. PROVIDE MINIMUM 24' SHARED ACCESS EASEMENT FOR LOTS 3-5, EXTENDED TO THE SOUTHERN BOUNDARY OF LOT 3.
   3. PROVIDE A PEDESTRIAN CROSSING BRIDGE ACROSS THE WETLANDS AND STREAM ON OPEN SPACE LOT 26, OVER THE PROPOSED WATER, SEWER AND UTILITY EASEMENT.
28. ARTICLES OF INCORPORATION FOR "ILCHESTER OAKS HOMEOWNERS ASSOCIATION, INC" IDENTIFICATION # D10013811. THIS PROPERTY WAS FORMERLY REFERRED TO AS "DOBSON PROPERTY."
29. APPLICATION WAS APPROVED ON MAY 5, 2004, BY THE MDE NON-TIDAL WETLANDS & WATERWAYS DIVISION FOR THE DRIVEWAY CROSSING OF THE WETLANDS, STREAM, AND THEIR BUFFERS FOR THE INSTALLATION OF A WATER & SEWER MAIN UNDER TRACKING # 03-NT-0509/200460595.
30. A WAIVER PETITION WAS FILED ON DECEMBER 18, 2003 REQUESTING TO WAIVE SECTION 16.120(b)(4)(iii)(b) TO ALLOW WETLANDS AND WETLAND BUFFER ON A RESIDENTIAL LOT LESS THAN 10 ACRES IN SIZE IF THE BUILDING ENVELOPE IS NO CLOSER THAN 35 FEET FROM THE ENVIRONMENTAL FEATURES. THE WAIVER, WP-04-85, WAS APPROVED ON FEBRUARY 5, 2004 SUBJECT TO THE FOLLOWING CONDITIONS:
   ON F-03-36 AND THE SUBSEQUENT SITE DEVELOPMENT PLANS, PROVIDE THE FOLLOWING:
   1. PROVIDE THE LOT CONFIGURATION AND NUMBER OF LOTS AS SHOWN ON THE AMENDED EXHIBIT FOR wp-04-85 SUBMITTED TO THE COUNTY ON JANUARY 21,2004.
   2. SHOW THE 35 FOOT ENVIRONMENTAL SETBACK FROM THE WETLAND BUFFER ON LOT 4.
   3. PROVIDE DOCUMENTATION FROM SCD CONCERNING THE RELOCATION OF THE SEWER EASEMENT ON OPEN SPACE LOT 25 TO THE ADJACENT SITE.
31. A WAIVER PETITION WAS FILED ON MAY 19, 2004 REQUESTING TO WAIVE SECTION 16.123(a)(2) TO ALLOW ISSUANCE OF A GRADING PERMIT FOR MASS GRADING FOR INFRASTRUCTURE IMPROVEMENTS PRIOR TO SIGNATURE APPROVAL OF CONSTRUCTION DRAWINGS; AND SECTION 16.147(e) TO ALLOW ISSUANCE OF A GRADING PERMIT PRIOR TO SIGNATURE APPROVAL OF THE ROAD CONSTRUCTION DRAWINGS AND EXECUTION OF A DEVELOPER'S AGREEMENT COVERING FINANCIAL OBLIGATIONS WITH APPROPRIATE SECURITY GUARANTEES. THE WAIVER, WP-04-142, WAS APPROVED ON JUNE 16, 2004 SUBJECT TO THE FOLLOWING CONDITIONS:
   1. PROVIDE A GRADING PLAN WITH ALL UTILITIES, PAVEMENT AND STRUCTURES REMOVED TO HOWARD SOIL CONSERVATION DISTRICT.
   2. PRIOR TO COMMENCEMENT OF ANY ACTIVITY ON THE SITE, OBTAIN A GRADING PERMIT TO MASS GRADE THE SITE IN ACCORDANCE WITH THE GRADING SHOWN ON THE WAIVER PETITION EXHIBIT (SHOWING A LIMIT OF DISTURBANCE GENERALLY ALONG THE SITE BOUNDARY AND TO PROTECT THE ENVIRONMENTAL FEATURES ON OPEN SPACE LOT 26).
   3. INSTALL, INSPECT AND MAINTAIN ALL SEDIMENT AND EROSION CONTROLS IN COMPLIANCE WITH THE SOIL CONSERVATION DISTRICT REQUIREMENTS.
   4. COORDINATE THE SITE INSPECTIONS WITH THE CID OF THE DPW. HAVE A QUALIFIED PRIVATE CONSTRUCTION INSPECTOR ON SITE AT ALL TIMES DURING GRADING AND CONSTRUCTION OF ALL INFRASTRUCTURE IMPROVEMENTS.
   5. OBTAIN SIGNED ROAD CONSTRUCTION DRAWINGS AND SIGNED WATER AN SEWER DRAWINGS AND DEVELOPER'S AGREEMENTS AS SOON AS POSSIBLE AND PRIOR TO SUBMISSION OF THE PLAT ORIGINALS.



VICINITY MAP
SCALE: 1"=1000'

SHEET INDEX

DEVELOPER
ELLICOTT CITY LAND HOLDING, INC.
C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480-9105

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."

SIGNATURE OF DEVELOPER — DATE 6/21/04
DONALD REUWER
PRINTED NAME OF DEVELOPER

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."

SIGNATURE OF ENGINEER — DATE 6/21/04
JOHN B. MILDENBERG
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE — DATE 7/6/04

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/6/04

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 7-27-04

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/04

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/20/04

project date JUNE 2004
2002-007 engineering HSP approval JBM
illustration HSP scale NTS

no. description revisions date

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699 HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT COVER SHEET

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

1 OF 15

F-04-36

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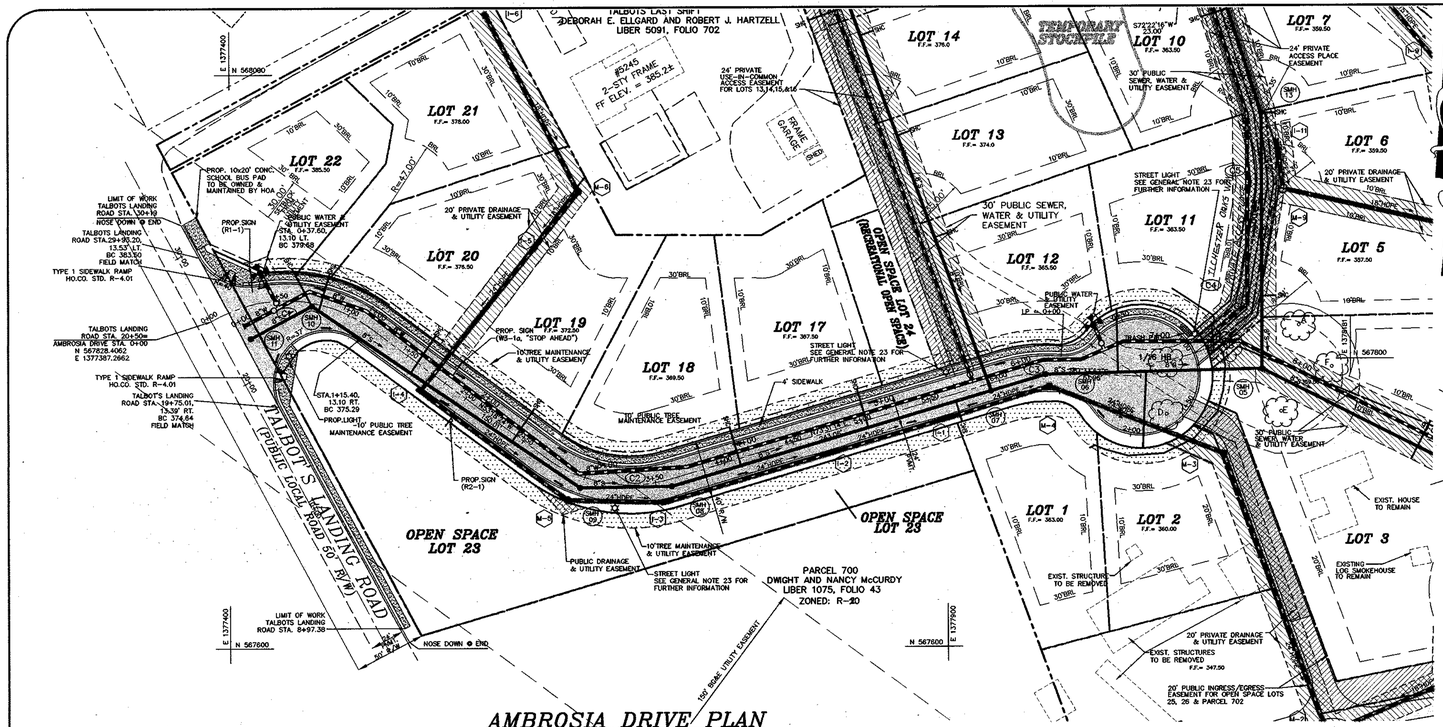
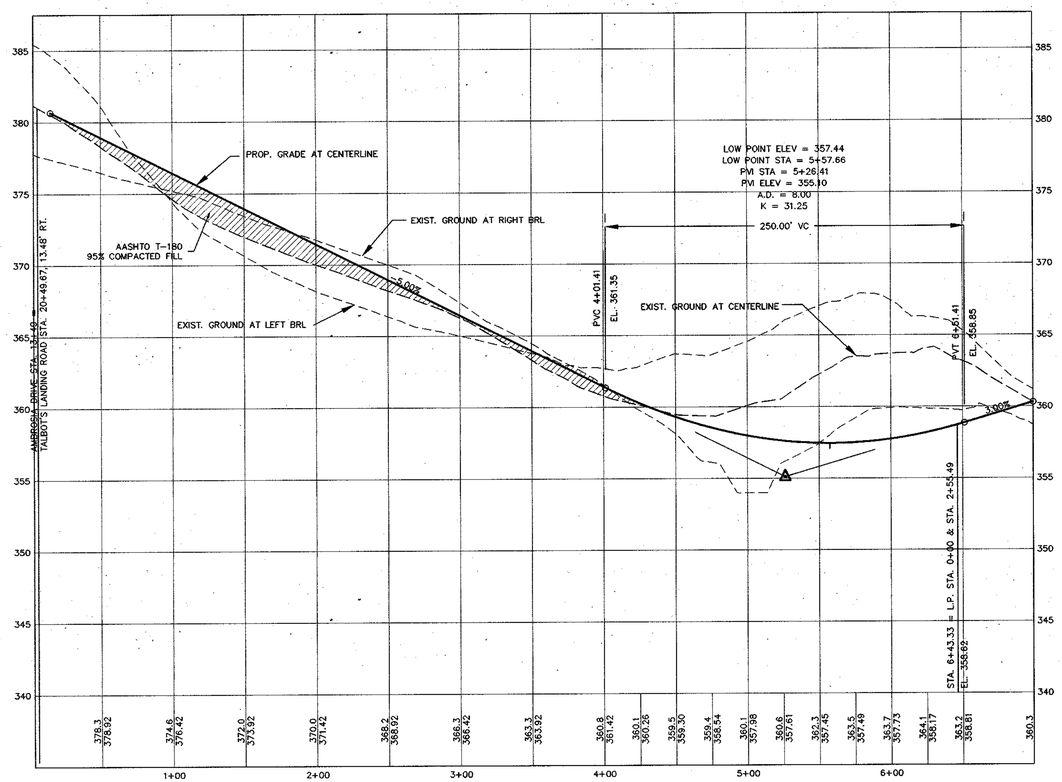


AMBROSIA DRIVE PLAN

SCALE: 1"=50'



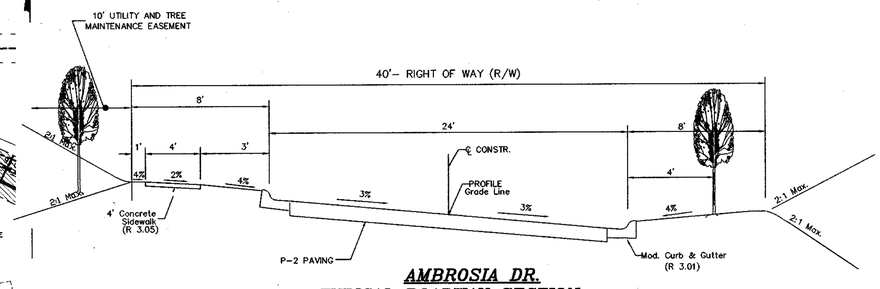
AMBROSIA DRIVE PROFILE

SCALE: HOR. 1"=50'
VER. 1"=5'

NOTE: SEE GRADING PLAN FOR CONTINUATION OF THE STORM DRAIN.

CURVE TABLE

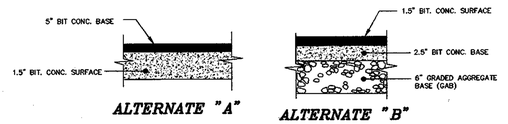
CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD
C1	100.00'	113.12'	63.47'	64°48'38"	N85°42'43"W 107.18'
C2	100.00'	92.80'	50.05'	53°10'22"	S79°53'35"E 89.51'
C3	100.00'	33.01'	16.66'	18°54'49"	S82°58'39"W 32.86'



AMBROSIA DR. TYPICAL ROADWAY SECTION

CLASSIFICATION: ACCESS STREET
DESIGN SPEED: 25 MPH
STA.0+00 TO STA. 6+39.73

SECTION NOT TO SCALE

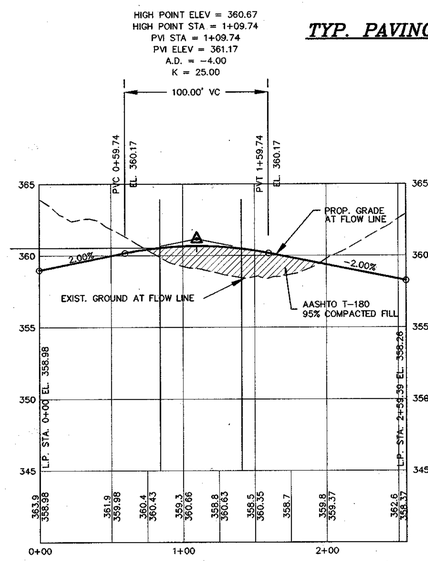


PAVING SECTION P-2

N.T.S.

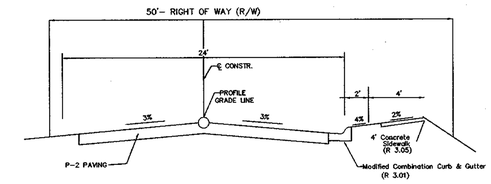
TYP. PAVING SECTION FOR AMBROSIA DR.

NOTE:
EXISTING PAVEMENT ON TALBOT'S LANDING ROAD IS TO BE SAW CUT AS REQUIRED FOR CONSTRUCTION OF CURB & GUTTER. NEW PAVEMENT OF TALBOT'S LANDING ROAD SHALL CONFORM TO HOWARD COUNTY STD.P-2 PAVING SECTION IF REQUIRED.



AMBROSIA DRIVE LINEAR PROFILE

SCALE: HOR. 1"=50'
VER. 1"=5'



TYPICAL ROADWAY SECTION TALBOT'S LANDING ROAD

SECTION NOT TO SCALE

DEVELOPER

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C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480-9105

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 7-27-04

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/30/04

project 2002-007 | date JUNE 2004
illustration HSP | engineering HSP | approval JBM
scale NTS

date | description | no.
revisions

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
AMBROSIA DRIVE ROAD PLAN AND PROFILE

MILDENBERG, BOENDER & ASSOC., INC.
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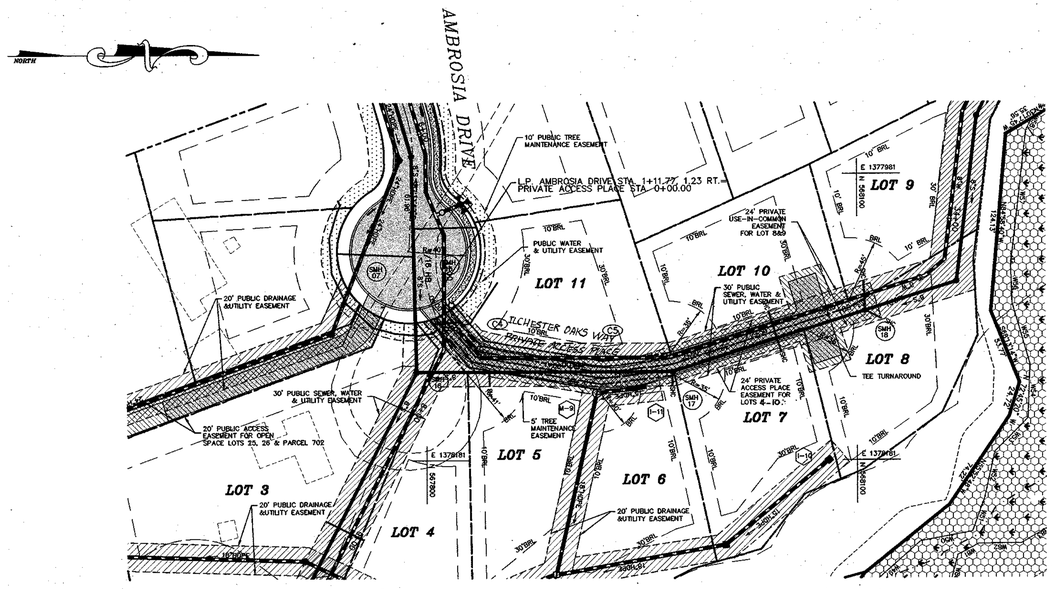
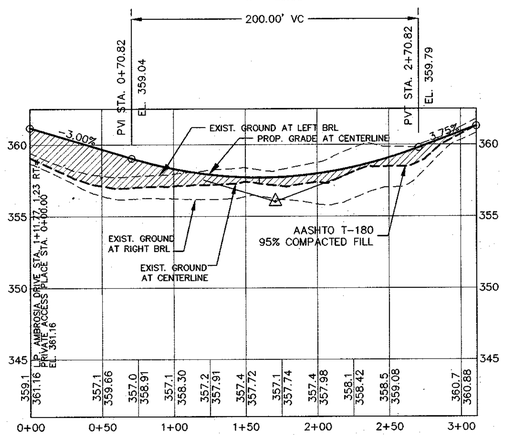
NOTE: SEE GRADING PLAN FOR CONTINUATION OF THE STORM DRAIN.



ILCHESTER OAKS WAY PLAN

SCALE: 1"=50'

LOW POINT ELEV = 357.70
LOW POINT STA = 1+59.71
PVI STA = 1+70.82
PVI ELEV = 356.04
A.D. = 6.75
K = 29.63

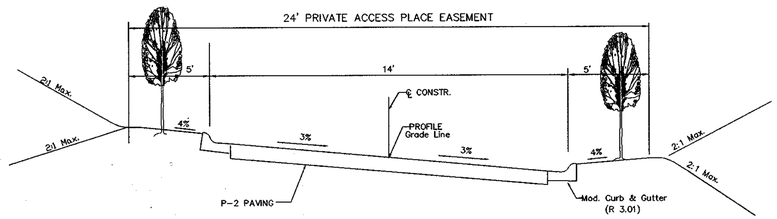


PRIVATE ACCESS PLACE PROFILE

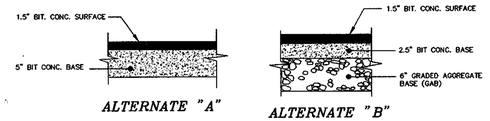
SCALE: HOR. 1"=50'
VER. 1"=5'

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD
C4	50.00'	34.98'	18.24'	40°04'47"	N29°59'12"W 34.27'
C5	100.00'	48.13'	24.54'	27°34'32"	N03°50'27"E 47.67'



TYPICAL ROADWAY SECTION
CLASSIFICATION: PRIVATE ACCESS PLACE
DESIGN SPEED: 25 MPH
STA.0+00 TO STA. 3+10.92
SECTION NOT TO SCALE



ALTERNATE "A" ALTERNATE "B"

PAVING SECTION P-2

TYP. ROADWAY PAVING SECTION
N.T.S.

BASED ON SHA STD.NO. MD 104.31-02

TEMPORARY TRAFFIC CONTROL PLAN

DEVELOPER
ELLICOTT CITY LAND HOLDING, INC.
C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480-9105

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 7-27-04

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/6/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/30/04

project 2002-007 | date JUNE 2004
illustration HSP | engineering HSP
scale AS SHOWN | approval JBM

no.	description / revisions	date

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
ILCHESTER OAKS WAY PLAN AND PROFILE

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(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

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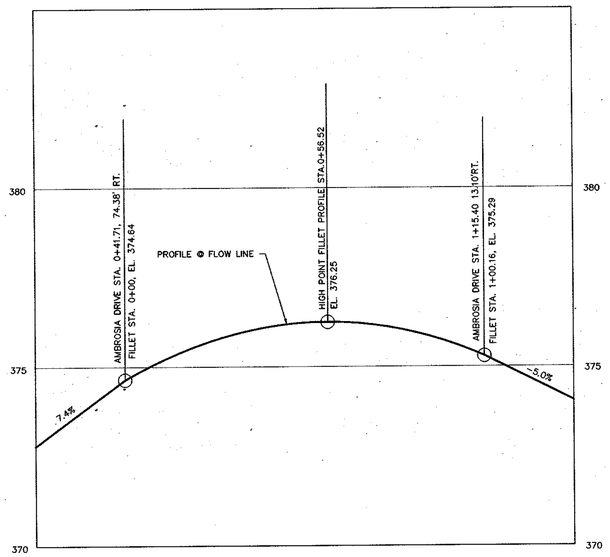
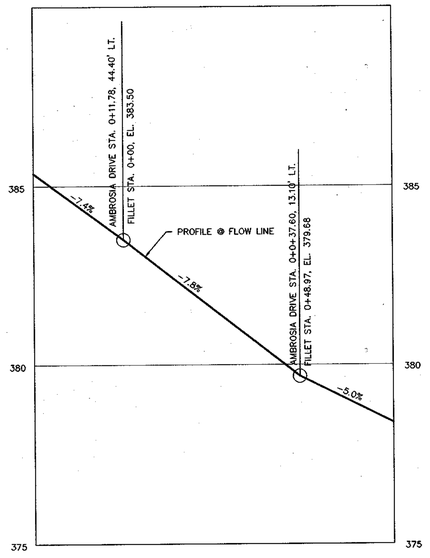


TALBOT'S LANDING ROAD RIGHT TURN TO AMBROSIA DRIVE

SCALE: HOR. 1" = 20', VER 1" = 2'



TALBOT'S LANDING ROAD LEFT TURN TO AMBROSIA DRIVE

SCALE: HOR. 1" = 20', VER 1" = 2'

DEVELOPER

ELLICOTT CITY LAND HOLDING, INC.
C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480-9105

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 7-27-04

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/6/04

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/26/04

project 2002-007 | date JUNE 2004
illustration HSP | engineering HSP
scale AS SHOWN | approval JBM

no.	description / revisions	date

ILCHESTER OAKS

LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699 HOWARD COUNTY, MARYLAND
FIRST ELECTION DISTRICT

FILLET PROFILES

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

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NOTE: SEE SHEET 10 OF 15 FOR TEMPORARY STORMWATER MANAGEMENT GRADING.

DEVELOPER
ELLICOTT CITY LAND HOLDING, INC.
C/O DONALD REUWER
8000 MAIN STREET
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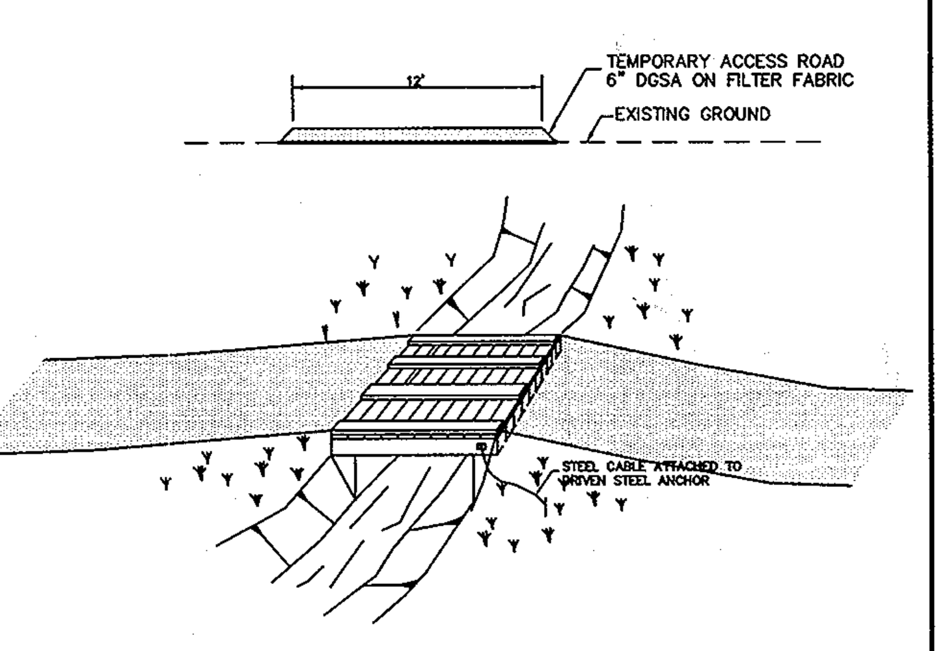

MATERIAL SPECIFICATIONS

- STRINGERS: STRINGERS SHOULD EITHER BE LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
- DECK MATERIALS: DECK MATERIALS SHOULD BE OF SUFFICIENT STRENGTH TO TO SUPPORT THE ANTICIPATED LOAD.

CONSTRUCTION SEQUENCE

THE PROPOSED CONSTRUCTION, MAINTENANCE AND REMOVAL SEQUENCE IS AS FOLLOWS:

1. ABUTMENTS SHOULD BE PLACED PARALLEL TO, AND ON, STABLE BANKS SUCH THAT THE STRUCTURE IS AT OR ABOVE BANKFULL DEPTH TO PREVENT THE ENTRAPMENT OF FLOATING MATERIALS AND DEBRIS.
2. THE PEDESTRIAN BRIDGE SHOULD BE CONSTRUCTED TO SPAN THE ENTIRE CHANNEL. IF THE BANKFULL CHANNEL WIDTH EXCEEDS 8 FEET (2.5 METERS) THEN A FOOTING, PIER, OR OTHER BRIDGE SUPPORT MAY BE CONSTRUCTED WITHIN THE WATERWAY. NO SUPPORT WILL BE PERMITTED WITHIN THE CHANNEL FOR WATERWAYS LESS THAN 8 FEET WIDE. ONE ADDITIONAL BRIDGE SUPPORT WILL BE BE PERMITTED FOR EACH ADDITIONAL 8 FOOT WIDTH OF THE CHANNEL.
3. ALL DECKING MEMBERS SHOULD BE PLACED PERPENDICULARLY TO THE STRINGERS, BUTTED TIGHTLY, AND SECURELY FASTENED TO THE STRINGERS. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE GRIDGE FROM FALLING INTO THE WATERWAY.
4. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS. ONE RUN PLANK SHOULD BE PROVIDED FOR EACH TRACK OF THE EQUIPMENT WHELLS AND SHOULD BE SECURELY FASTENED TO THE LENGTH OF THE SPAN.
5. ALL AREAS DISTURBED DURING INSTALLATION SHOULD BE STABILIZED WITHIN 14 CALENDAR DAYS IN ACCORDANCE WITH A REVEGETATION PLAN APPROVED BY THE WMA.
6. PERIODIC INSPECTION SHOULD BE PERFORMED BY THE USER TO ENSURE THAT THE BRIDGE, STREAMBED, AND STREAM BANKS ARE MAINTAINED AND NOT DAMAGED
7. MAINTENANCE SHOULD BE PERFORMED AS NEEDED TO ENSURE THAT THE STRUCTURE COMPLIES WITH ALL STANDARDS AND SPECIFICIATIONS. THIS SHOULD INCLUDE THE REMOVAL OF TRAPPED SEDIMENT AND DEBRIS WHICH SHOULD THEN BE DISPOSED OF AND STABILIZED OUTSIDE THE FLOODPLAIN.

PEDESTRIAN BRIDGE DETAILS

LEGEND

Symbol	Description
SCE	DENOTES STABILIZED CONSTRUCTION ENTRANCE
—SF—	DENOTES SILT FENCE
—SSF—	DENOTES SUPER SILT FENCE
—→	DENOTES A-1 DIVERSION DYKE
········	DENOTES LIMIT OF DISTURBANCE
	WETLANDS
	100 YEAR FLOODPLAIN
	INFLOW PROTECTION
A-2	TEMPORARY SWALE
	GABION BANK PROTECTION

NOTE:
SEE SHEET 10 OF 14 FOR TEMPORARY SEDIMENT BASIN PLAN & DETAILS

PURPOSE NOTE:
SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL

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."

SIGNATURE OF DEVELOPER — DATE 10/27/08
DONALD R REUWER JR
PRINTED NAME OF DEVELOPER

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."

SIGNATURE OF ENGINEER — DATE 10/27/08
J. JACOB HIKMAT
PRINTED NAME OF ENGINEER

STATE OF MARYLAND — J. JACOB HIKMAT — No. 17942 — PROFESSIONAL ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA-NATURAL RESOURCE CONSERVATION SERVICE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 11/13/08

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 11-18-08

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/24/08

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/08

project	date
2002-007	JUNE 2004
illustration	engineering
HSP	HSP
scale	approval
1"=50'	JBM

no.	description	date
2	SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL	10/27/08
1	ADD TEMPORARY STOCKPILE AREA, EXTEND LOD, ADD SSF SURROUNDING STOCKPILE AREA	1/14/05
	revisions	

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
REVISED FINAL GRADING AND EROSION & SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

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HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

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

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING , DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:
1) PREFERRED – APPLY 2 TONS PER ACRES DOLOMITIC LIMESTONE (92 LBS/1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING , APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS./1000 SQ.FT.).
2) ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING – FOR THE PERIODS MARCH 1 THRU APRIL 30, AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS/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 LOBS. PER ACRE (.05 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY: OPTION (1) – 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) – USE SOD. OPTION (3) – SEED WITH 60 LBS./ACRE KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONE/ACRE WELL ANCHORED STRAW.

MULCHING – APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE – INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

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

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, FOR NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.)

SEEDING: FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (.07 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU NOVEMBER 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./1000 SQ.FT.) OF UNROTTED WEED FREE SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL PER ACRE (5 GAL/1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GAL PER ACRE (8 GAL/1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

STANDARD SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF NAY 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 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 GREATER 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 1991 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:	13.80	ACRES
AREA DISTURBED:	9.78	ACRES
AREA TO BE ROOFED OR PAVED:	4.35	ACRES
AREA TO BE VEGITATIVELY STABILIZED:	5.43	ACRES
TOTAL CUT:	25,000	CU. YDS.
TOTAL FILL:	25,000	CU. YDS.
TOTAL WASTE/BORROW AREA LOCATION:	N/A	

THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY.
CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITIES MEASUREMENTS.

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 CONTROL 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 LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

STANDARD 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 SPECIFICATION. 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 EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS – SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
i. TOPSOIL 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 1/2" IN DIAMETER.
ii. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSON-SON GRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
iii. WHERE THE 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.

III. 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.

IV. 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 TOPSOILS SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PERSCRIBED 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 OR 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 APPLLICATION
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" TO 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 SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO 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 LEASE 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHOURUS, 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.
iv. 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.

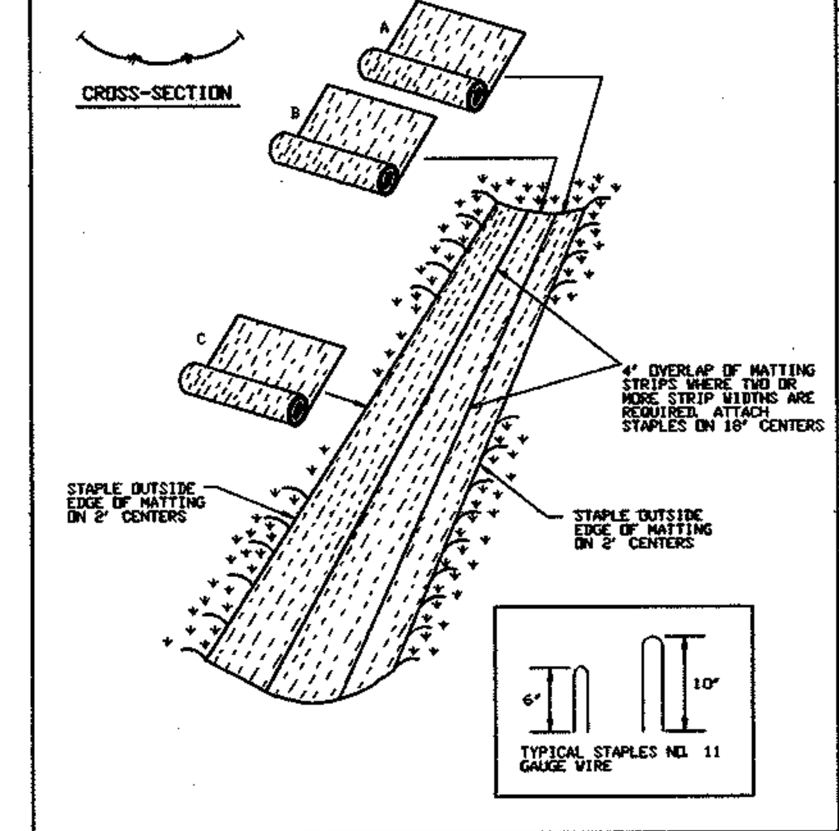
SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT (1 DAY) AND MDE PERMIT.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1 DAY)
3. CONSTRUCT SILT FENCES AND SUPER SILT FENCES, PERIMETER DIKE/SWALE AND EARTH DIKES (2 DAYS)
4. CONSTRUCT SEDIMENT BASIN TO TEMPORARY GRADES SHOWN (3 DAYS)
   A. CONSTRUCT OUTFALL STRUCTURE, 15 ' OUTFLOW CHANNEL AND GABION LEVEL SPREADER
   B. BRICK 4' WEIR TO ELEV. 332.6
   C. CONSTRUCT 20' EMERGENCY SPILWAY TO EL. 332.6
   D. CONSTRUCT SEDIMENT BASIN AND BAFFLES AS SHOWN.
   D. DO NOT PLACE TOP SLAB ON RISER STRUCTURE UNTIL CONVERSION TO PERMANENT SWM.
5. WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, CONSTRUCT STORM DRAIN SYSTEM. DELAY CONSTRUCTION OF STORM DRAIN SYSTEM FROM M-7 TO M-2 TO M-1 AND ES-1 UNTIL CONVERSION TO PERMANENT SWM. CONSTRUCTION OF STORM DRAIN FROM M-3 TO M-2 SHALL TERMINATE AT BOTTOM OF SEDIMENT BASIN UNTIL CONVERSION TO PERMANENT SWM. (25 DAYS)
6. CONSTRUCT SITE TO GRADES INDICATED, INCLUDEING PEDESTRIAN BRIDGE (20 DAYS) NOTE THAT STREAM ~~MAY~~ IS ~~BE~~ CLOSED ~~ONLY~~ BETWEEN MARCH 1 AND JUNE 15 FROM CONSTRUCTION, COMPLETE LIVE FASCINES.
7. WHEN ALL CONTRIBUTING DRAINAGE AREAS TO SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED, AND WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS.
8. CONVERT SEDIMENT BASIN TO PERMANENT STORM WATER MANAGEMENT FACILITY. (2 DAYS)
   A. REMOVE ACCUMULATED SEDIMENTS
   B. CONSTURCT REMAINING STORM DRAIN SYSTEM
   C. REMOVE TEMPORARY DEWATERING STANDPIPE AND CONSTRUCT SAND FILTER AND 6" PVC PER PLAN
   D. PLACE TOP SLAB ON RISER.
   E. REMOVE BRICK AT 4' WEIR
   F. CONSTRUCT 20 FOOT EMERGENCY SPILLWAY TO ELEVATION 332.0.
   G. INSTALL PERFORATED TRASH RACK AT SWM-1
   H. INSTALL GABION WEIR IN FOREBAY
   I. STABILIZE DISTURBED AREAS.

EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS INCLUDING THE LIVE FASCINES FOR THE BANK STABILIZATION. PROVIDE EROSION CONTROL MATTING(ECM) FOR ALL DISTURBED AREAS WITHIN THE STREAM BUFFER.
3. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE MAIN TRENCH.
4. EXCAVATION AND BACKFILL SHALL BE LIMITED TO THAT WHICH CAN BE STABILIZED WITHIN ONE WORKING DAY.
5. IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER TRENCH, ALL DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
6. THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
7. ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

DETAIL 30 – EROSION CONTROL MATTING



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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.

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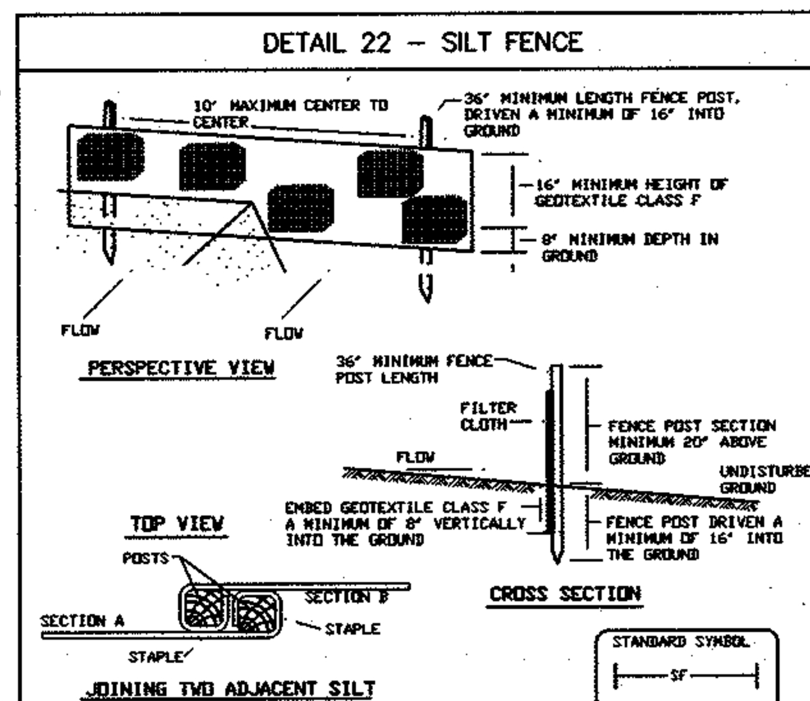
DETAIL 22 – SILT FENCE



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 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 ft²/ 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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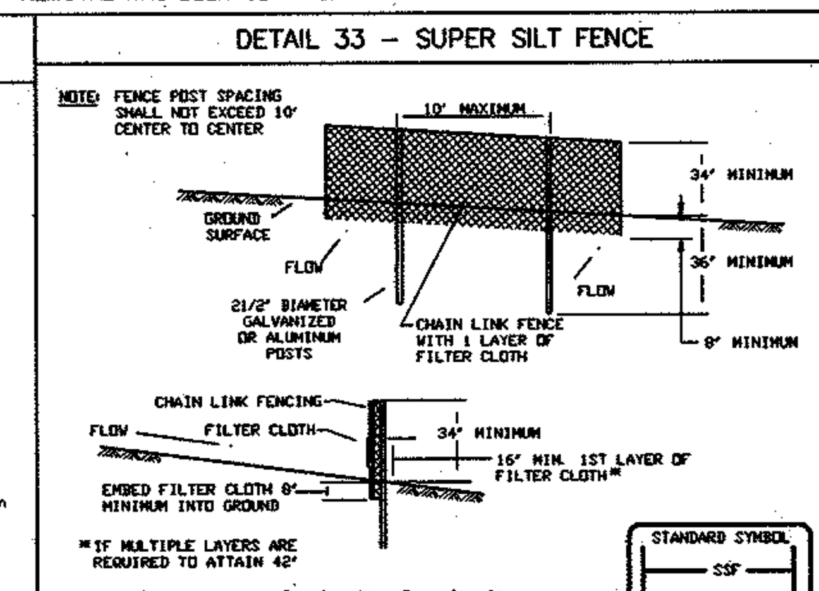
DETAIL 33 – SUPER SILT FENCE



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/ft²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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SUPER SILT FENCE

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

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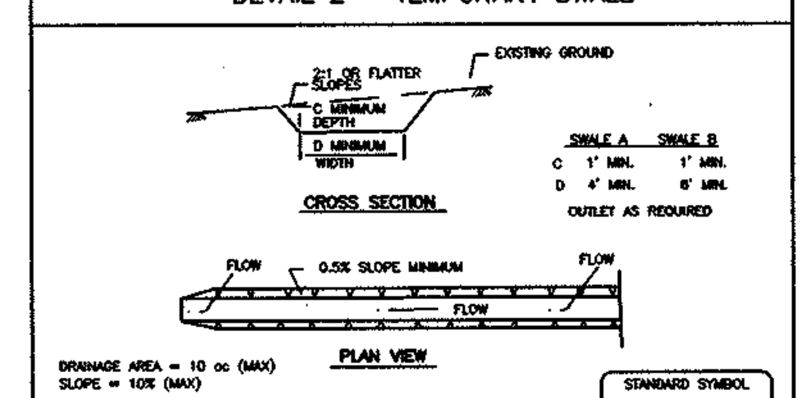
DETAIL 2 – TEMPORARY SWALE



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 soil in a minimum 7" layer.

Construction Specifications

1. All temporary swales 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 swale.
5. The swale 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, if necessary, 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 swale.
8. Inspection and maintenance must be provided periodically and after each rain event.

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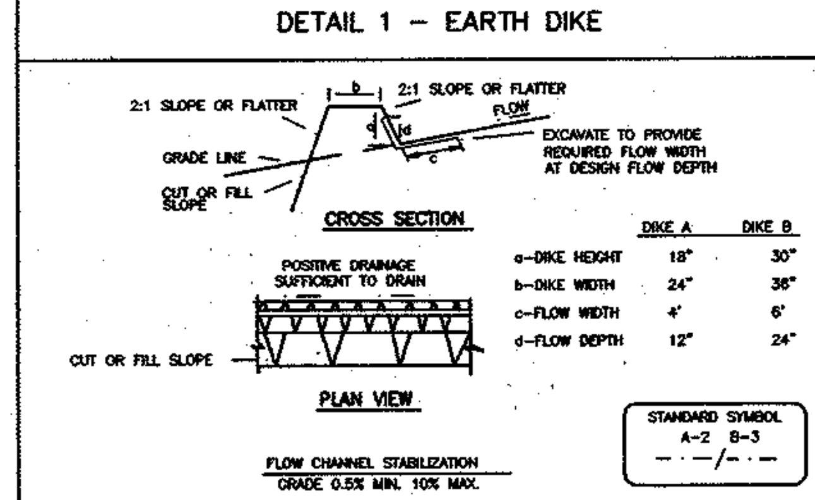
DETAIL 1 – EARTH DIKE



	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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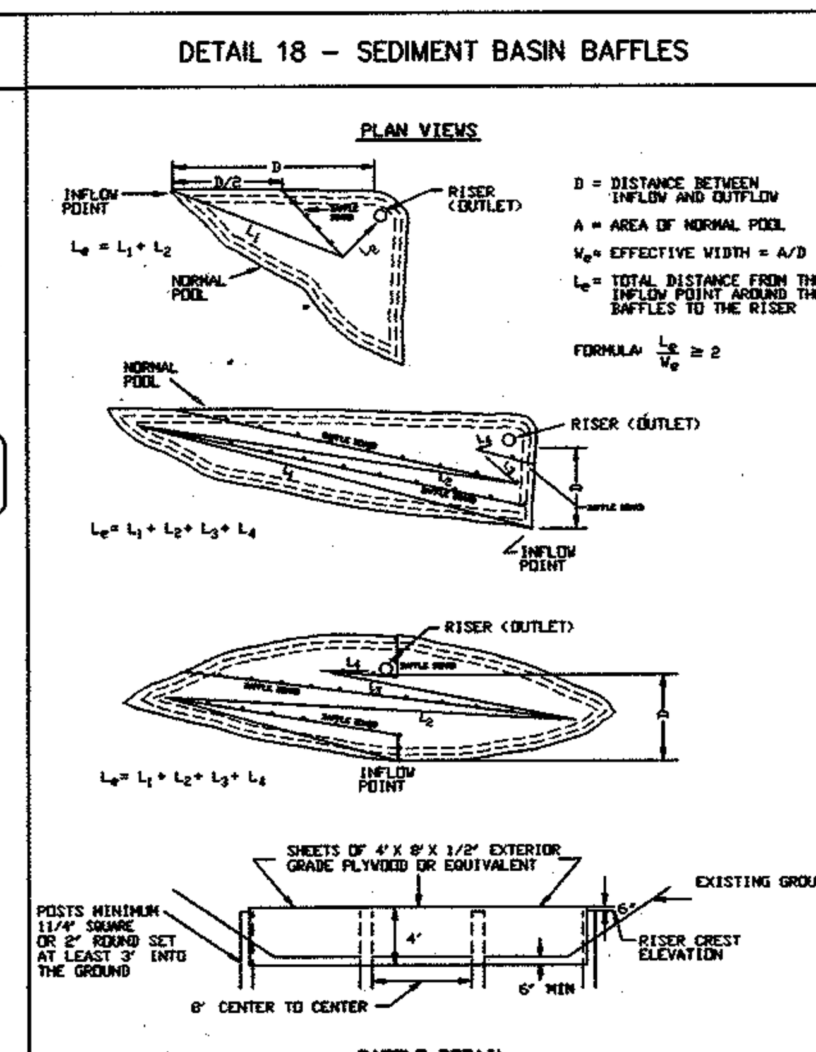
DETAIL 18 – SEDIMENT BASIN BAFFLES



FORMULA: $\frac{L_e}{W_e} \geq 2$

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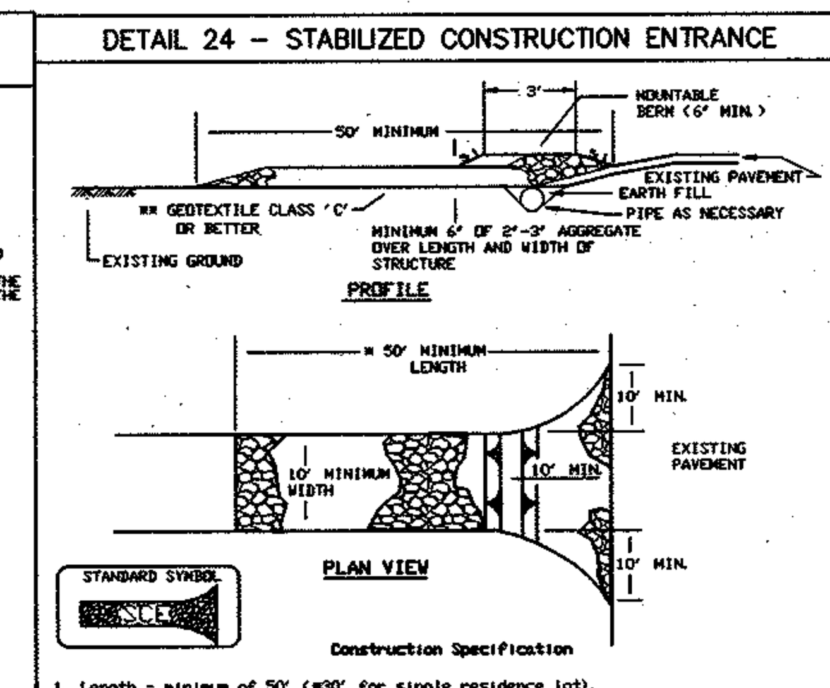
DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE



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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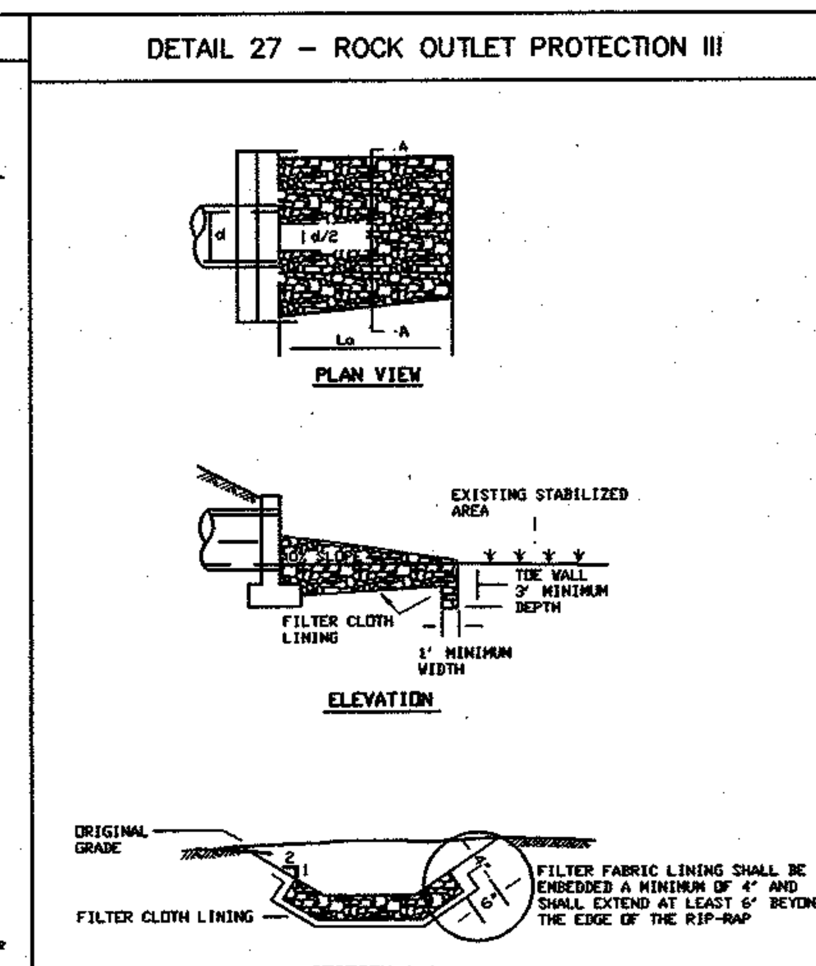
DETAIL 27 – ROCK OUTLET PROTECTION III



NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

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ROCK OUTLET PROTECTION III

CONSTRUCTION SPECIFICATIONS

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two places of geotextile shall be a minimum of one foot.
4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

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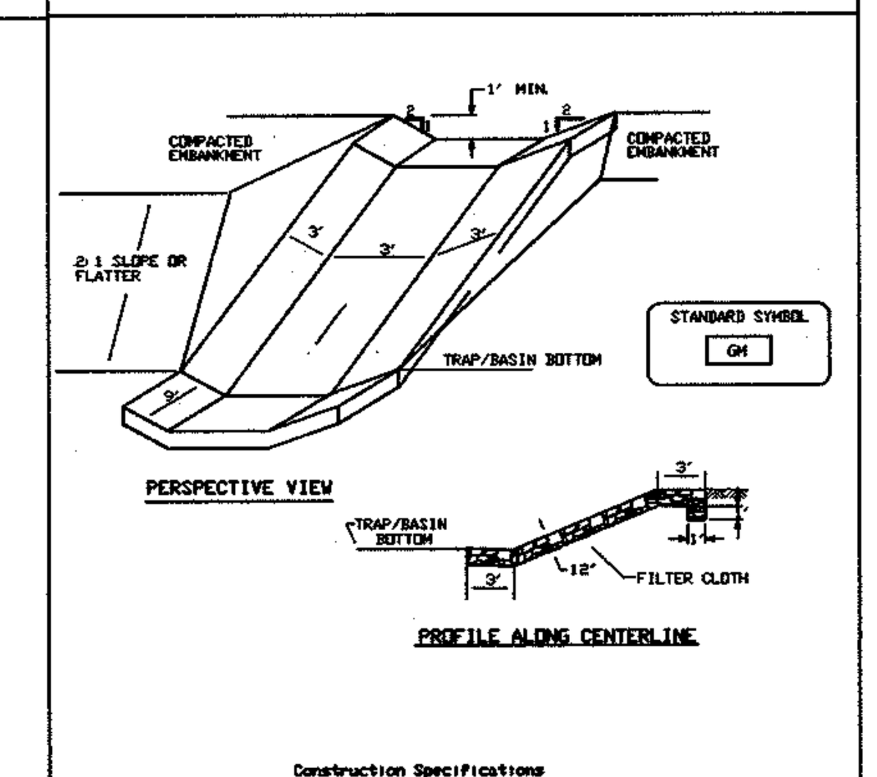
DETAIL 6 – GABION INFLOW PROTECTION



Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" - 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

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* FOR REMOVABLE PUMP STATION DETAIL AND SPECIFICATIONS, BAFFLE DETAIL, AND BASIN DRAW DOWN SCHEMATIC HORIZONTAL DRAWN DOWN DEVICE, SEE SHEET 9 OF 12.

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."

SIGNATURE OF DEVELOPER — DATE 6/17/04
Donald R. Reuwer Jr.
PRINTED NAME OF DEVELOPER

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."

SIGNATURE OF ENGINEER — DATE 6/17/04
JOHN B. MILDENBERG
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA – NATURAL RESOURCE CONSERVATION SERVICE — DATE 7/6/04

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/6/04

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF BUREAU OF HIGHWAYS — DATE 7-27-04

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/04

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/30/04

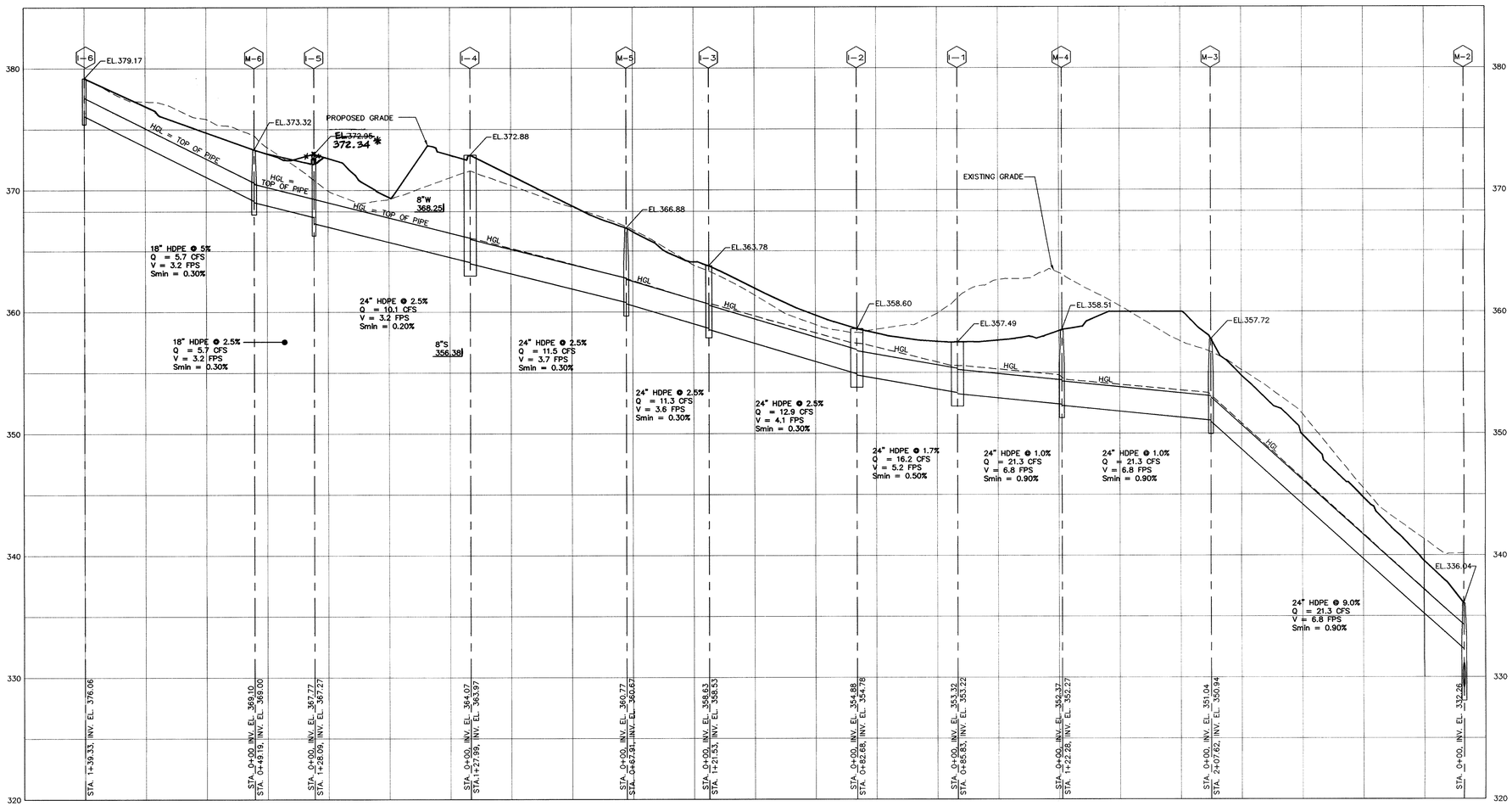
project	date
2002-007	JUNE 2004
illustration	engineering
HSP	HSP
scale	approval
NTS	JBM

no.	description	date
	revisions	

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
EROSION AND SEDIMENT CONTROL NOTES & DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

02-007\DWG\FINAL\007-SED-NOTES.DWG



STORM DRAIN PROFILE FROM I-6 TO M-2

HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'

STRUCTURE SCHEDULE

NO.	LOCATION*	TOP**	INV. IN	INV. OUT	COMMENTS
ES-1	N567491.778 E1378102.110	----	328.13	----	24" ø HDPE END SECTION
I-1	AMBROSIA DRIVE, STA. 5+56.71 14.85' RT.	357.49	353.32	353.22	INLET TYPE A-10 (HO. CO. STD SD 4.41) - SUMP
I-2	AMBROSIA DRIVE, STA. 4+74.03 14.84' RT.	358.60	354.88	354.78	INLET TYPE A-10 (HO. CO. STD SD 4.41)
I-3	AMBROSIA DRIVE, STA. 3+53.63 14.82' RT.	363.78	358.63	358.53	INLET TYPE A-10 (HO. CO. STD SD 4.40)
I-4	AMBROSIA DRIVE, STA. 1+71.41 14.85' RT.	372.88	364.07	363.97	INLET TYPE A-10 (HO. CO. STD SD 4.41)
* I-5	N567877.377 E1377612.620	*372.34 ~~372.95~~	367.77	367.27	INLET TYPE K WITH GRATE (HO. CO. STD SD-4.12 & SD-4.13) - SUMP
I-6	N568041.620 E1377578.343	379.17	----	376.06	INLET TYPE K WITH GRATE (HO. CO. STD SD-4.12 & SD-4.13) - SUMP
I-7	N567805.937 E1378294.823	340.0	333.19	333.09	INLET TYPE K WITH GRATE (HO. CO. STD SD-4.12 & SD-4.13) - SUMP
I-8	N567890.083 E1378260.983	342.0	337.37	337.27	INLET TYPE K WITH GRATE (HO. CO. STD SD-4.12 & SD-4.13) - SUMP
I-9	N568008.270 E1378240.259	344.0	340.45	340.20	INLET TYPE K WITH GRATE (HO. CO. STD SD-4.12 & SD-4.13) - SUMP
I-10	N568080.418 E1378180.973	350.0	----	343.89	INLET TYPE K WITH GRATE (HO. CO. STD SD-4.12 & SD-4.13) - SUMP
I-11	N567947.865 E1378130.947	358.0	----	354.84	INLET TYPE A-10 (HO. CO. STD SD 4.41) - SUMP
M-1	N567524.661 E1378115.465	334.75	328.55	328.45	MH (HO. CO. STD G 5.01)
M-2	N567539.155 E1378163.545	336.04	329.56	329.06	MH (HO. CO. STD G 5.01)
M-3	N567734.141 E1378092.241	357.72	351.04	350.94	MH (HO. CO. STD G 5.01)
M-4	AMBROSIA DRIVE, STA. 6+45.44 5.75' RT.	358.51	352.37	352.27	MH (HO. CO. STD G 5.01)
M-5	AMBROSIA DRIVE, STA. 2+94.79 18.94' RT.	366.88	360.77	360.67	MH (HO. CO. STD G 5.01)
M-6	N567918.114 E1377642.828	373.32	369.10	369.00	MH (HO. CO. STD G 5.01)
M-7	N567573.010 E1378246.960	335.26	330.66	330.56	MH (HO. CO. STD G 5.01)
M-8	N567646.949 E1378259.890	344.0	332.08	331.98	MH (HO. CO. STD G 5.01)
M-9	N567715.012 E1378251.208	357.86	354.67	354.42	MH (HO. CO. STD G 5.01)

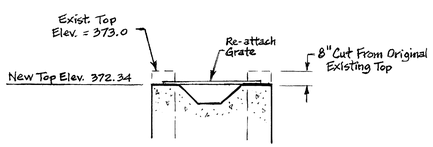
Modified- Reduced Depth of Slot (Top Elev. Lowered 0.67 Ft.) *Revision #1

* STATIONS GIVEN TO CENTERLINE FACE OF INLET AT TOP OF CURB FOR INLETS LOCATED WITHIN THE ROAD RIGHT-OF-WAY. STATIONS FOR "K" INLETS TO CL OF INLET. LOCATION OF MANHOLES IS TO CL OF MANHOLE COVER. END SECTION GIVEN TO THE CENTERLINE OF PIPE AT THE CONNECTION OF THE STORM DRAIN PIPE TO THE END SECTION.

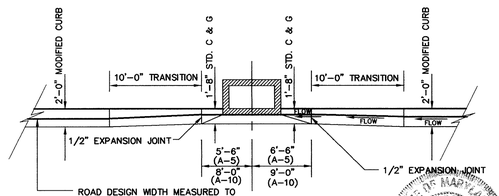
** ELEVATIONS MEASURED TO CENTER OF ALL INLETS.

PIPE SCHEDULE

QUANTITY	PIPE SIZE
128	15" HDPE
876	18" HDPE
1030	24" HDPE



EXISTING INLET I-5 MODIFICATION TO REDUCE HEIGHT OF INLET
Scale: 1"=3'
(Revision #1 - By CFS)



CURB TRANSITION - INLETS
NTS

DEVELOPER

ELLICOTT CITY LAND HOLDING, INC.
C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480-9105

APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 7-27-04
APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/1/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/30/04

* For Revision #1 Only

5-10-06

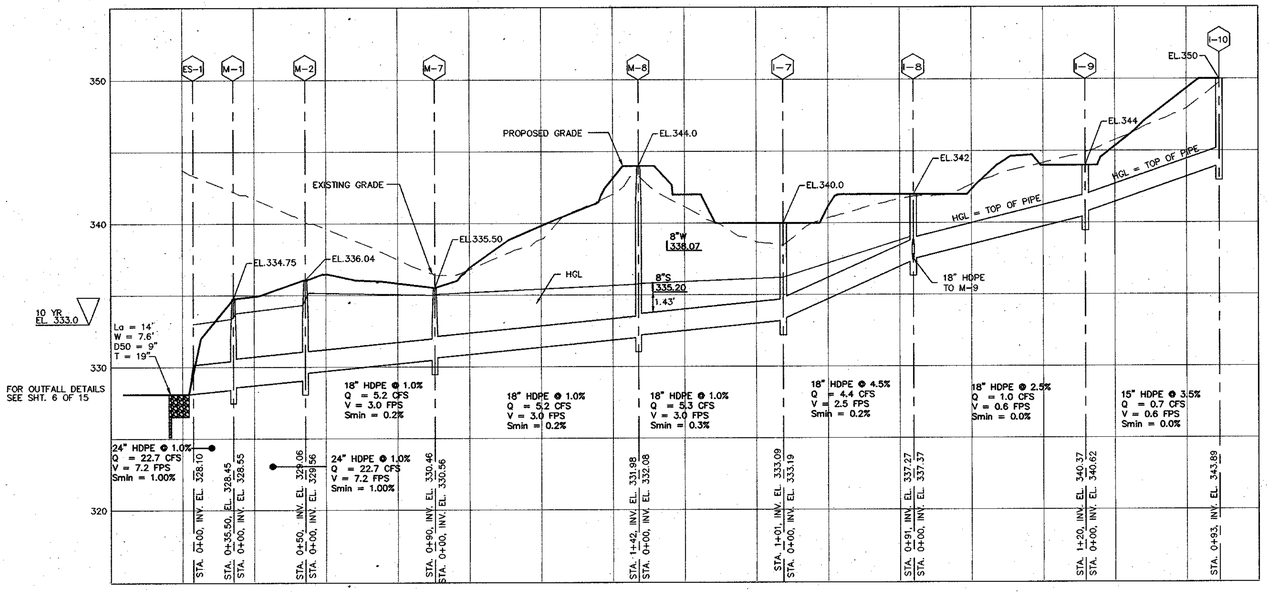
project	2002-007	date	JUNE 2004
illustration	HSP	engineering	HSP
scale	AS SHOWN	approval	JBM

no.	description	date
revisions		
1 *	Modified Str. I-5; Lowered Top & Shortened Height of Slot (By CFS)	5/10/06

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
STORM DRAIN PROFILES

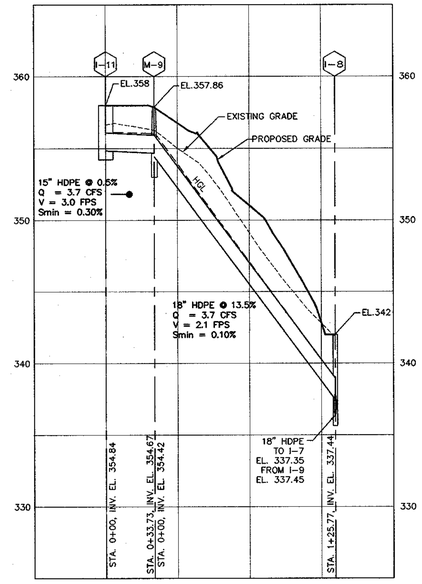
MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

02-007\DWG\FINAL\007-STORM DRAIN.DWG



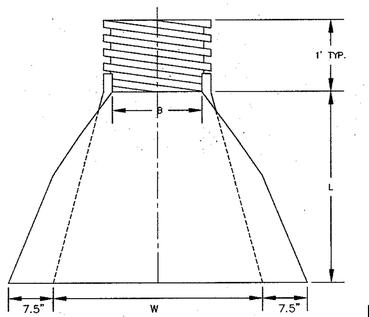
STORM DRAIN PROFILE FROM ES1 TO I-10

HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'

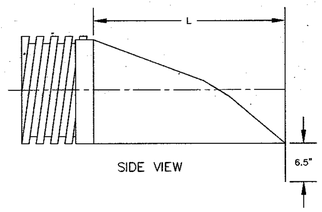


STORM DRAIN PROFILE FROM I-11 TO I-8

HORIZONTAL SCALE : 1" = 50'
VERTICAL SCALE : 1" = 5'

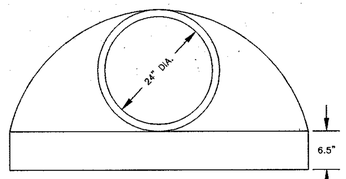


TOP VIEW



SIDE VIEW

PIPE DIAMETER	PART NO.	B MAX	L, ±1/2	W, ±2
24" HDPE	2410 NP	18"	36"	45"



END VIEW

INSTALLATION INSTRUCTIONS

1. SPREAD THE END SECTION COLLAR AND PLACE IT OVER THE LAST PIPE CORRUGATION. MAKE SURE THE COLLAR SEATS PROPERLY IN THE CORRUGATION VALLEY.
2. INSERT THREADED ROD THROUGH THE PRE-DRILLED HOLES IN THE END SECTION COLLAR. TIGHTEN WING NUTS.
3. PLACE BACKFILL AROUND THE END SECTION AND OVER THE TOE PLATE. USE CARE DURING COMPACTION ALONG THE SIDES TO PREVENT DISTORTION.

HDPE END SECTIONS
(PART NO. 2410 NP)

NOT TO SCALE

MGWC 2.5: LIVE FASCINES

Woody vegetative system for bank stabilization

DESCRIPTION

Establishment of live fascines, also known as wattles, consists of the following:

- preparation of sausage-shaped bundles of live, woody plant cuttings,
- anchoring of these bundles in shallow ditches in a slope or streambank with live and/or inert stout stakes, and
- partial burial of the fascines to promote growth.

EFFECTIVE USES & LIMITATIONS

As with other bioengineering measures, live fascines are an economical method when materials are locally available. Additionally, wattling is often an effective measure when employed to:

- reduce runoff energy, and hence surface erosion, by breaking a slope into a series of shorter slopes;
- protect other bioengineering measures from washout and undercutting;
- replace brush layers on unstable cut slopes (since they are easier to install);
- protect streambanks from washout and seepage, particularly at toes where water levels fluctuate only moderately; and
- stabilize or protect streambanks for the following Rosgen stream types: B4, B5, B6, C1, C2, C3, C4, C5, C6, DA, E3, E4, E5, and E6.

Supplementary or alternative mitigating measures may be required for the following situations:

- streambanks with heavy surface drainage,
- areas of flashy flows,
- slopes subject to shallow mass movements (since fascines have a modest rooting depth), and
- the outsides of meander bends (high velocity areas of the channel).

MATERIAL SPECIFICATIONS

Willow, alder, and dogwood cuttings are well suited for use in live fascines. Fascine bundles can range from 5 to 30 feet (1.5 to 9 meters) in length, depending upon handling and transportation limitations, with diameters ranging from 4 to 10 inches (10 to 25 cm). Untreated twine or wire used to tie the bundles should be at least 2 mil in meters thick. If inert (dead) stakes are employed to secure the bundles, they should be made from 2 by 4-inch (5 by 10-cm) lumber cut on the diagonal with lengths of 2.5 feet (0.8 meters) for cut slopes and 3 feet (0.9 meters) for fill slopes.

Approximate Cost ($1999):
$5.50-$22 per linear ft.

INSTALLATION GUIDELINES

Live fascine construction should occur during the dormancy period, usually late fall to early spring, with bundle preparation proceeding as follows (refer to Detail 2.5):

- the growing tips of all branches should be oriented downstream in the same direction, and

MGWC 2.5: LIVE FASCINES

- bundles should be tied every 12 to 18 inches (30-to-45 cm) along their lengths.

The initial row of bundles should be positioned at the height of the normal summer water level such that one half to two-thirds of the bundle is submerged. These toe bundles should be protected from washout by positioning them on brush layers extending 20 to 31 inches (50 to 80 cm) into the stream. Project planners may need to study an aptly chosen vegetated reference reach for further guidance when installing live fascines.

All bundles should be anchored in trenches dug to a depth at least one-half the bundle diameter. Inert stakes should be driven every 12 to 39 inches (30 to 100 cm) through and below the lengths of the fascines with extra stakes used at bundle overlaps. The length of overlap should be approximately 1 to 3 feet (0.3 to 0.9 meter). Live stakes can be employed on the down slope side of the fascine rows or through the bundles with the tops of the stakes extending 2 to 3 inches (5 to 8 cm) above the bundle tops. Soil should be tamped into and along the sides of the bundles, leaving the top 2 inches (5 cm) exposed to promote growth.

Additional fascine rows should be installed up the slope at predetermined intervals. If the slope is dry a majority of the time, bundles should be arranged parallel to the contour according to Table 2.5a.

Table 2.5a: Fascine Spacing on Dry Slope

Slope Steepness	Contour Distance
1:1 to 1.5:1	3-4 ft (0.9-1.2 m)
1.5:1 to 2:1	4-5 ft (1.2-1.5 m)
2:1 to 2.5:1	5-6 ft (1.5-1.8 m)
2.5:1 to 3:1	6-8 ft (1.8-2.4 m)
3.5:1 to 4:1	8-9 ft (2.4-2.7 m)
4.5:1 to 5:1	9-10 ft (2.7-3.0 m)

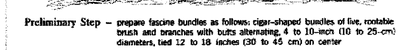
Conversely, if the slope is excessively wet, bundles should be installed at an angle to the contour to expedite slope drainage as dictated in Table 2.5b.

Table 2.5b: Fascine Spacing on Wet Slope

Slope Steepness	Contour Distance
1:1 to 1.5:1	2-3 ft (0.6-0.9 m)
1.5:1 to 2:1	3-5 ft (0.9-1.5 m)
2:1 to 2.5:1	3-5 ft (0.9-1.5 m)
2.5:1 to 3:1	4-5 ft (1.2-1.5 m)
3.5:1 to 4:1	5-7 ft (1.5-2.1 m)
4.5:1 to 5:1	6-8 ft (1.8-2.4 m)

Straw or matching material should be spread between fascine rows on slopes flatter than 1.5:1, and jute or coir fabric should be used on slopes greater than 1.5:1 to control erosion until the fascine rows and supporting vegetation become established.

Maryland's Guidelines To Waterway Construction
DETAIL 2.5: LIVE FASCINES

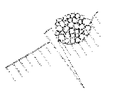


Preliminary Step – prepare fascine bundles as follows: cigar-shaped bundles of live, rootable brush and branches with butts alternating, 4 to 10-inch (10 to 25-cm) diameters, tied 12 to 18 inches (30 to 45 cm) on center

Construction Note: installation begins at the bottom of the slope and proceeds from Step 1 through Step 5
Adapted from Leiser (1983)

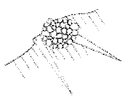
Step 1 – insert stakes on contour

Step 2 – dig trench (1/2 bundle diameter in depth) above the stakes

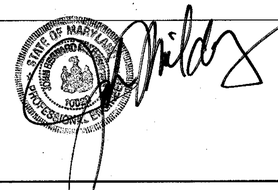


Step 3 – place bundles in trench

Step 4 – add additional stakes through and below bundles



Step 5 – tamp soil into and along sides of bundle leaving the top 2 inches (5 cm) exposed to promote growth



DEVELOPER

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APPROVED: DEPARTMENT OF PUBLIC WORKS
CHIEF BUREAU OF HIGHWAYS — DATE 7-27-04

APPROVED: DEPARTMENT OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/30/04

project 2002-007 | date JUNE 2004
illustration HSP | engineering HSP
scale AS SHOWN | approval JBM

date | description revisions | no.

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
STORM DRAIN PROFILES

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02-007\DWG\FINAL\007-STORM DRAIN.DWG

DEVELOPER

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 7/1/04

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/3/04

project	date
2002-007	JUNE 2004
illustration	engineering
HSP	HSP
scale	approval
NTS	JBM

no.	description	date
1	REVISE PLANS TO REFLECT APPROVED ...	

revisions

ILCHESTER OAKS

LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DRAINAGE AREA MAP

MILDENBERG, BOENDER & ASSOC., INC.
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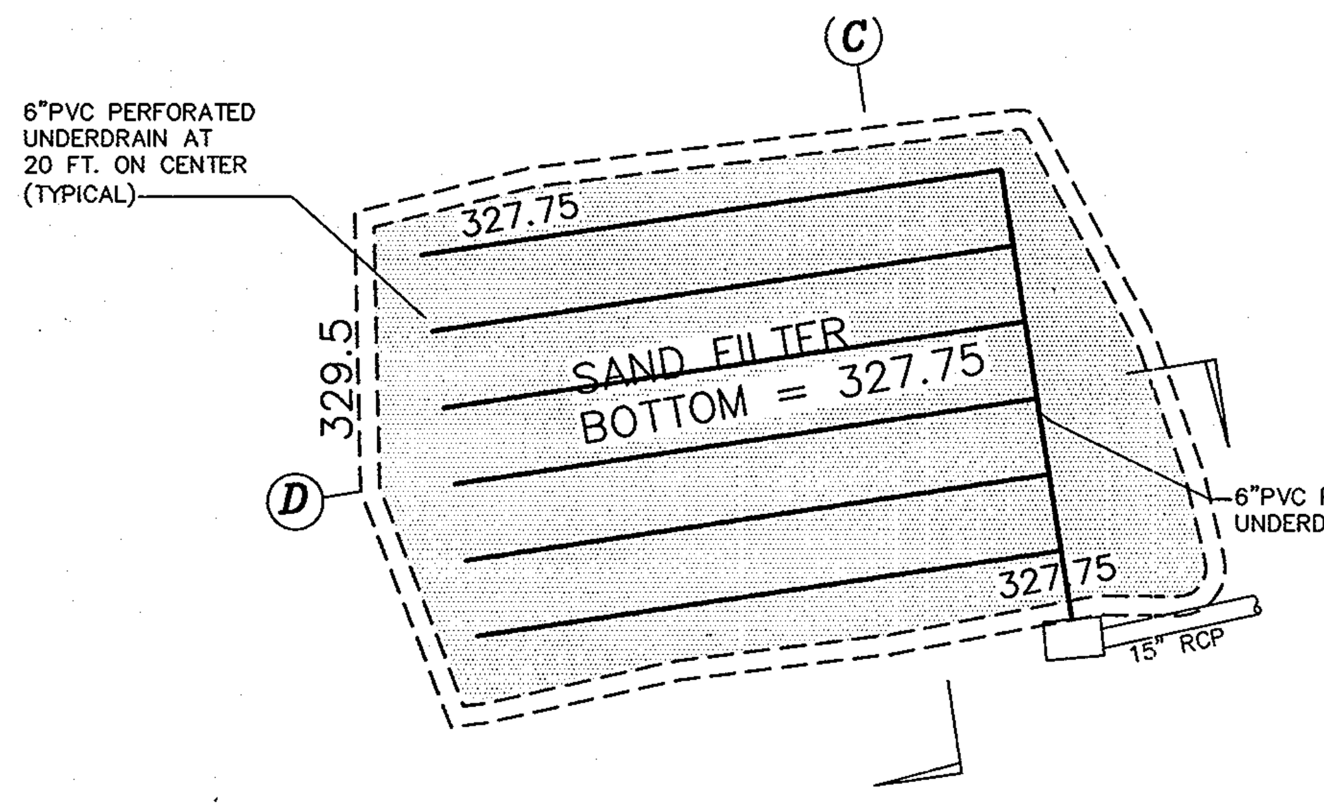
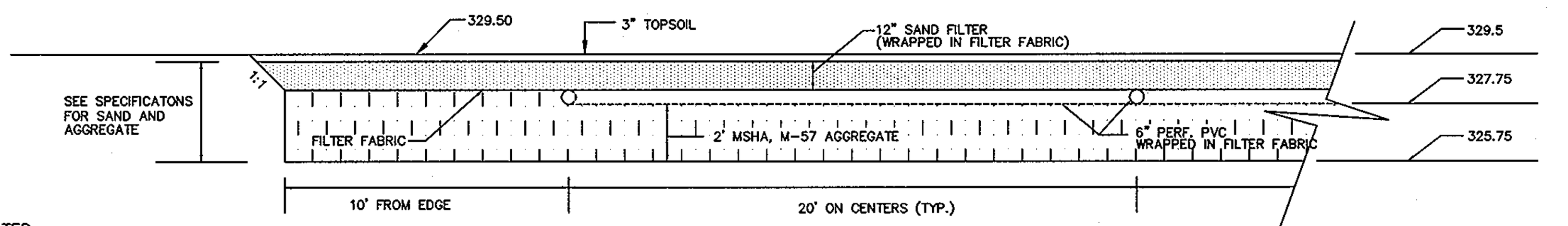
F-04-36



PLAN – SAND FILTER

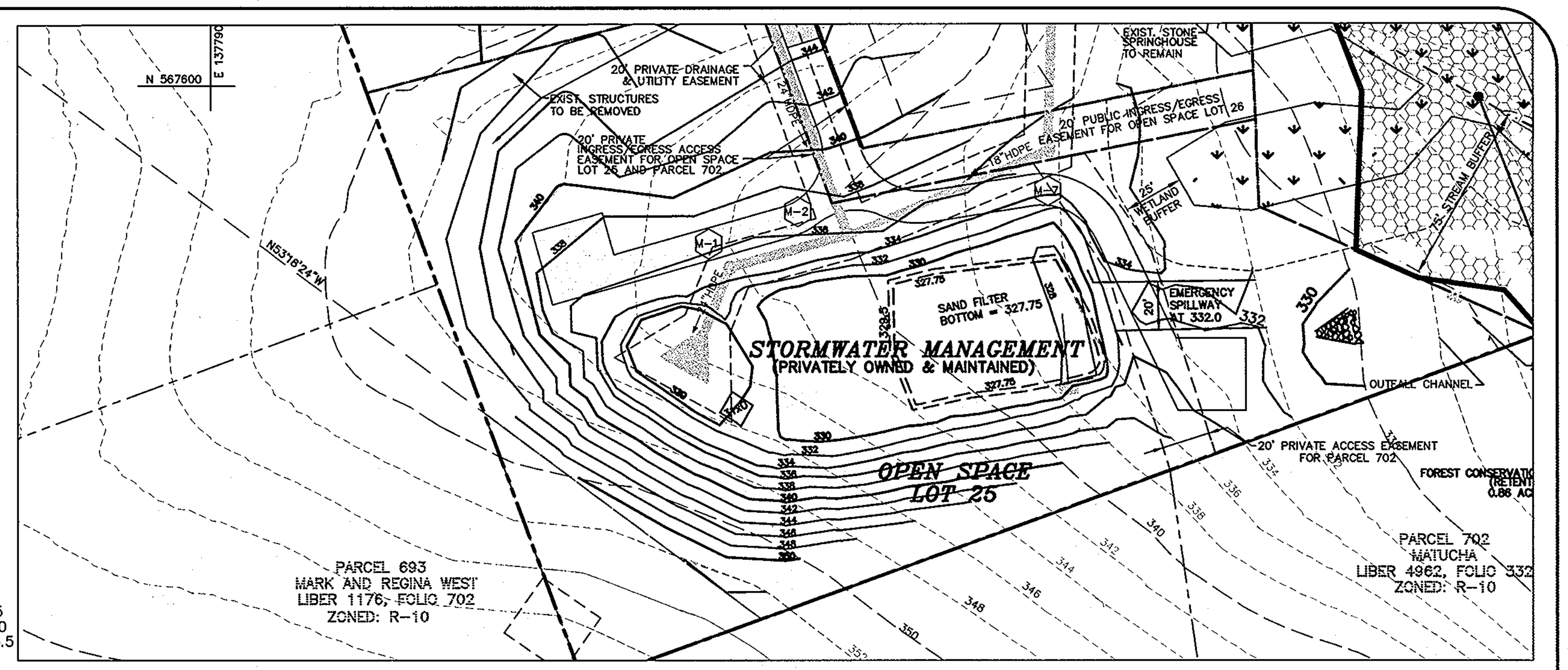


SECTION (C)

SCALE: 1"=5'

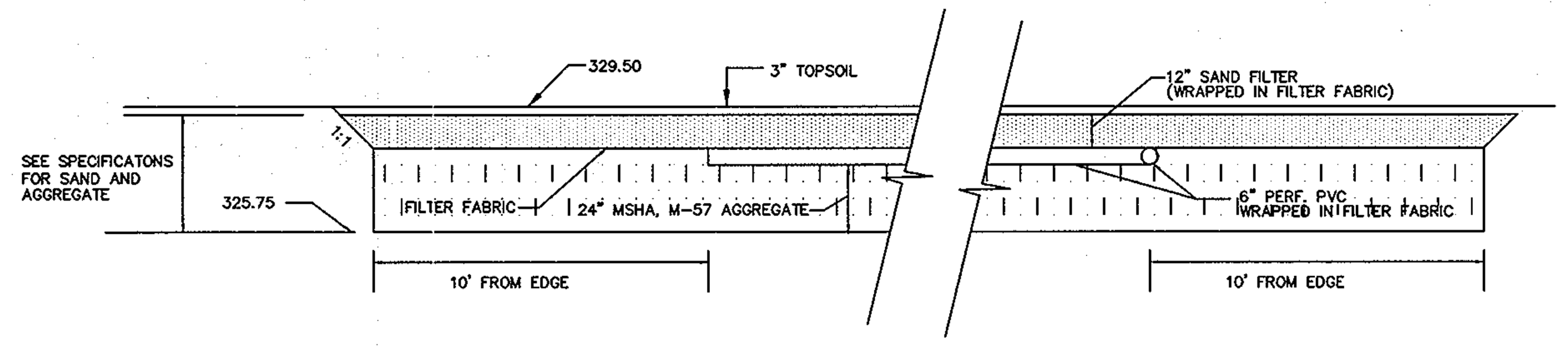
SWM POND DATA:

HAZARD CLASSIFICATION:	"A"
DRAINAGE AREA:	= 25.4 AC
PROPOSED RCN:	= 72
PROPOSED Tc:	= 0.33 HRS.
SAND FILTER AREA (Wqv):	3,896 SQ. FT.
EXTENDED DETENTION WSEL:	331.6
10 YR. WSEL:	333.0
100 YR. WSEL:	333.6
Wqv REQUIRED:	= 10,122 Cu. Ft.
Wqv PROVIDED:	= 59,245 Cu. Ft.
Rev REQUIRED:	= 3,031 Cu. Ft.
Rev PROVIDED:	= 3,117 Cu. Ft.
Cpv Peak (OUT OF SWMF)	= 0.16 CFS @ EL.= 331.5
10 YR. Q (OUT OF SWMF)	= 57.7 CFS @ EL.= 333.0
100 YR. Q (OUT OF SWMF)	= 105.2 CFS @ EL.= 333.5
OWNERSHIP:	PRIVATE
MAINTENANCE:	PRIVATE



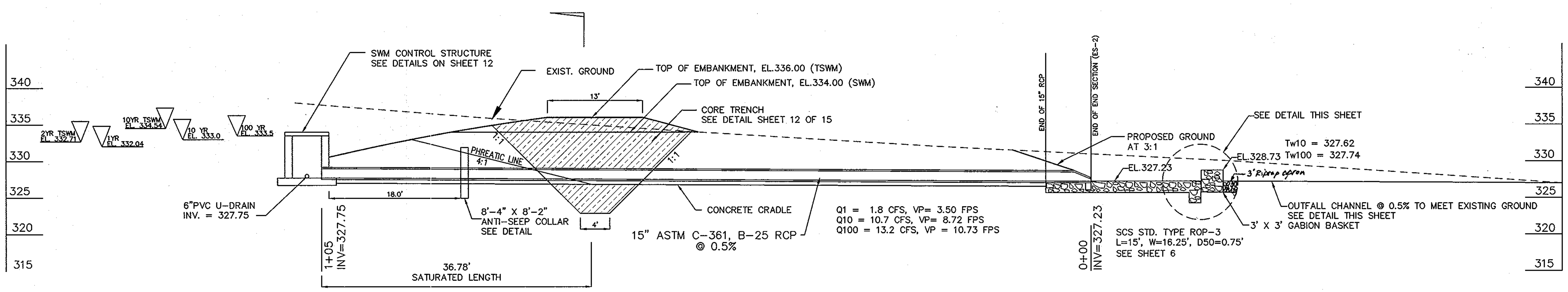
PLAN – STORMWATER MANAGEMENT

SCALE: 1"=50'



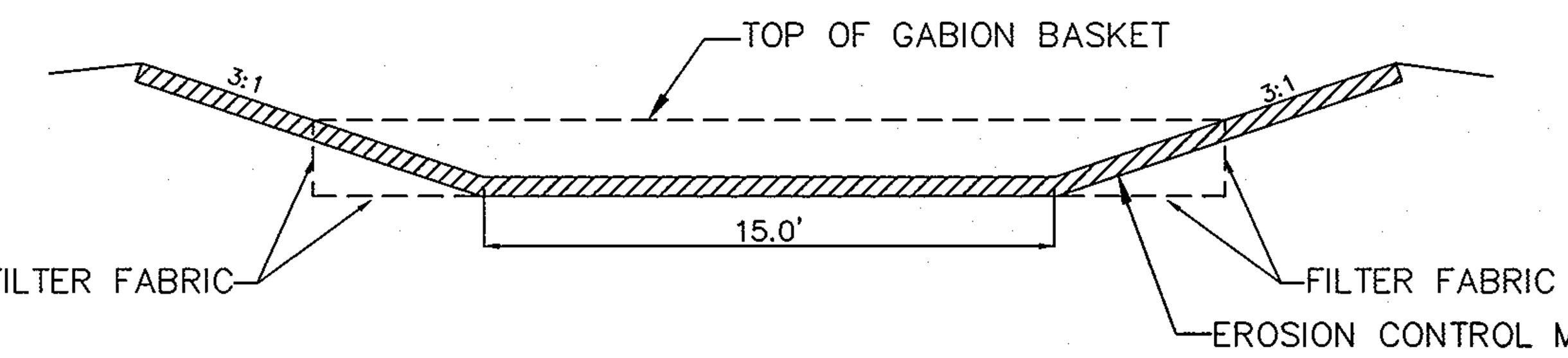
SECTION (D)

SCALE: 1"=5'



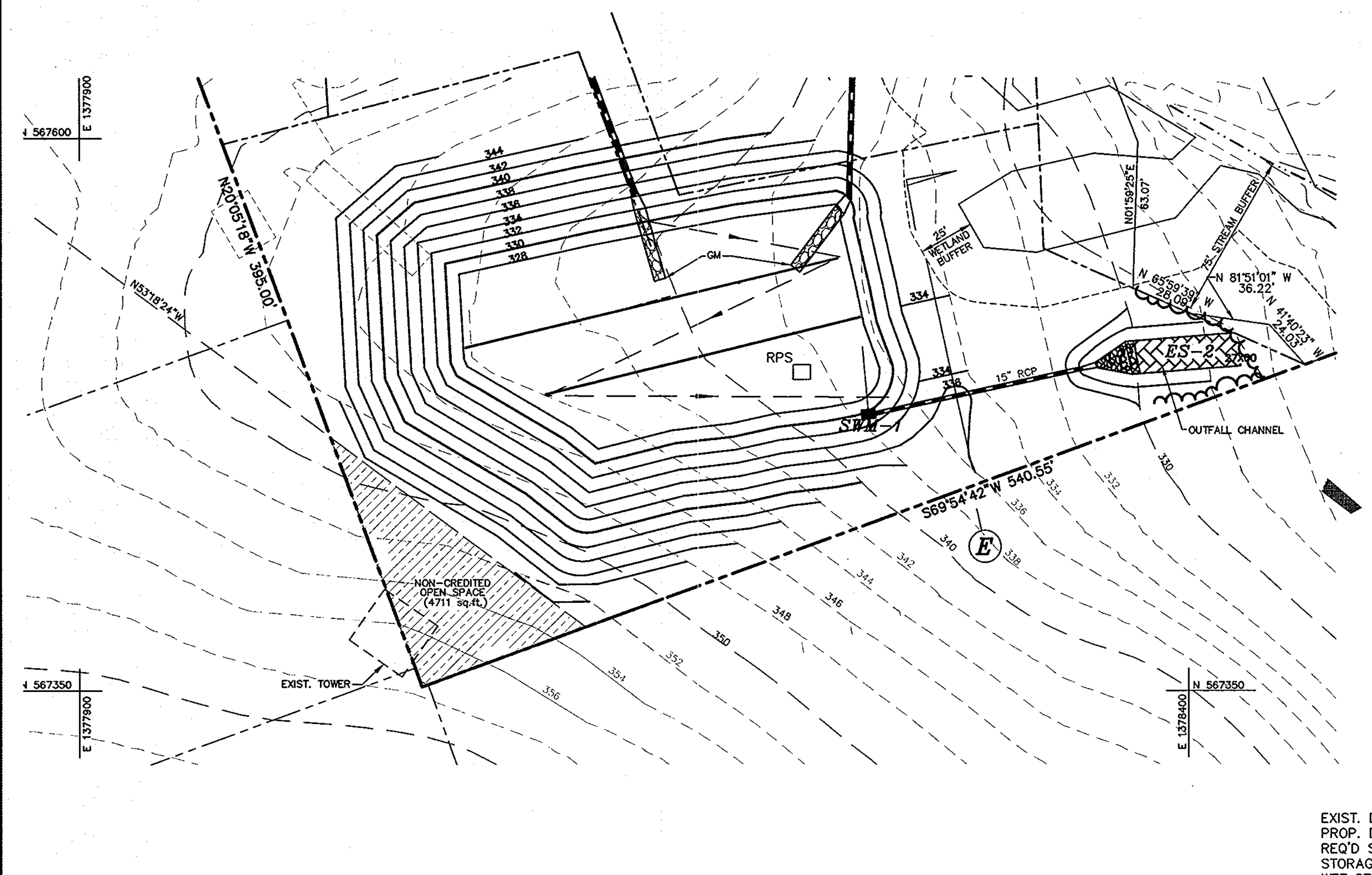
(E) PROFILE – PRINCIPLE SPILLWAY

SCALE: 1"=10'



DETAIL – OUTFALL CHANNEL

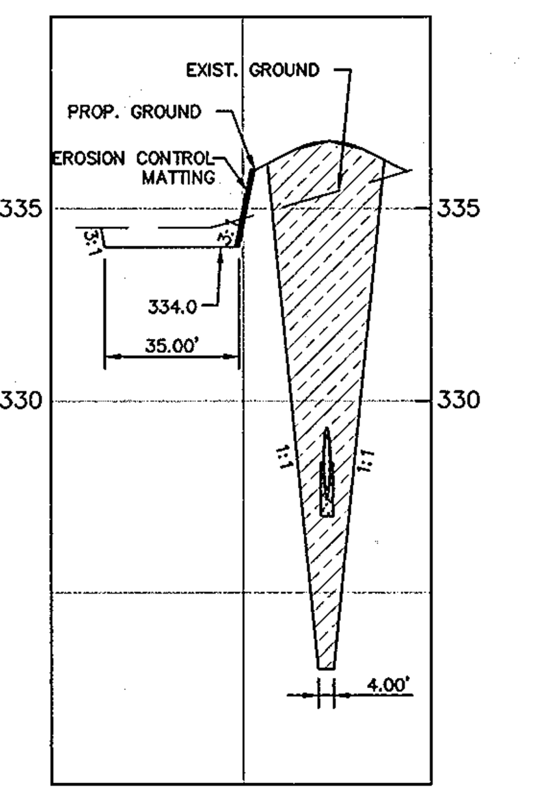
NTS



PLAN – TEMPORARY SEDIMENT BASIN

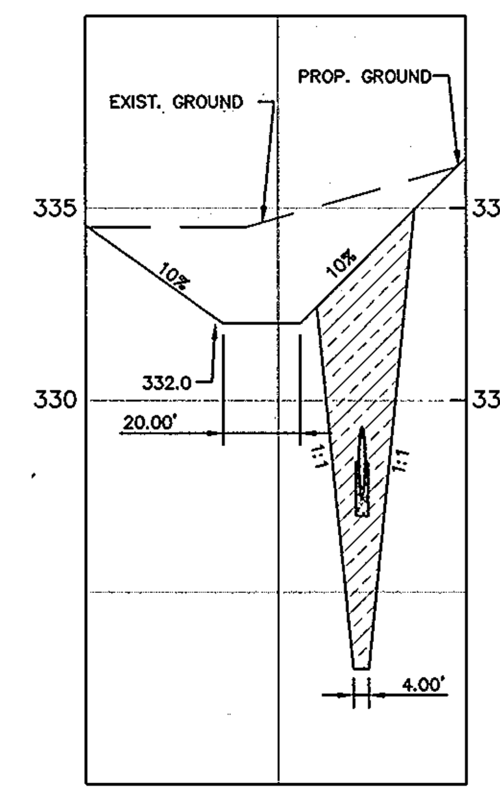
SCALE: 1"=50'

EXIST. DRAINAGE AREA	22.96 AC.
PROP. DRAINAGE AREA	25.4 AC.
REQ'D STORAGE	91,440 CU. FT.
STORAGE PROV'D @ 332.6	91,440 CU. FT.
WET STORAGE REQ'D	45,720 CU. FT.
WET STORAGE PROV'D @ 330.5	46,537 CU. FT.
DRY STORAGE REQ'D	45,720 CU. FT.
DRY STORAGE PROV'D @ 332.6	45,720 CU. FT.
CLEANOUT ELEV.	329.2
BOTTOM ELEV.	327.75
Q2 EXIST.	5.5 CFS
Q2 PROP. (TEMP)	2.3 CFS
Q10 (TEMP)	46.2 CFS
10 YR. WSEL	334.54
EMBANKMENT ELEV.	336.00



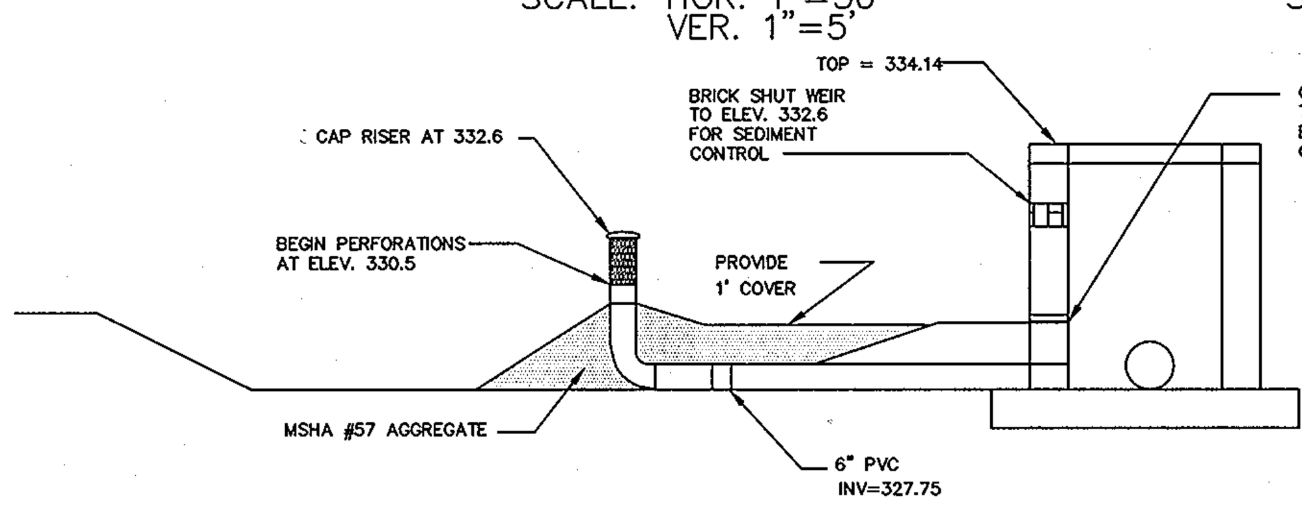
SECTION E – TSWM

SCALE: HOR. 1"=50' VER. 1"=5'



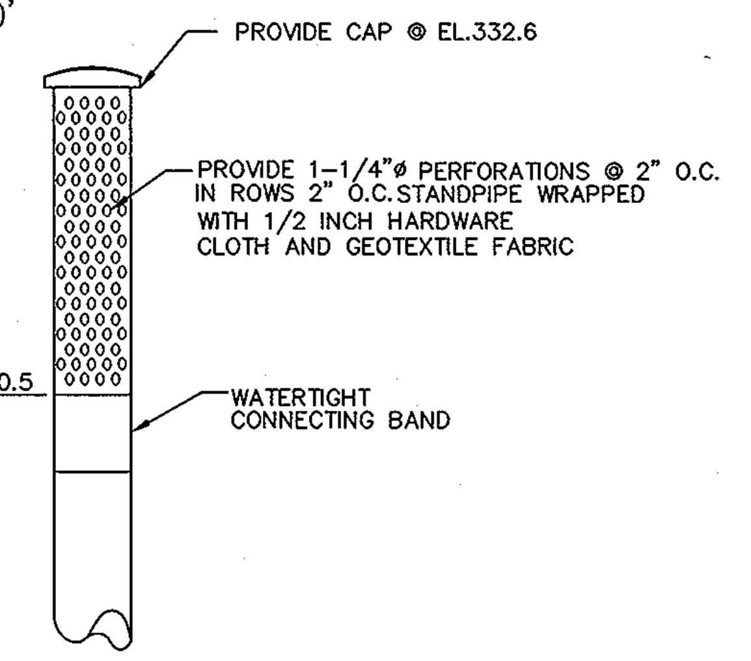
SECTION E – SWM (PERMANENT)

SCALE: HOR. 1"=50' VER. 1"=5'



DETAIL–TEMPORARY RISER

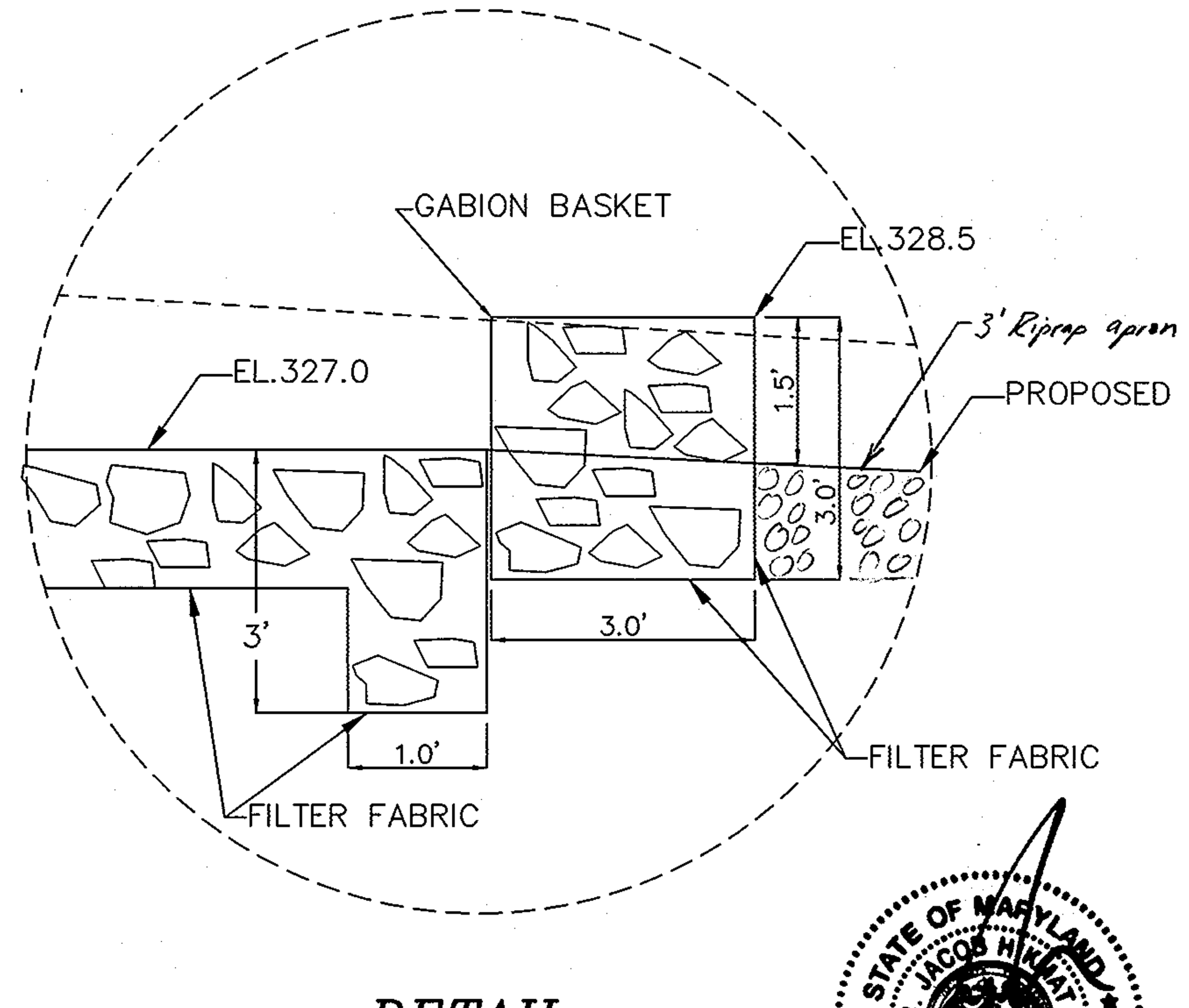
NTS



TEMPORARY STANDPIPE DETAIL

NTS

1. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
2. THE PERFORATED PORTION OF THE DRAW–DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
3. PROVIDE SUPPORT OF DRAW–DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW–DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.



DETAIL

NTS

DEVELOPER

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(410) 480-9105

STATE OF MARYLAND R. JACOB HIKMAT No. 17942 PROFESSIONAL ENGINEER

PURPOSE NOTE:
SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 11/24/08

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 11/20/08

project	date
2002-007	JUNE 2004
illustration	engineering
HSP	HSP
scale	approval
NTS	JBM

no.	description	date
1	SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL	10/27/08
1	REVISED PLAN TO REFLECT APPROVED F-06-081(ILCHESTER OAKS 2)	11/15/07

revisions

ILCHESTER OAKS

LOTS 1 THRU 22 & OPEN SPACES 23 THRU 26 & BULK PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

REVISED STORMWATER MANAGEMENT DETAILS

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F-04-36

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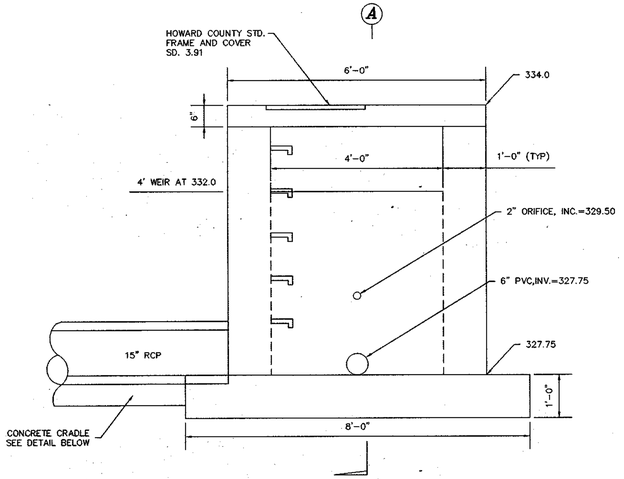
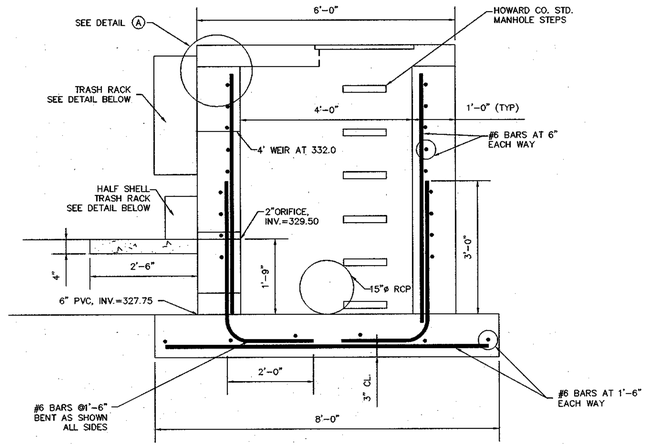
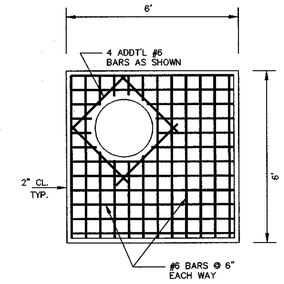


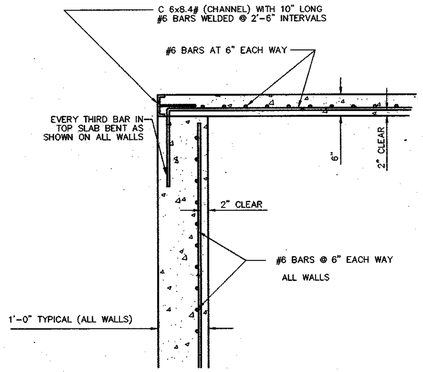
FRONT WALL ELEVATION
N.T.S.



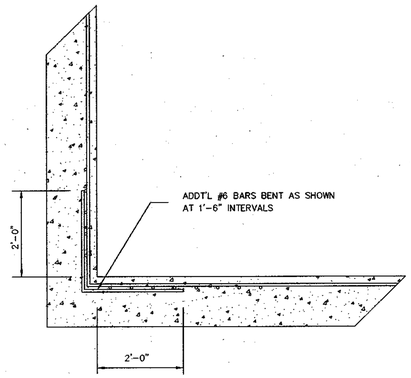
SECTION 1
N.T.S.



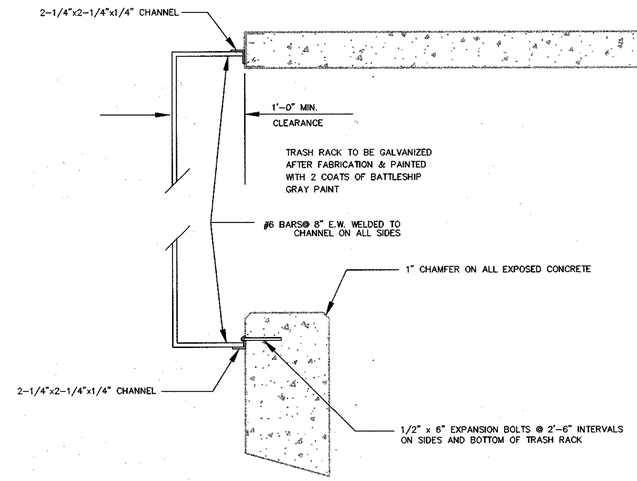
TOP SLAB DETAIL
N.T.S.



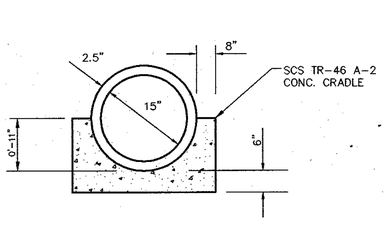
DETAIL A
N.T.S.



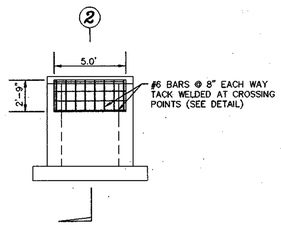
CORNER TREATMENT DETAIL
N.T.S.



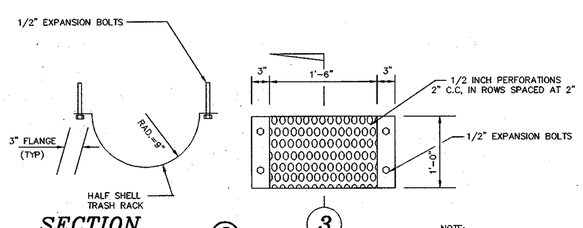
SECTION 2
N.T.S.



CONCRETE CRADLE
N.T.S.



TRASH RACK
N.T.S.



SECTION 3
HALF SHELL TRASH RACK
N.T.S.

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APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/10/04

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/30/04

STATE OF MARYLAND — JAMES B. MILDENBERG — REGISTERED PROFESSIONAL ENGINEER

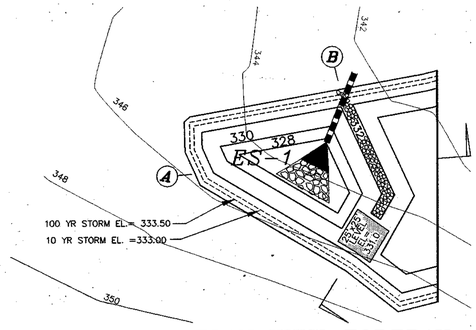
project 2002-007 | date JUNE 2004
illustration HSP | engineering HSP
scale NTS | approval JBM

no.	description	date
	revisions	

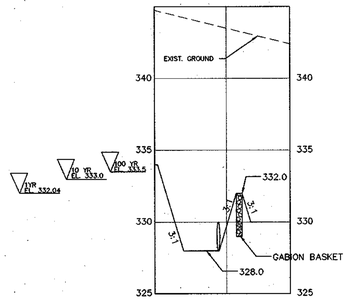
ILCHESTER OAKS
LOTS 1 THRU 22 & OPEN SPACES 23 THRU 26 & BULK PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT — HOWARD COUNTY, MARYLAND
STORMWATER MANAGEMENT DETAILS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

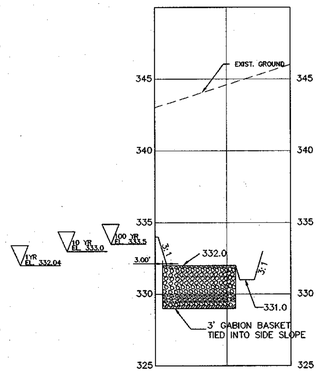
02-007\DWG\FINAL\SWMDETAILS2.DWG



PLAN VIEW–FOREBAY
SCALE: 1"=50'



SECTION A – FOREBAY
SCALE: HOR. 1"=50'
VER. 1"=5'



SECTION B – FOREBAY
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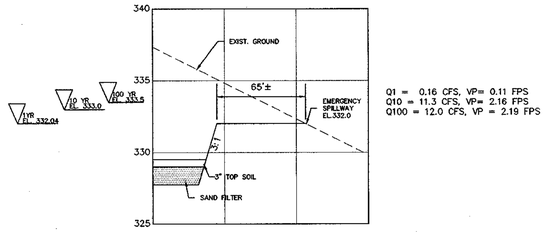
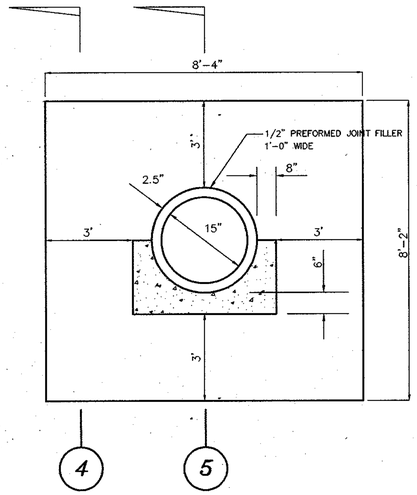
VER. 1"=5'

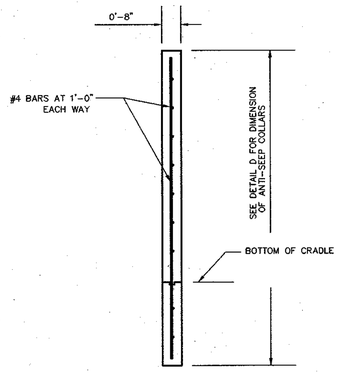


Q1 = 0.16 CFS, VP= 0.11 FPS
Q10 = 11.3 CFS, VP= 2.16 FPS
Q100 = 12.0 CFS, VP = 2.19 FPS

PROFILE – EMERGENCY SPILLWAY
SCALE: HOR. 1"=50'
VER. 1"=5'



ANTI-SEEP COLLAR DETAIL (D)
N.T.S.



SECTION (4)
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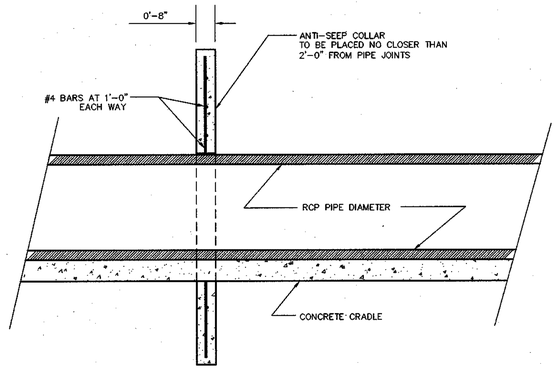

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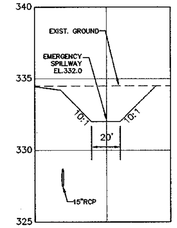

SECTION – EMERGENCY SPILLWAY
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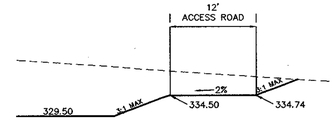
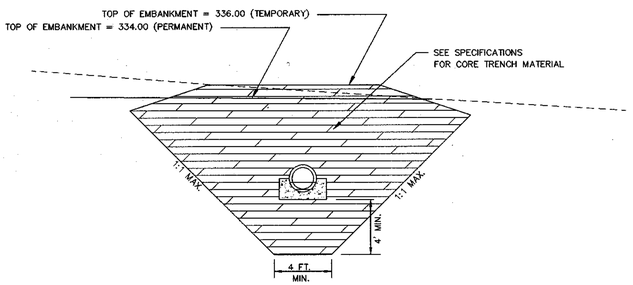
VER. 1"=5'

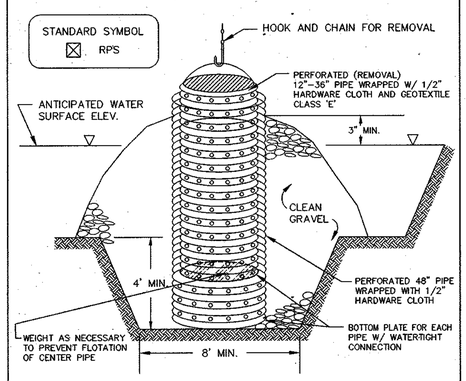


SECTION–ACCESS ROAD
N.T.S.



CORE TRENCH DETAIL
N.T.S.

DETAIL 20A - REMOVABLE PUMP STATION



ELEVATION (CUT AWAY)

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D-12-5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SPECIFICATIONS FOR REMOVABLE PUMP STATION

12.0 DEWATERING SPECIFICATIONS
FOR
REMOVABLE PUMPING STATION

Description of Practice

A temporary sturcture which is used to remove water from exacvated areas, sediment traps and basins.

Purpose

The pumping staton provides a device that filters sediment laden water for pumping to a suitable discharge area.

Conditions Where Practice Applies

The pumping station will be used to dewater sediment traps and basins for maintenance or removal.

Design Criteria

A design is not requierd but construction must conform to the general criteria outlined on the next page.

A perforated vertical stand pipe is placed inside another pipe. The outside pipe is then enveloped by a cone of washed 2" aggregate. Water is then pumped from the center of the inside pipe to a suitable discharge area.

Water pumped from the standpipe should discharge into a sediment trap, sediment basin of stabilized area. If water from the sump pit will be pumped directley to a storm drainage system, geotextile fabric and wire mesh must be wrapped around the standpipe to ensure clean water discharge.

Water pumped from the standpipe should discharge into a sediment trap, sediment basin or stabilized area.

Construction Specifications

1. the inner pipe shall be constructed by perforating a 12" to 36" diameter pipe with a watertight cap on the botton end and wrapping it with 1/2" hardware cloth and Geotexvile Class E. The perforations shall be 1/2"X6" slits or 1" diameter holes 6" on center.

2. The outer pipe shall be at least 4" larger in diameter than the inside pipe. Both the inner and outer pipes should extend 12" to 18" above the riser crest elevation, or anticipated high water elevation.

3. Filter material ranging from clean gravel (minimum fines) to #57 stone (1 1/2" maximum diameter) should be backfilled around the outer pipe.

4. The suction hose from the pump shall be placed inside the inner pipe to begin dewatering. the discharge hose shall be placed in a stabilized areas downslope of unstabilized area to prevent erosion. Meadow or wooded areas are preferred discharge locations, but storm drains and paved areas are acceptable.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE D-12-5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DEVELOPER
ELLICOTT CITY LAND HOLDING, INC.
C/O DONALD REUWER
8000 MAIN STREET
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APPROVED: DEPARTMENT OF PLANNING AND ZONNING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/10/04

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 7/30/04

project	date
2002-007	JUNE 2004
illustration	engineering
HSP	HSP
scale	approval
NTS	JBM

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ILCHESTER OAKS
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MD-378 POND SPECIFICATIONS (JANUARY 2000)

CONSTRUCTION SPECIFICATIONS

THESE SPECIFICATIONS ARE APPROPRIATE TO ALL PONDS WITHIN THE SCOPE OF THE STANDARD FOR PRACTICE MD-378. ALL REFERENCES TO ASTM AND AASHTO SPECIFICATIONS APPLY TO THE MOST RECENT VERSION.

SITE PREPARATION

AREAS DESIGNATED FOR BORROW AREAS, EMBANKMENT, AND STRUCTURAL WORKS SHALL BE CLEARED, GRUBBED AND STRIPPED OF TOPSOIL. ALL TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED. CHANNEL BANKS AND SHARP BREAKS SHALL BE SLOPED TO NO STEEPER THAN 1:1. ALL TREES SHALL BE CLEARED AND GRUBBED WITHIN 15 FEET OF THE TOE OF THE EMBANKMENT.

AREAS TO BE COVERED BY THE RESERVOIR WILL BE CLEARED OF ALL TREES, BRUSH, LOGS, FENCES, RUBBISH AND OTHER OBJECTIONABLE MATERIAL UNLESS OTHERWISE DESIGNATED ON THE PLANS. TREES, BRUSH, AND STUMPS SHALL BE CUT APPROXIMATELY LEVEL WITH THE GROUND SURFACE. FOR DRY STORM WATER MANAGEMENT PONDS, A MINIMUM OF A 25-FOOT RADIUS AROUND THE INLET STRUCTURE SHALL BE CLEARED.

ALL CLEARED AND GRUBBED MATERIAL SHALL BE DISPOSED OF OUTSIDE AND BELOW THE LIMITS OF THE DRAIN AND RESERVOIR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE. WHEN SPECIFIED, A SUFFICIENT QUANTITY OF TOPSOIL WILL BE STOCKPILED IN A SUITABLE LOCATION FOR USE ON THE EMBANKMENT AND OTHER DESIGNATED AREAS.

EARTH FILL

MATERIAL – THE FILL MATERIAL SHALL BE TAKEN FROM APPROVED DESIGNATED BORROW AREAS. IT SHALL BE FREE OF ROOTS, STUMPS, WOOD, RUBBISH, STONES GREATER THAN 6", FROZEN OR OTHER OBJECTIONABLE MATERIALS. FILL MATERIAL FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION CC, SC, CH, OR CL AND MUST HAVE AT LEAST 30% PASSING THE #200 SIEVE. CONSIDERATION MAY BE GIVEN TO THE USE OF OTHER MATERIALS IN THE EMBANKMENT IF DESIGNED BY A GEOTECHNICAL ENGINEER. SUCH SPECIAL DESIGNS MUST HAVE CONSTRUCTION SUPERVISED BY A GEOTECHNICAL ENGINEER. MATERIALS USED IN THE OUTER SHELL OF THE EMBANKMENT MUST HAVE THE CAPABILITY TO SUPPORT VEGETATION OF THE QUALITY REQUIRED TO PREVENT EROSION OF THE EMBANKMENT.

PLACEMENT – AREAS ON WHICH FILL IS TO BE PLACED SHALL BE SCARIFIED PRIOR TO PLACEMENT OF FILL. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8 INCH THICK (BEFORE COMPACTION) LAYERS WHICH ARE TO BE CONTINUOUS OVER THE ENTIRE LENGTH OF THE FILL. THE MOST PERMEABLE BORROW MATERIAL SHALL BE PLACED IN THE DOWNSTREAM PORTIONS OF THE EMBANKMENT. THE PRINCIPAL SPILLWAY MUST BE INSTALLED CONCURRENTLY WITH FILL PLACEMENT AND NOT EXCAVATED INTO THE EMBANKMENT.

COMPACTION – THE MOVEMENT OF THE HAULING AND SPREADING EQUIPMENT OVER THE FILL SHALL BE CONTROLLED SO THAT THE ENTIRE SURFACE OF EACH LIFT SHALL BE TRAVERSED BY NOT LESS THAN ONE TREAD TRACK OF HEAVY EQUIPMENT OR COMPACTION SHALL BE ACHIEVED BY A MINIMUM OF FOUR COMPLETE PASSES OF A SHEEPSFOOT, RUBBER TIRED OR VIBRATORY ROLLER. FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SUCH THAT THE REQUIRED DEGREE OF COMPACTION WILL BE OBTAINED WITH THE EQUIPMENT USED. THE FILL MATERIAL SHALL CONTAIN SUFFICIENT MOISTURE SO THAT IF FORMED INTO A BALL IT WILL NOT CRUMBLE, YET NOT BE SO WET THAT WATER CAN BE SQUEEZED OUT. WHEN REQUIRED BY THE REVIEWING AGENCY THE MINIMUM REQUIRED DENSITY SHALL NOT BE LESS THAN 95 % OF MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN 2 % OF THE OPTIMUM. EACH LAYER OF FILL SHALL BE COMPACTED AS NECESSARY TO OBTAIN THAT DENSITY, AND IS TO BE CERTIFIED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 (STANDARD PROCTOR).

CUT OFF TRENCH – THE CUTOFF TRENCH SHALL BE EXCAVATED INTO IMPERVIOUS MATERIAL ALONG OR PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE BOTTOM WIDTH OF THE TRENCH SHALL BE GOVERNED BY THE EQUIPMENT USED FOR EXCAVATION, WITH THE MINIMUM WIDTH BEING FOUR FEET. THE DEPTH SHALL BE AT LEAST FOUR FEET BELOW EXISTING GRADE OR AS SHOWN ON THE PLANS. THE SIDE SLOPES OF THE TRENCH SHALL BE 1 TO 1 OR FLATTER. THE BACKFILL SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY.

EMBANKMENT CORE – THE CORE SHALL BE PARALLEL TO THE CENTERLINE OF THE EMBANKMENT AS SHOWN ON THE PLANS. THE TOP WIDTH OF THE CORE SHALL BE A MINIMUM OF FOUR FEET. THE HEIGHT SHALL EXTEND UP TO AT LEAST THE 10 YEAR WATER ELEVATION OR AS SHOWN ON THE PLANS. THE SIDE SLOPES SHALL BE 1 TO 1 OR FLATTER. THE CORE SHALL BE COMPACTED WITH CONSTRUCTION EQUIPMENT, ROLLERS, OR HAND TAMPERS TO ASSURE MAXIMUM DENSITY AND MINIMUM PERMEABILITY. IN ADDITION, THE CORE SHALL BE PLACED CONCURRENTLY WITH THE OUTER SHELL OF THE EMBANKMENT.

STRUCTURAL BACKFILL

BACKFILL ADJACENT TO PIPES OR STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE ADJOINING FILL MATERIAL. THE FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO COMPACTED BY HAND TAMPERS OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL NEEDS TO FILL COMPLETELY ALL SPACES UNDER AND ADJACENT TO THE PIPE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A CONCRETE STRUCTURE OR PIPE, UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE STRUCTURE BACKFILL MAY BE FLOWABLE FILL MEETING THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 313 AS MODIFIED. THE MIXTURE SHALL HAVE A 100-200 PSI; 28 DAY UNCONFINED COMPRESSIVE STRENGTH. THE FLOWABLE FILL SHALL HAVE A MINIMUM PH OF 4.0 AND A MINIMUM RESISTIVITY OF 2,000 OHM-CM. MATERIAL SHALL BE PLACED SUCH THAT A MINIMUM OF 6" (MEASURED PERPENDICULAR TO THE OUTSIDE OF THE PIPE) OF FLOWABLE FILL SHALL BE UNDER (BEDDING), OVER AND, ON THE SIDES OF THE PIPE. IT ONLY NEEDS TO EXTEND UP TO THE SPRING LINE FOR RIGID CONDUITS. AVERAGE SLUMP OF THE FILL SHALL BE 7". TO ASSURE FLOWABILITY OF THE MATERIAL, ADEQUATE MEASURES SHALL BE TAKEN (SAND BAGS, ETC.). TO PREVENT FLOATING THE PIPE. WHEN USING FLOWABLE FILL, ALL METAL PIPE SHALL BE BITUMINOUS COATED. ANY ADJOINING SOIL FILL SHALL BE PLACED IN HORIZONTAL LAYERS NOT TO EXCEED FOUR INCHES IN THICKNESS AND COMPACTED BY HAND TAMPER OR OTHER MANUALLY DIRECTED COMPACTION EQUIPMENT. THE MATERIAL SHALL COMPLETELY FILL ALL VOIDS ADJACENT TO THE FLOWABLE FILL ZONE. AT NO TIME DURING THE BACKFILLING OPERATION SHALL DRIVEN EQUIPMENT BE ALLOWED TO OPERATE CLOSER THAN FOUR FEET, MEASURED HORIZONTALLY, TO ANY PART OF A STRUCTURE. UNDER NO CIRCUMSTANCES SHALL EQUIPMENT BE DRIVEN OVER ANY PART OF A STRUCTURE OR PIPE UNLESS THERE IS A COMPACTED FILL OF 24" OR GREATER OVER THE STRUCTURE OR PIPE. BACKFILL MATERIAL OUTSIDE THE STRUCTURAL BACKFILL (FLOWABLE FILL) ZONE SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT SPECIFIED FOR THE CORE OF THE EMBANKMENT OR OTHER EMBANKMENT MATERIALS.

PIPE CONDUIT

ALL PIPES SHALL BE CIRCULAR IN CROSS SECTION.

CORRUGATED METAL PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR CORRUGATED METAL PIPE:

I. MATERIALS – (POLYMER COATED STEEL PIPE) – STEEL PIPES WITH POLYMERIC COATINGS SHALL HAVE A MINIMUM COATING THICKNESS OF 0.01 INCH (10 MIL) ON BOTH SIDES OF THE PIPE. THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATIONS M-245 & M-246 WITH WATERTIGHT COUPLING BANDS OR FLANGES.

MATERIALS – (ALUMINUM COATED STEEL PIPE) – THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-274 WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM COATED STEEL PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT THE NEED FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ANY ALUMINUM COATING DAMAGED OR OTHERWISE REMOVED SHALL BE REPLACED WITH COLD APPLIED BITUMINOUS COATING COMPOUND. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT.

MATERIALS – (ALUMINUM PIPE) – THIS PIPE AND ITS APPURTENANCES SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-196 OR M-21 L WITH WATERTIGHT COUPLING BANDS OR FLANGES. ALUMINUM PIPE, WHEN USED WITH FLOWABLE FILL OR WHEN SOIL AND/OR WATER CONDITIONS WARRANT FOR INCREASED DURABILITY, SHALL BE FULLY BITUMINOUS COATED PER REQUIREMENTS OF AASHTO SPECIFICATION M-190 TYPE A. ALUMINUM SURFACES THAT ARE TO BE IN CONTACT WITH CONCRETE SHALL BE PAINTED WITH ONE COAT OF ZINC CHROMATE PRIMER OR TWO COATS OF ASPHALT. HOT DIP GALVANIZED BOLTS MAY BE USED FOR CONNECTIONS. THE PH OF THE SURROUNDING SOILS SHALL BE BETWEEN 4 AND 9.

2. COUPLING BANDS, ANTI-SEEP COLLARS, END SECTIONS, ETC., MUST BE COMPOSED OF THE SAME MATERIAL AND COATINGS AS THE PIPE. METALS MUST BE INSULATED FROM DISSIMILAR MATERIALS WITH USE OF RUBBER OR PLASTIC INSULATING MATERIALS AT LEAST 24 MILS IN THICKNESS.

3. CONNECTIONS – ALL CONNECTIONS WITH PIPES MUST BE COMPLETELY WATERTIGHT. THE DRAIN PIPE OR BARREL CONNECTION TO THE RISER SHALL BE WELDED ALL AROUND WHEN THE PIPE AND RISER ARE METAL. ANTI-SEEP COLLARS SHALL BE CONNECTED TO THE PIPE IN SUCH A MANNER AS TO BE COMPLETELY WATERTIGHT. DIMPLE BANDS ARE NOT CONSIDERED TO BE WATERTIGHT.

ALL CONNECTIONS SHALL USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BANDWIDTH. THE FOLLOWING TYPE CONNECTIONS ARE ACCEPTABLE FOR PIPES LESS THAN 24 INCHES IN DIAMETER: FLANGES ON BOTH ENDS OF THE PIPE WITH A CIRCULAR 3/8 INCH CLOSED CELL NEOPRENE GASKET, PRE-PUNCHED TO THE FLANGE BOLT CIRCLE, SANDWICHED BETWEEN ADJACENT FLANGES; A 12-INCH WIDE STANDARD LAP TYPE BAND WITH 12-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET; AND A 12-INCH WIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF ½ INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24 INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24 INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LUGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12 INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8 INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.

HELICALLY CORRUGATED PIPE SHALL HAVE EITHER CONTINUOUSLY WELDED SEAMS OR HAVE LOCK SEARNS WITH INTERNAL CAULKING OR A NEOPRENE BEAD.

4. BEDDING – THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

5. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

6. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

REINFORCED CONCRETE PIPE – ALL OF THE FOLLOWING CRITERIA SHALL APPLY FOR REINFORCED CONCRETE PIPE:

1. MATERIALS – REINFORCED CONCRETE PIPE SHALL HAVE BELL AND SPIGOT JOINTS WITH RUBBER GASKETS AND SHALL EQUAL OR EXCEED ASTM C-361.

2. BEDDING – REINFORCED CONCRETE PIPE CONDUITS SHALL BE LAID IN A CONCRETE BEDDING/CRADLE FOR THEIR ENTIRE LENGTH. THIS BEDDING/CRADLE SHALL CONSIST OF HIGH SLUMP CONCRETE PLACED UNDER THE PIPE AND UP THE SIDES OF THE PIPE AT LEAST 50 % OF ITS OUTSIDE DIAMETER WITH A MINIMUM THICKNESS OF 6 INCHES. WHERE A CONCRETE CRADLE IS NOT NEEDED FOR STRUCTURAL REASONS, FLOWABLE FILL MAY BE USED AS DESCRIBED IN THE "STRUCTURE BACKFILL" SECTION OF THIS STANDARD. GRAVEL BEDDING IS NOT PERMITTED.

3. LAYING PIPE – BELL AND SPIGOT PIPE SHALL BE PLACED WITH THE BELL END UPSTREAM. JOINTS SHALL BE MADE IN ACCORDANCE WITH RECOMMENDATIONS OF THE MANUFACTURER OF THE MATERIAL. AFTER THE JOINTS ARE SEALED FOR THE ENTIRE LINE, THE BEDDING SHALL BE PLACED SO THAT ALL SPACES UNDER THE PIPE ARE FILLED. CARE SHALL BE EXERCISED TO PREVENT ANY DEVIATION FROM THE ORIGINAL LINE AND GRADE OF THE PIPE. THE FIRST JOINT MUST BE LOCATED WITHIN 4 FEET FROM THE RISER.

4. BACKFILLING SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

PLASTIC PIPE – THE FOLLOWING CRITERIA SHALL APPLY FOR PLASTIC PIPE:

1. MATERIALS – PVC PIPE SHALL BE PVC-1120 OR PVC-1220 CONFORMING TO ASTM D1785 OR ASTM D-2241 CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE) PIPE, COUPLINGS AND FITTINGS SHALL CONFORM TO THE FOLLOWING: 4" - 10" INCH PIPE SHALL MEET THE REQUIREMENTS OF AASHTO M252 TYPE S, AND 12" THROUGH 24" INCH SHALL MEET THE REQUIREMENTS OF AASHTO M294 TYPE S.

2. JOINTS AND CONNECTIONS TO ANTI-SEEP COLLARS SHALL BE COMPLETELY WATERTIGHT.

3. BEDDING -THE PIPE SHALL BE FIRMLY AND UNIFORMLY BEDDED THROUGHOUT ITS ENTIRE LENGTH. WHERE ROCK OR SOFT, SPONGY OR OTHER UNSTABLE SOIL IS ENCOUNTERED, ALL SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH SUITABLE EARTH COMPACTED TO PROVIDE ADEQUATE SUPPORT.

4. BACKFILL SHALL CONFORM TO "STRUCTURE BACKFILL."

5. OTHER DETAILS (ANTI-SEEP COLLARS, VALVES, ETC.) SHALL BE AS SHOWN ON THE DRAWINGS.

DRAINAGE DIAPHRAGMS – WHEN A DRAINAGE DIAPHRAGM IS USED, A REGISTERED PROFESSIONAL ENGINEER WILL SUPERVISE THE DESIGN AND CONSTRUCTION INSPECTION.

CONCRETE

CONCRETE SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 414, MIX NO. 3.

ROCK RIPRAP

ROCK RIPRAP SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 311.

GEOTEXTILE SHALL BE PLACED UNDER ALL RIPRAP AND SHALL MEET THE REQUIREMENTS OF MARYLAND DEPARTMENT OF TRANSPORTATION, STATE HIGHWAY ADMINISTRATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, SECTION 921.09, CLASS C.

CARE OF WATER DURING CONSTRUCTION

ALL WORK ON PERMANENT STRUCTURES SHALL BE CARRIED OUT IN AREAS FREE FROM WATER. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL TEMPORARY DIKES, LEVEES, COFFERDAMS, DRAINAGE CHANNELS, AND STREAM DIVERSIONS NECESSARY TO PROTECT THE AREAS TO BE OCCUPIED BY THE PERMANENT WORKS. THE CONTRACTOR SHALL ALSO FURNISH, INSTALL, OPERATE, AND MAINTAIN ALL NECESSARY PUMPING AND OTHER EQUIPMENT REQUIRED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE WORK AND FOR MAINTAINING THE EXCAVATIONS, FOUNDATION, AND OTHER PARTS OF THE WORK FREE FROM WATER AS REQUIRED OR DIRECTED BY THE ENGINEER FOR CONSTRUCTING EACH PART OF THE WORK. AFTER HAVING SERVED THEIR PURPOSE, ALL TEMPORARY PROTECTIVE WORKS SHALL BE REMOVED OR LEVELED AND GRADED TO THE EXTENT REQUIRED TO PREVENT OBSTRUCTION IN ANY DEGREE WHATSOEVER OF THE FLOW OF WATER TO THE SPILLWAY OR OUTLET WORKS AND SO AS NOT TO INTERFERE IN ANY WAY WITH THE OPERATION OR MAINTENANCE OF THE STRUCTURE. STREAM DIVERSIONS SHALL BE MAINTAINED UNTIL THE FULL FLOW CAN BE PASSED THROUGH THE PERMANENT WORKS. THE REMOVAL OF WATER FROM THE REQUIRED EXCAVATION AND THE FOUNDATION SHALL BE ACCOMPLISHED IN A MANNER AND TO THE EXTENT THAT WILL MAINTAIN STABILITY OF THE EXCAVATED SLOPES AND BOTTOM REQUIRED EXCAVATIONS AND WILL ALLOW SATISFACTORY PERFORMANCE OF ALL CONSTRUCTION OPERATIONS. DURING THE PLACING AND COMPACTING OF MATERIAL IN REQUIRED EXCAVATIONS, THE WATER LEVEL AT THE LOCATIONS BEING REFILLED SHALL BE MAINTAINED BELOW THE BOTTOM OF THE EXCAVATION AT SUCH LOCATIONS WHICH MAY REQUIRE DRAINING THE WATER SUMPS FROM WHICH THE WATER SHALL BE PUMPED.

STABILIZATION

ALL BORROW AREAS SHALL BE GRADED TO PROVIDE PROPER DRAINAGE AND LEFT IN A SIGHTLY CONDITION ALL EXPOSED SURFACES OF THE EMBANKMENT, SPILLWAY, SPOIL AND BORROW AREAS, AND BERMS SHALL BE STABILIZED BY SEEDING, LIMING, FERTILIZING AND MULCHING IN ACCORDANCE WITH THE NATURAL RESOURCES CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS FOR CRITICAL AREA PLANTING (MD-342) OR AS SHOWN ON THE ACCOMPANYING DRAWINGS.

EROSION AND SEDIMENT CONTROL

CONSTRUCTION OPERATIONS WILL BE CARRIED OUT IN SUCH A MANNER THAT EROSION WILL BE CONTROLLED AND WATER AND AIR POLLUTION MINIMIZED. STATE AND LOCAL LAWS CONCERNING POLLUTION ABATEMENT WILL BE FOLLOWED. CONSTRUCTION PLANS SHALL DETAIL EROSION AND SEDIMENT CONTROL MEASURES.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BY PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA. SCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378), THE POND OWNER(S) AND THE HEIRS SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

OPERATION AND MAINTENENCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEM

1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATION AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
7. WHEN WATER PONDS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 72 HOURS, THE TOP FEW INCHES OF DISCOLORED MATERIAL SHALL BE REPLACED WITH FRESH MATERIAL. PROPER CLEANING AND DISPOSAL OF THE REMOVED MATERIAL AND LIQUID MUST BE FOLLOWED BY THE OWNER.
8. A LOG BOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOG BOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITCH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

GEOTECHNICAL RECOMENDATIONS:

THE AREA OF THE PROPOSED SWM FACILITY SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOFROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE.

FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATIONS 378 SOILS CONSIDERED SUITABLE FOR CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH OR CL.

IT IS OUR PROFESSIONAL OPINION THAT IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE A FINE-GRAINED SOIL, INCLUDING SILT (ML) WITH A PLASTICITY INDEX OF 10 OR MORE CAN BE UTILIZED FOR THE CENTER OF THE EMBANKMENT AND CORE TRENCH. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH MD SCS 178 SPECIFICATIONS.

MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION
DETAIL 4.2 : UTILITY CROSSING

I. DESCRIPTION

THE WORK SHALL CONSIST OF INSTALLING EROSION CONTROL DEVICES IN AND ADJACENT TO THE CONSTRUCTION OF UTILITY CROSSING.

II. INSTALLATION GUIDELINES

ALL EROSION AND SEDIMENT CONTROL DEVICES, INCLUDING DEWATERING BASINS, SHOULD BE IMPLEMENTED AS THE FIRST ORDER OF BUSINESS ACCORDING TO A PLAN APPROVED BY THE WMA OR LOCAL AUTHORITY. (SEE THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.) THE PROPOSED CONSTRUCTION SEQUENCE IS AS FOLLOWS (REFER TO DETAIL 4.2) :

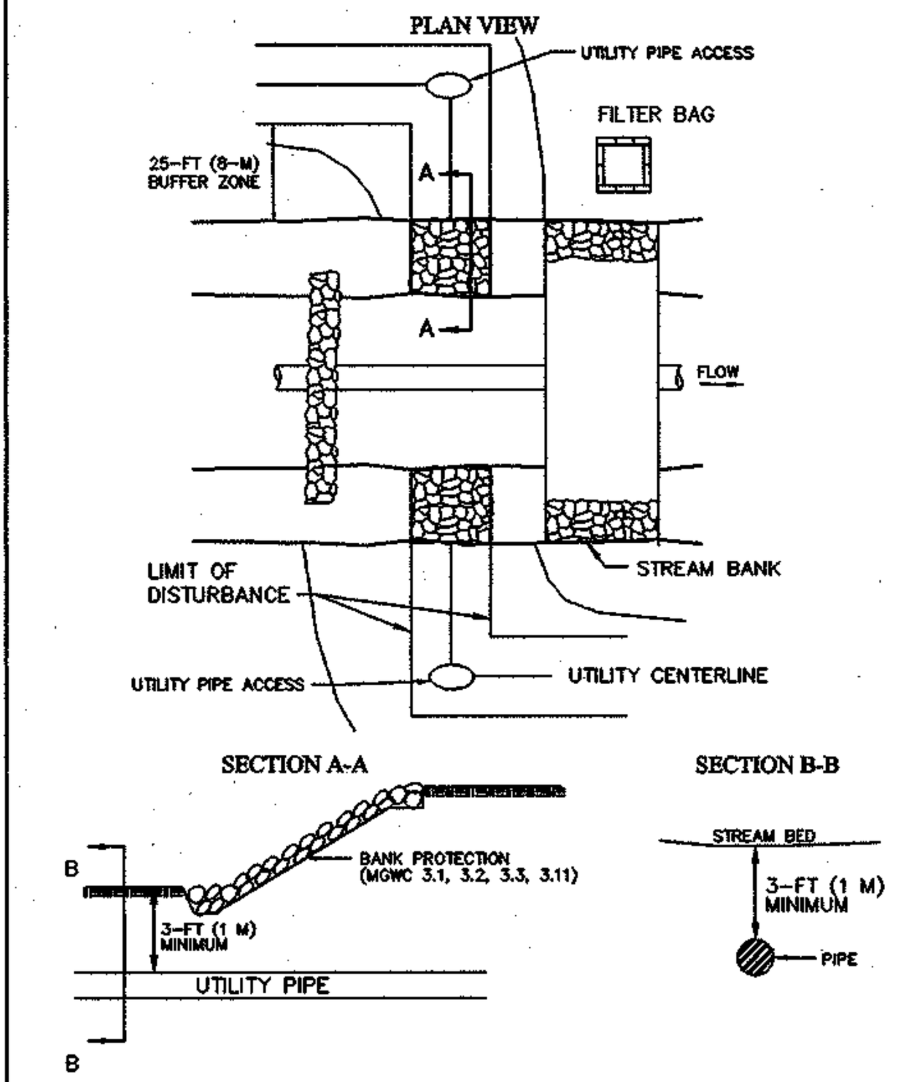
1. THE CONTRACTOR SHOULD INSURE THAT A CONTINUOUS PERIMETER CONTROL BARRIER IS IN PLACE TO MINIMIZE THE AMOUNT OF POLLUTANTS ENTERING THE FLOW. A DIVERSION PIPE AS SHOWN IN MGWC 1.4 : DIVERSION PIPE OR OTHER MEASURE SHOULD BE INSTALLED AND SANDBAG OR STONE BARRIERS AS SHOWN IN MGWC 1.5 : SANDBAG/ STONE DIVERSION SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS TO DIVERT THE STREAMFLOW.
2. EXCAVATED TOPSOIL AND SUBSOIL SHOULD BE KEPT SEPARATE, PLACED ON THE UPLAND SIDE OF THE EXCAVATION, AND REPLACED IN THEIR NATURAL ORDER.
3. ALL CONSTRUCTION SHOULD TAKE PLACE DURING STREAM LOW FLOWS. THE LENGTH OF CONSTRUCTION TIME SHOULD BE LIMITED TO A MAXIMUM OF 5 CONSECUTIVE DAYS FOR EACH CROSSING.
4. ALL UTILITY CROSSINGS SHOULD BE PLACED A MINIMUM OF 3 FEET (1 METER) BENEATH THE STREAM BED UNLESS AN ALTERNATIVE SECTION IS SPECIFICALLY APPROVED BY THE WMA. FOR INSTANCES WHERE A 3-FOOT COVER IS NOT VIABLE, TWO ALTERNATE STABILIZATION OPTIONS ARE GIVEN IN THE DETAIL 4.2. A LOW FLOW CHANNEL SHALL BE CONSTRUCTED THROUGH ALL RIPRAP PLACEMENTS ACROSS THE STREAM BED.
5. THE STREAM SHOULD BE DIVERTED BY AN APPROVED TEMPORARY STREAM DIVERSION. THE CONSTRUCTION AREA SHOULD BE DEWATERED, AND ANY DISTURBED BANKS SHOULD BE STABILIZED. THE CONTRACTOR MAY ELECT TO CONSTRUCT THE UTILITY CROSSING IN TWO STAGES. IN THIS CASE, A WMA APPROVED FLOW BARRIER MAY BE CONSTRUCTED TO KEEP THE CONSTRUCTION AREA DRY.
6. ONCE THE CROSSING IS COMPLETED, THE DIVERSION SHOULD BE REMOVED FROM UPSTREAM TO DOWNSTREAM. SEDIMENT CONTROL DEVICES, INCLUDING PERIMETER EROSION CONTROLS, ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN AND THE INSPECTION AUTHORITY APPROVES THEIR REMOVAL.

STREAM CLOSURE DATES FOR FISH SPAWNING OR MIGRATION WITHIN WATERWAYS ARE AS FOLLOWS:

USE I AND IP	MARCH 1 – JUNE 15
USE II	JUNE 1 – SEPTEMBER 30 AND DECEMBER 16 – MARCH 14
USE III AND IIIP	OCTOBER 1 – APRIL 30
USE IV	MARCH 1 – MAY 31
SAV (ALL FLOWING STREAMS)	APRIL 15 – OCTOBER 15

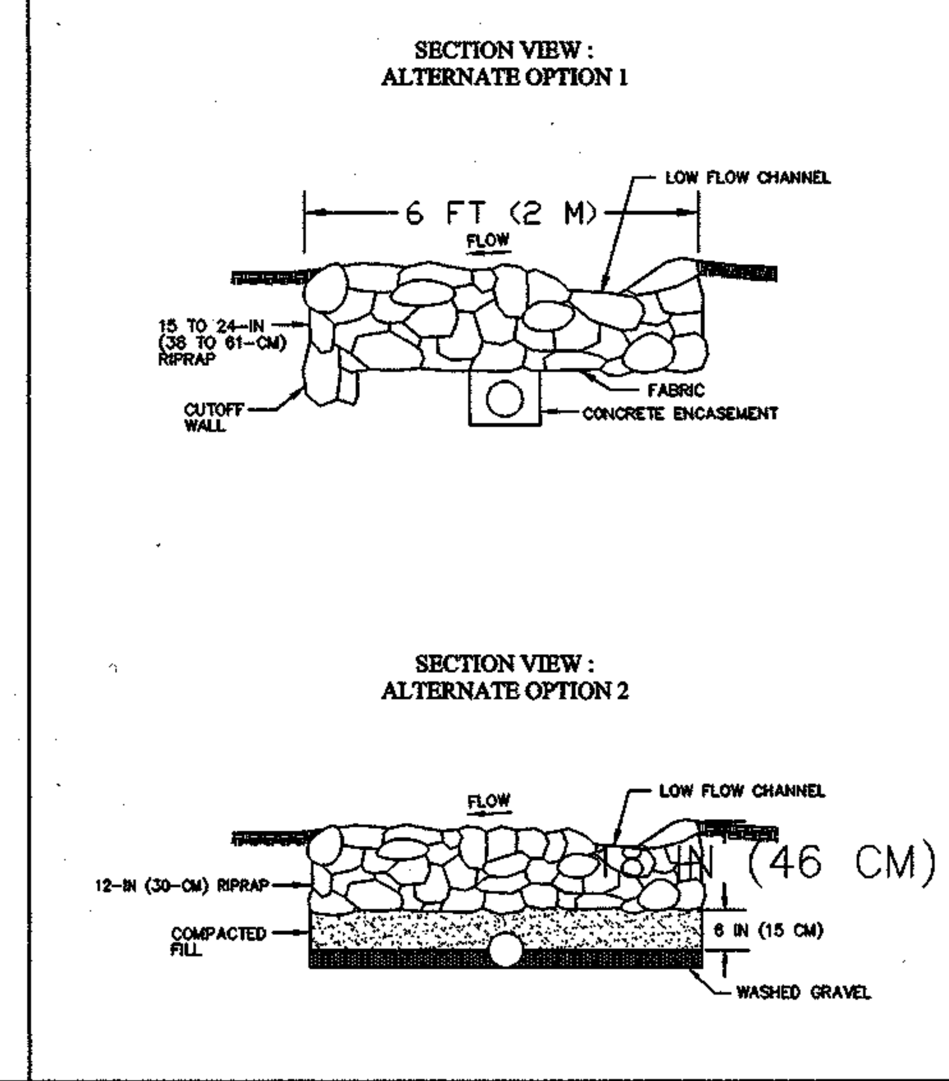
STREAM CROSSINGS	REVISED NOVEMBER 2000 PAGE 4.2-1	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION
DETAIL 4.2(a) : UTILITY CROSSING

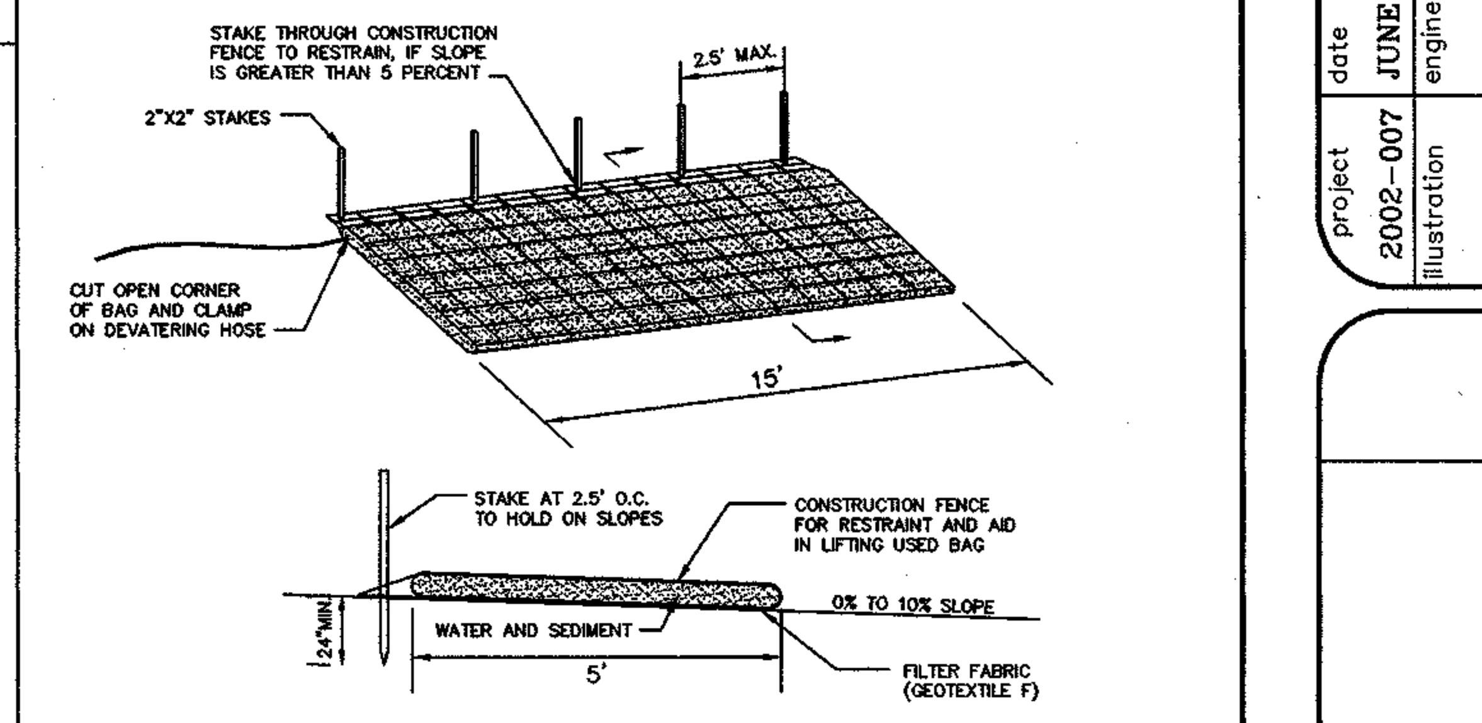


STREAM CROSSINGS	REVISED NOVEMBER 2000 PAGE 4.2-2	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION
DETAIL 4.2(b) : UTILITY CROSSING



STREAM CROSSINGS	REVISED NOVEMBER 2000 PAGE 4.2-3	MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

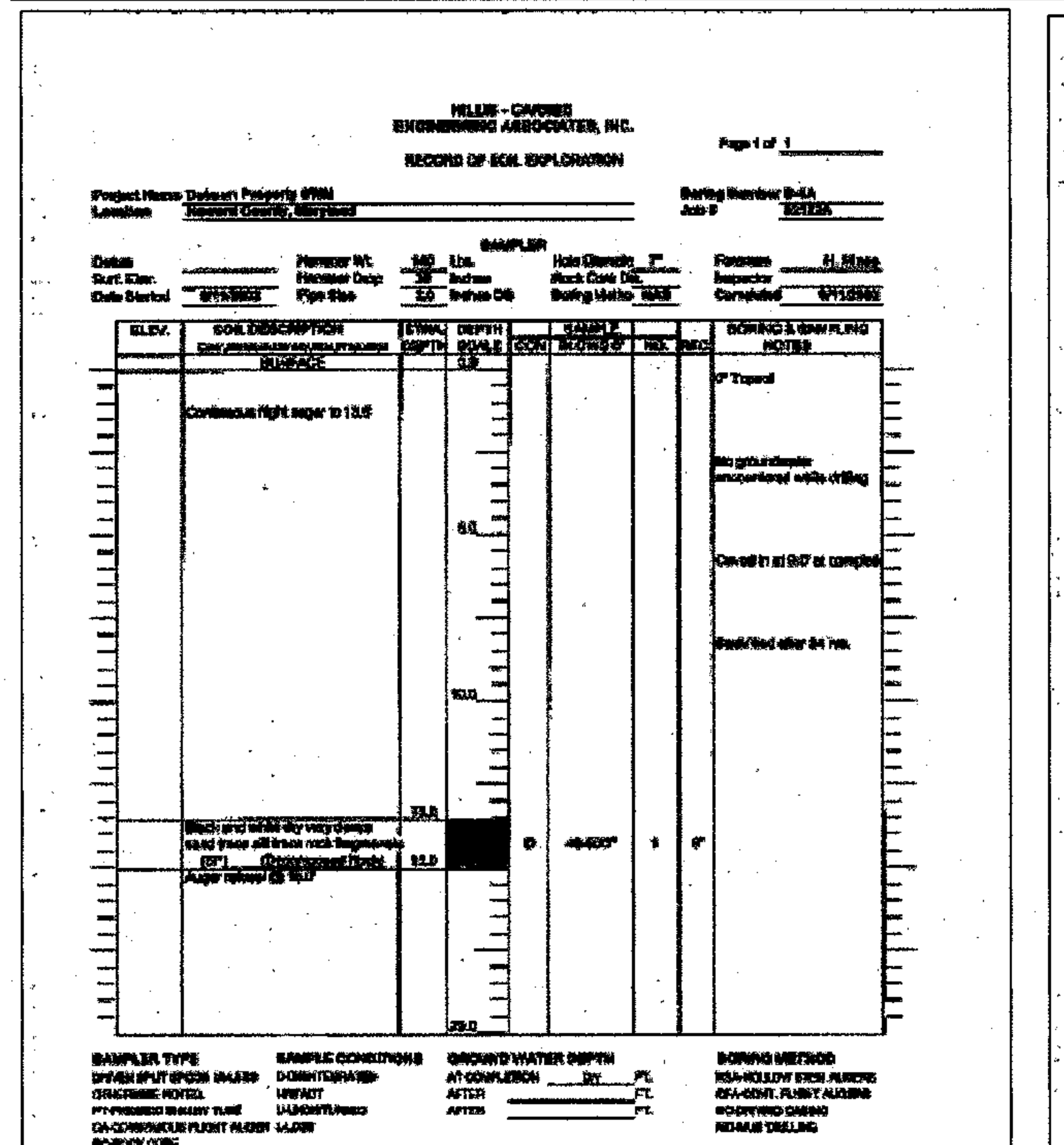


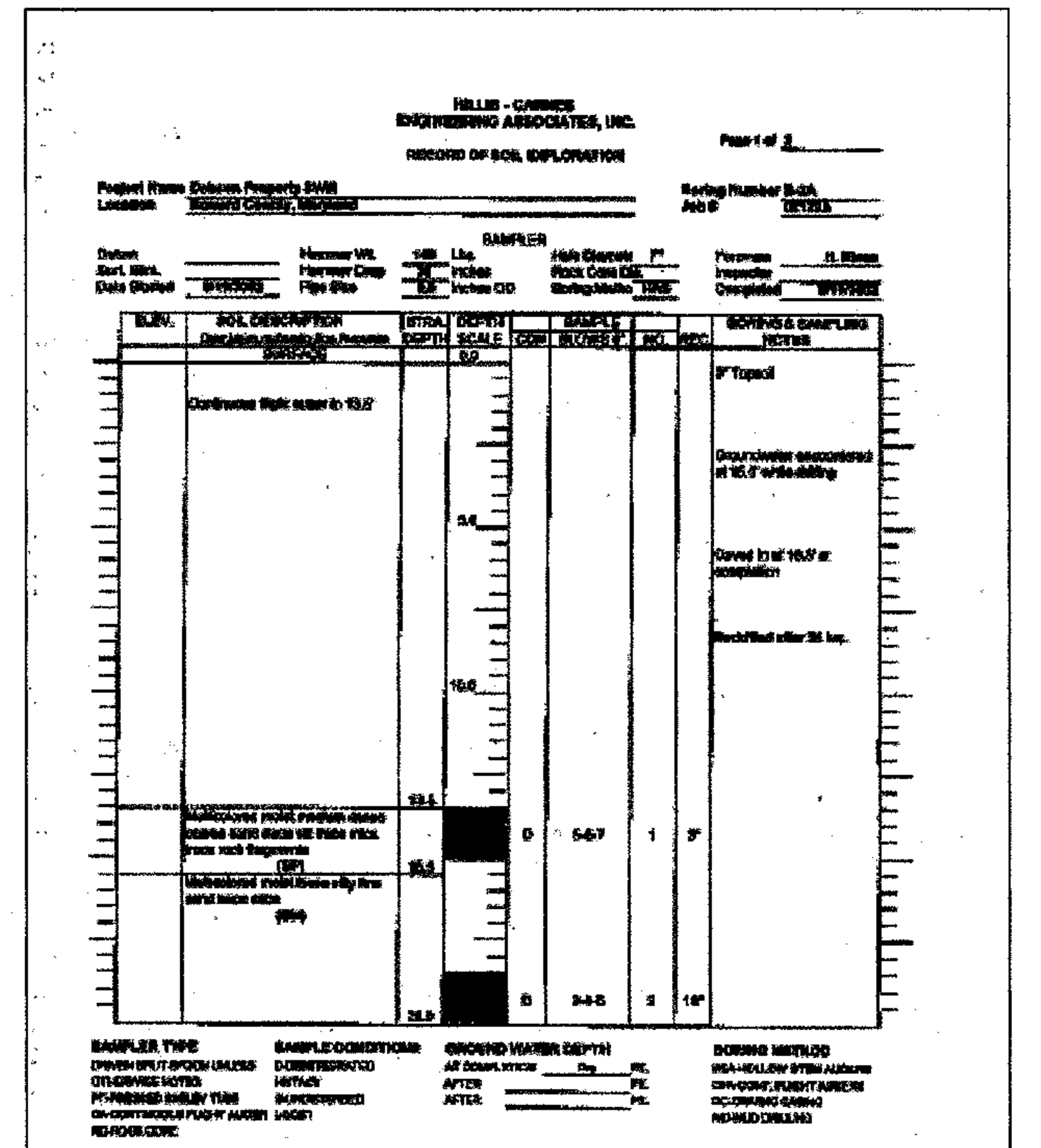
NOTES :

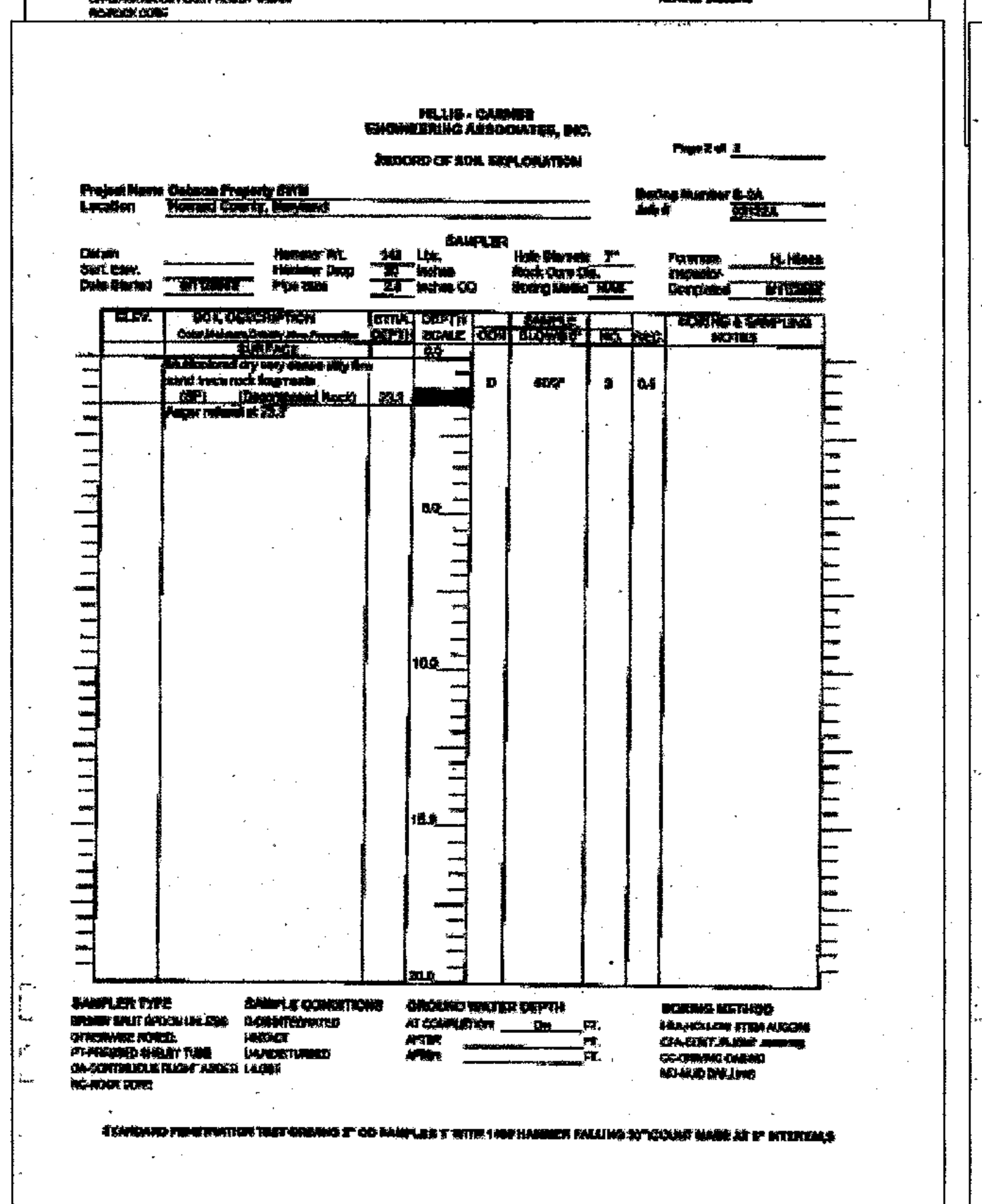
1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WIDTH AND LENGTH SHALL BE AS SHOWN.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISCHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM.
5. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT. SEDIMENT FROM BAG SHALL NOT BE SPREAD IN AN UPLAND AREA.
6. FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS F :

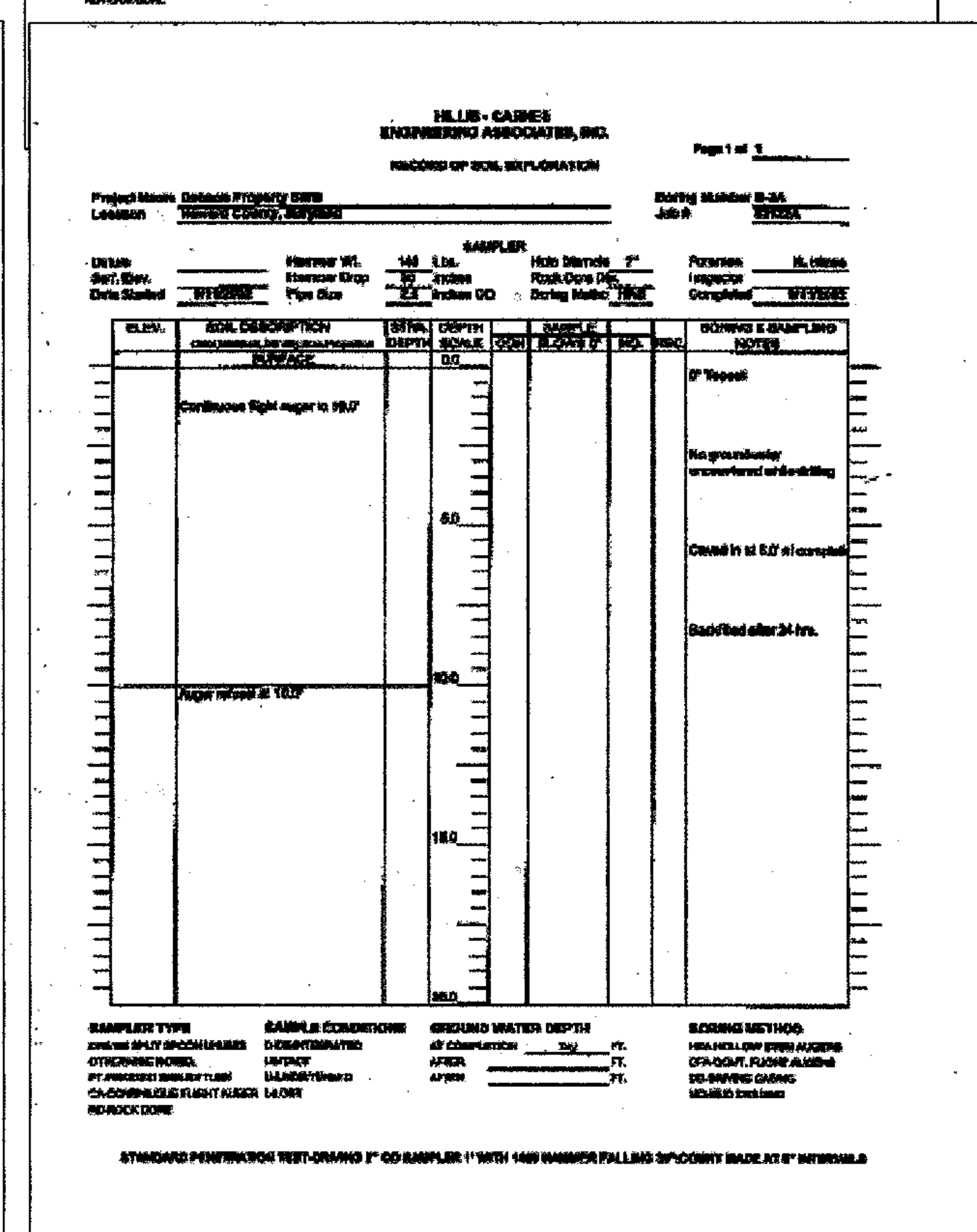
TENSILE STRENGTH	50 LBS/IN (MIN.)	TEST : MSMT 509
TENSILE MODULUS	20 LBS/IN (MIN.)	TEST : MSMT 509
FLOW RATE	0.3 GAL FT^2/MINUTE (MAX.)	TEST : MSMT 322
FILTERING EFFICIENCY	75% (MIN.)	TEST : MSMT 322

FILTER BAG (FB)
TEMPORARY EROSION CONTROL MEASURE









BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAINS

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER THAT DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NON-TIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES : ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS & WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM :

   USE I WATERS : IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER MANAGEMENT RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF ACQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

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."

[signature] 6/17/04
SIGNATURE OF DEVELOPER — DATE
Donald E. Kelner Jr
PRINTED NAME OF DEVELOPER

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."

[signature] 6/17/04
SIGNATURE OF ENGINEER — DATE
JOHN B. MILDENBERG
PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

Jim Myers / GS 7/6/04
USDA - NATURAL RESOURCE CONSERVATION SERVICE — DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

[signature] 7/6/04
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

[signature] HS 7-27-04
CHIEF BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

Cindy Hamilton JA 8/10/04
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 7/30/04
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

DEVELOPER

ELLICOTT CITY LAND HOLDING, INC.
C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480-9105

project	date
2002-007	JUNE 2004
illustration	engineering
HSP	HSP
scale	approval
NTS	JBM

no.	description	date
	revisions	

ILCHESTER OAKS
LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SWM SPECIFICATIONS AND SOIL BORINGS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

F-04-36

02-007\DWG\FINAL\007-BORINGS.DWG

SCHEDULE D : STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF PERIMETER	106 LF (PERIMETER A)	209 LF (PERIMETER B)	89 LF (PERIMETER C)	172 LF (PERIMETER D)	576 LF (TOTAL)
CREDIT FOR EXISTING VEGETATION (NO, YES AND LINEAR FEET)	NO	NO	NO	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	N/A	N/A	N/A	N/A	N/A
NUMBER OF TREES REQUIRED SHADE TREES EVERGREEN TREES	2 SHADE TREES 3 EVERGREEN TREES	4 SHADE TREES 5 EVERGREEN TREES	2 SHADE TREES 2 EVERGREEN TREES	3 SHADE TREES 4 EVERGREEN TREES	11 SHADE TREES 14 EVERGREEN TREES
NUMBER OF TREES PROVIDED SHADE TREES EVERGREEN TREES SUBSTITUTION TREES (SMALL DECIDUOUS TREES)	0 SHADE TREES 3 EVERGREEN TREES 4 SMALL TREES	4 SHADE TREES 5 EVERGREEN TREES 0 SMALL TREES	2 SHADE TREES 2 EVERGREEN TREES 0 SMALL TREES	3 SHADE TREES 4 EVERGREEN TREES 0 SMALL TREES	9 SHADE TREES 14 EVERGREEN TREES 4 SMALL TREES

NOTE: THIS DRAWING IS TO BE USED FOR LANDSCAPE PLAN PURPOSES ONLY.

NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING (38 SHADE TREES, 22, SMALL DECIDUOUS/ ORNAMENTAL TREES, 20 EVERGREENS, 18 PRIVATE STREET TREES) HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $23,100.00.

STREET TREE CALCULATIONS

TALBOT'S LANDING ROAD - 325 LF/30 = 11
AMBROSIA DRIVE (PUBLIC ROAD) - 1492 LF/30 = 50
AMBROSIA DRIVE (PRIVATE ACCESS PLACE) - 706 LF/40 = 18

TOTAL TREES REQUIRED = 61 SMALL STREET TREES
18 LARGE STREET TREES

TOTAL TREES PROVIDED = 61 SMALL STREET TREES
18 LARGE STREET TREES

STREET TREE PLANTING SCHEDULE

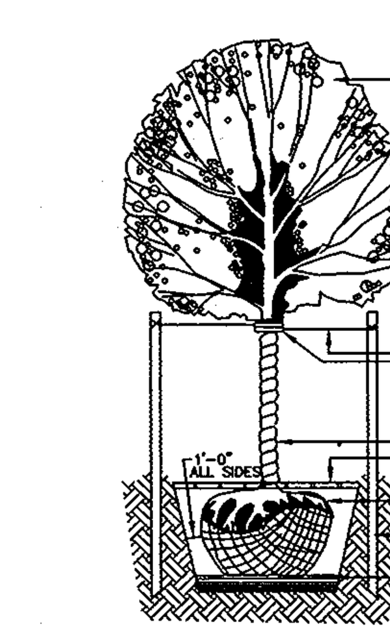
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
50		ACER CAMPESTRE	HEDGE MAPLE	2 1/2" CAL.
11		PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	2 1/2" CAL.

TOTAL
61 PUBLIC STREET TREES (SMALL STREET TREES)

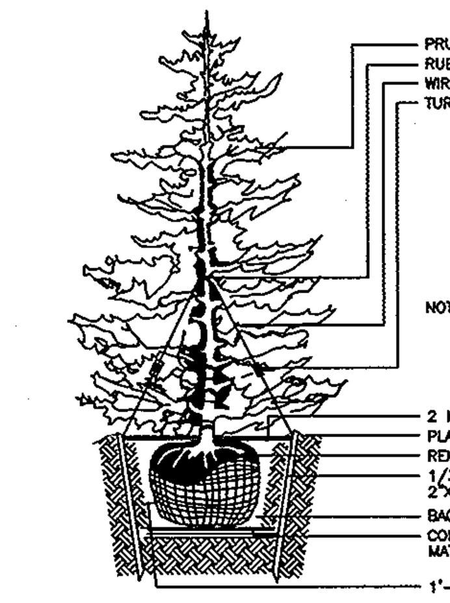
PERIMETER LANDSCAPE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
17		ACER CAMPESTRE	HEDGE MAPLE	1 1/2" - 2" CAL.
56		ACER SACCHARUM 'GREEN MOUNTAIN'	GREEN MOUNTAIN SUGAR MAPLE	2 1/2" - 3" CAL.
20		PINUS THUNBERGIANA	JAPANESE BLACK PINE	6' - 8' HT.
5		PRUNUS SERRULATA 'KWANZAN'	KWANZAN CHERRY	1 1/2" - 2" CAL.

TOTAL
98 TREES(38 SHADE TREES, 22 SMALL DECIDUOUS TREES, 20 EVERGREENS, 18 PRIVATE STREET TREES)



TYPICAL DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

LEGEND

- DENOTES 15-24.99% SLOPES.
- DENOTES WETLANDS
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)
- FOREST CONSERVATION SIGNAGE
- TPF — TREE PROTECTIVE FENCING
- SPECIMEN TREE

SCHEDULE A : PERIMETER LANDSCAPED EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES						
LANDSCAPE TYPE	A (PERIMETER 1)	A (PERIMETER 2)	A (PERIMETER 3)	A (PERIMETER 4)	A (PERIMETER 5)	A (PERIMETER 6)	A (PERIMETER 7)
LINEAR FEET OF PERIMETER	252.80 LF	184.65 LF	101.77 LF	83.61 LF	255.36 LF	514.36 LF	870.39 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	NO	NO	NO	YES, 342 LF OF EXISTING TREES	YES, 870.39 LF OF EXISTING TREES
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES	4 SHADE TREES 0 EVERGREEN TREES	3 SHADE TREES 0 EVERGREEN TREES	2 SHADE TREES 0 EVERGREEN TREES	1 SHADE TREE 0 EVERGREEN TREES	4 SHADE TREES 0 EVERGREEN TREES	3 SHADE TREES 0 EVERGREEN TREES	0 SHADE TREES 0 EVERGREEN TREES
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SUBSTITUTION TREES (SMALL DECIDUOUS TREES)	4 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	3 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	2 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	1 SHADE TREE 0 EVERGREEN TREES 0 SMALL TREES	4 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	3 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	0 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES

CATEGORY	ADJACENT TO PERIMETER PROPERTIES				ADJACENT TO ROADWAYS		
LANDSCAPE TYPE	A (PERIMETER 8)	B (PERIMETER 8)	A (PERIMETER 9)	B (PERIMETER 9)	A (PERIMETER 10)	B (PERIMETER 11)	N/A (PERIMETER 11)	TOTAL
LINEAR FEET OF PERIMETER	368.55 LF	172 LF	289.00 LF	106 LF	402.34 LF	230.20 LF	139.28 LF	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	YES, 140 LF OF EXISTING TREES	YES, 172 LF OF SWM LANDSCAPING	NO	YES, 106 LF OF SWM LANDSCAPING	NO	NO	NO	
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES	4 SHADE TREES 0 EVERGREEN TREES	0 SHADE TREES 0 EVERGREEN TREES	5 SHADE TREES 0 EVERGREEN TREES	0 SHADE TREES 0 EVERGREEN TREES	7 SHADE TREES 0 EVERGREEN TREES	5 SHADE TREES 6 EVERGREEN TREES	0 SHADE TREES 0 EVERGREEN TREES	38 SHADE TREES 6 EVERGREEN TREES
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SUBSTITUTION TREES (SMALL DECIDUOUS TREES)	4 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	0 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	5 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	0 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	3 SHADE TREES 0 EVERGREEN TREES 8 SMALL TREES	0 SHADE TREES 6 EVERGREEN TREES 10 SMALL TREES	0 SHADE TREES 0 EVERGREEN TREES 0 SMALL TREES	29 SHADE TREES 6 EVERGREEN TREES 18 SMALL TREES

DEVELOPER'S/OWNER'S CERTIFICATE

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE IN ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE, AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

NAME [signature] DATE 10/27/08

STATE OF MARYLAND R. JACOB HIKMAT No. 17942 PROFESSIONAL ENGINEER

DEVELOPER

ELLICOTT CITY LAND HOLDING, INC.
C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480-9105

PURPOSE NOTE:
SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

CHIEF, DIVISION OF LAND DEVELOPMENT [signature] DATE 11/24/08

CHIEF, DEVELOPMENT ENGINEERING DIVISION [signature] DATE 11/20/08

project	date
2002-007	JUNE 2004
illustration	engineering
HSP/SJD	SJD
scale	approval
1"=50'	

no.	description	date
2	SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL	10/27/08
1	REVISED PLAN TO REFLECT APPROVED F-06-081(ILCHESTER OAKS 2)	11/15/07
	revisions	

ILCHESTER OAKS

LOTS 1 THRU 22, OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL "A"
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

REVISED LANDSCAPE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax.

F-04-36

02-007\DWG\FINAL\007-final-LP.dwg

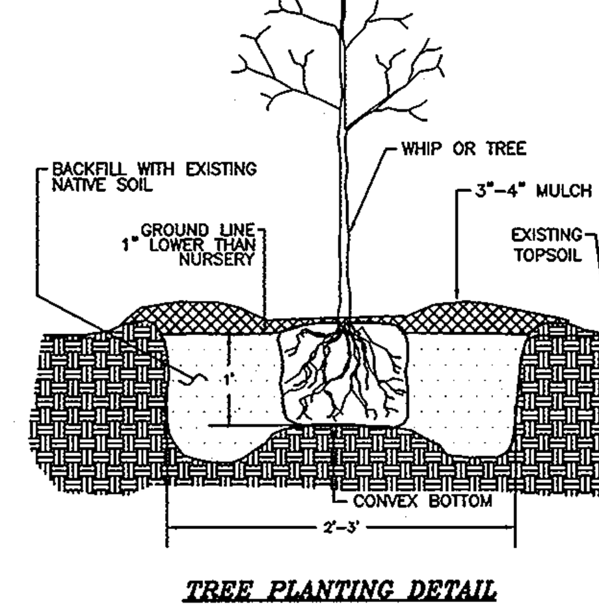
NOTE: THIS DRAWING IS TO BE USED FOR FOREST CONSERVATION PLAN PURPOSES ONLY.

NOTES:

1. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION HAVE BEEN MET BY ON-SITE RETENTION OF 1.97 ACRES AND REFORESTATION OF 0.26 ACRES. FINANCIAL SURETY FOR THE 1.97 ACRES (85,813.2 SQ. FT.) OF RETENTION IN THE AMOUNT OF $17,162.64 AND 0.26 ACRES (11,325.6 SQ. FT.) OF REFORESTATION IN THE AMOUNT OF $5,662.80 HAS BEEN POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF $22,825.44.

FOREST CONSERVATION DATA

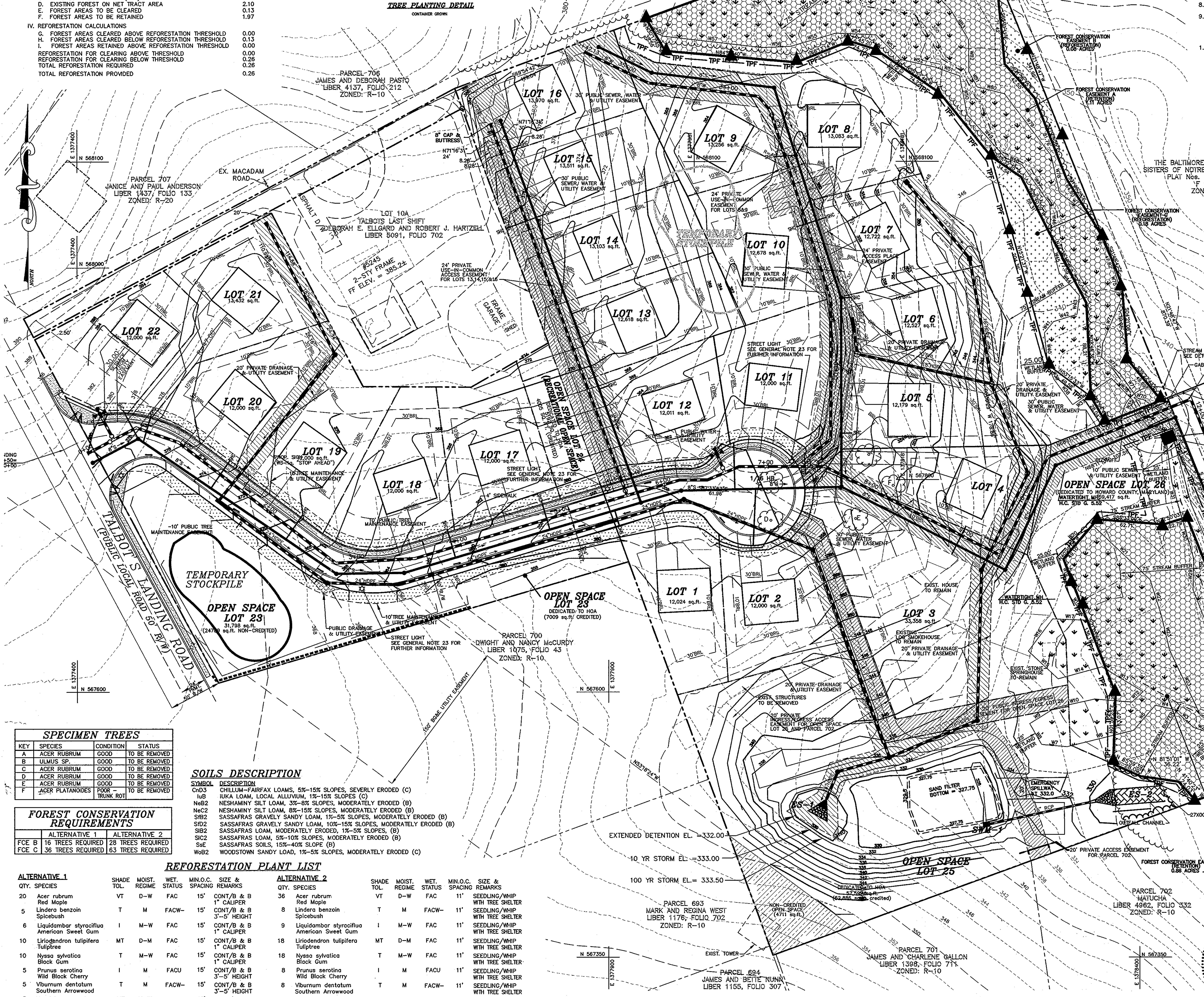
	ACRES
I. BASIC SITE DATA	
GROSS SITE AREA	13.80
AREA WITHIN 100 YEAR FLOODPLAIN	0.00
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL	0.00
NET TRACT AREA	13.80
LAND USE CATEGORY RESIDENTIAL–SUBURBAN	
II. FOREST CONSERVATION WORKSHEET DATA SUMMARY	
B. REFORESTATION THRESHOLD (20%)	2.76
C. AFFORESTATION MINIMUM (15%)	2.07
D. EXISTING FOREST ON NET TRACT AREA	2.10
E. FOREST AREAS TO BE CLEARED	0.13
F. FOREST AREAS TO BE RETAINED	1.97
IV. REFORESTATION CALCULATIONS	
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD	0.00
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD	0.13
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD	0.00
REFORESTATION FOR CLEARING ABOVE THRESHOLD	0.00
REFORESTATION FOR CLEARING BELOW THRESHOLD	0.26
TOTAL REFORESTATION REQUIRED	0.26
TOTAL REFORESTATION PROVIDED	0.26



TREE PLANTING DETAIL
CONTAINER GROWN

FOREST CONSERVATION EASEMENTS

EASEMENT	ACREAGE
FCE A	1.11 ACRES (RETENTION)
FCE B	0.08 ACRES (REFORESTATION)
FCE C	0.18 ACRES (REFORESTATION)
FCE D	0.86 ACRES (RETENTION)



LEGEND

- DENOTES 15–24.99% SLOPES.
- DENOTES WETLANDS
- FOREST CONSERVATION EASEMENT (RETENTION)
- FOREST CONSERVATION EASEMENT (AFFORESTATION)
- FOREST CONSERVATION SIGNAGE
- TPF — TREE PROTECTIVE FENCING
- SPECIMEN TREE

FOREST CONSERVATION EASEMENTS

ID	ACREAGE	TYPE
FCE A	1.11 ACRES	RETENTION
FCE B	0.08 ACRES	REFORESTATION
FCE C	0.18 ACRES	REFORESTATION
FCE D	0.86 ACRES	RETENTION

SPECIMEN TREES

KEY	SPECIES	CONDITION	STATUS
A	ACER RUBRUM	GOOD	TO BE REMOVED
B	ULMUS SP.	GOOD	TO BE REMOVED
C	ACER RUBRUM	GOOD	TO BE REMOVED
D	ACER RUBRUM	GOOD	TO BE REMOVED
E	ACER RUBRUM	GOOD	TO BE REMOVED
F	ACER PLATANOIDES	POOR – TRUNK ROT	TO BE REMOVED

FOREST CONSERVATION REQUIREMENTS

	ALTERNATIVE 1	ALTERNATIVE 2
FCE B	16 TREES REQUIRED	28 TREES REQUIRED
FCE C	36 TREES REQUIRED	63 TREES REQUIRED

SOILS DESCRIPTION

SYMBOL	DESCRIPTION
CnD3	CHILLUM–FAIRFAX LOAMS, 5%–15% SLOPES, SEVERLY ERODED (C)
IuB	IUKA LOAM, LOCAL ALLUVIUM, 1%–15% SLOPES (C)
NeB2	NESHAMINY SILT LOAM, 3%–8% SLOPES, MODERATELY ERODED (B)
NeC2	NESHAMINY SILT LOAM, 8%–15% SLOPES, MODERATELY ERODED (B)
SfB2	SASSAFRAS GRAVELY SANDY LOAM, 1%–5% SLOPES, MODERATELY ERODED (B)
SfD2	SASSAFRAS GRAVELY SANDY LOAM, 10%–15% SLOPES, MODERATELY ERODED (B)
SIB2	SASSAFRAS LOAM, MODERATELY ERODED, 1%–5% SLOPES, (B)
SIC2	SASSAFRAS LOAM, 5%–10% SLOPES, MODERATELY ERODED (B)
SsE	SASSAFRAS SOILS, 15%–40% SLOPE (B)
WoB2	WOODSTOWN SANDY LOAD, 1%–5% SLOPES, MODERATELY ERODED (C)

REFORESTATION PLANT LIST

ALTERNATIVE 1

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
20	Acer rubrum Red Maple	VT	D–W	FAC	15'	CONT/B & B 1" CALIPER
5	Lindera benzoin Spicebush	T	M	FACW–	15'	CONT/B & B 3'–5' HEIGHT
6	Liquidambar styraciflua American Sweet Gum	I	M–W	FAC	15'	CONT/B & B 1" CALIPER
10	Liriodendron tulipifera Tuliptree	MT	D–M	FAC	15'	CONT/B & B 1" CALIPER
10	Nyssa sylvatica Black Gum	T	M–W	FAC	15'	CONT/B & B 1" CALIPER
5	Prunus serotina Wild Black Cherry	I	M	FACU	15'	CONT/B & B 3'–5' HEIGHT
5	Viburnum dentatum Southern Arrowwood	T	M	FACW–	15'	CONT/B & B 3'–5' HEIGHT
5	Vaccinium corymbosum Highbush Blueberry	MT	M–W	FACW–	15'	CONT/B & B 3'–5' HEIGHT

TOTAL
66 TREES & SHRUBS (52 TREES REQUIRED)

ALTERNATIVE 2

QTY.	SPECIES	SHADE TOL.	MOIST. REGIME	WET. STATUS	MIN.O.C. SPACING	SIZE & REMARKS
36	Acer rubrum Red Maple	VT	D–W	FAC	11'	SEEDLING/WHIP WITH TREE SHELTER
8	Lindera benzoin Spicebush	T	M	FACW–	11'	SEEDLING/WHIP WITH TREE SHELTER
9	Liquidambar styraciflua American Sweet Gum	I	M–W	FAC	11'	SEEDLING/WHIP WITH TREE SHELTER
18	Liriodendron tulipifera Tuliptree	MT	D–M	FAC	11'	SEEDLING/WHIP WITH TREE SHELTER
18	Nyssa sylvatica Black Gum	T	M–W	FAC	11'	SEEDLING/WHIP WITH TREE SHELTER
8	Prunus serotina Wild Black Cherry	I	M	FACU	11'	SEEDLING/WHIP WITH TREE SHELTER
8	Viburnum dentatum Southern Arrowwood	T	M	FACW–	11'	SEEDLING/WHIP WITH TREE SHELTER
8	Vaccinium corymbosum Highbush Blueberry	MT	M–W	FACW–	11'	SEEDLING/WHIP WITH TREE SHELTER

TOTAL
113 WHIPS WITH TREE SHELTERS & SHRUBS (91 WHIPS REQUIRED)

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GENERAL NOTES

FOREST PROTECTION

1. ALL FOREST RETENTION AREAS SHALL BE TEMPORARILY PROTECTED BY WELL ANCHORED BLAZE ORANGE PLASTIC MESH FENCING AND SIGHAGE AS INDICATED ON THE PLANS. THE DEVICES SHALL BE INSTALLED ALONG THE FOREST RETENTION BOUNDARY PRIOR TO ANY LAND CLEARING, GRUBBING, OR GRADING ACTIVITIES.
2. THE FOREST PROTECTION DEVICES SHALL BE INSTALLED SUCH THAT THE CRITICAL ROOT ZONES OF ALL TREES WITHIN THE RETENTION AREA NOT OTHERWISE PROTECTED WILL BE WITHIN FOREST PROTECTION DEVICES.
3. ALL PROTECTION DEVICES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION, INCLUDING SILT FENCE BEING USED AS PROTECTIVE FENCING. ALL DEVICES SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION HAS CEASED IN THE IMMEDIATE VICINITY.
4. ATTACHMENT OF SIGNS, OR ANY OTHER OBJECTS TO TREES IS PROHIBITED. NO EQUIPMENT, MACHINERY, VEHICLES, MATERIALS OR EXCESSIVE PEDESTRIAN TRAFFIC SHALL BE ALLOWED WITHIN THESE PROTECTED AREAS.
5. INSTALLATION AND MAINTENANCE OF PROTECTIVE FENCING AND SIGNAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. THE GENERAL CONTRACTOR SHALL TAKE THE UTMOST CARE TO PROTECT TREE ROOT SYSTEMS DURING ALL CONSTRUCTION ACTIVITIES. TREE ROOT SYSTEMS SHALL BE PROTECTED FROM SMOTHERING, FLOODING, EXCESSIVE WETTING FROM DE-WATERING OPERATIONS, OFF-SITE RUN OFF, SPILLAGE AND DRAINING OF MATERIALS THAT MAY BE HARMFUL TO TREES.
6. THE GENERAL CONTRACTOR SHALL PREVENT PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT, AND THE STORING OF BUILDING SUPPLIES OR STOCKPILING OF EARTH WITHIN FOREST CONSERVATION EASEMENTS.
7. REMOVAL OF TOPSOIL OR ROOT MAT WITHIN THE TREE PRESERVATION AREA SHALL BE PROHIBITED.
8. THE GENERAL CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY TREES DAMAGED OR DESTROYED WITHIN THE FOREST CONSERVATION EASEMENTS.
9. ROOT PRUNING SHALL BE USED AT THE LIMIT OF DISTURBANCE OR LIMIT OF GRADING WITHIN AND ADJACENT TO ALL PRESERVATION AREAS, AS NECESSARY.

PRE-CONSTRUCTION MEETING

1. AFTER THE BOUNDARIES OF THE FOREST RETENTION AREAS HAVE BEEN FIELD LOCATED AND MARKED, AND AFTER THE FOREST PROTECTION DEVICES HAVE BEEN INSTALLED, BUT BEFORE ANY OTHER DISTURBANCE HAS TAKEN PLACE ON SITE, A PRE-CONSTRUCTION MEETING SHALL TAKE PLACE ON SITE. THE DEVELOPER, CONTRACTOR OR PROJECT MANAGER, AND HOWARD COUNTY INSPECTORS SHALL ATTEND. THE PURPOSE OF THIS MEETING WILL BE:
   - A. TO IDENTIFY THE LOCATIONS OF THE FOREST RETENTION AREAS, SPECIMEN TREES WITHIN 50 FEET OF THE LIMIT OF DISTURBANCE, LIMITS OF CONSTRUCTION, EMPLOYEE PARKING AREAS AND EQUIPMENT STAGING AREAS;
   - B. INSPECT ALL FLAGGED BOUNDARIES AND PROTECTION DEVICES;
   - C. MAKE ALL NECESSARY ADJUSTMENTS;
   - D. ASSIGN RESPONSIBILITIES AS APPROPRIATE AND DISCUSS PENALTIES.

CONSTRUCTION MONITORING

1. THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST AREAS OR INDIVIDUAL TREES WHICH MAY HAVE BEEN CAUSED BY CONSTRUCTION ACTIVITIES, SUCH AS SOIL COMPACTION, ROOT INJURY, TRUNK WOUNDS, LIMB INJURY, OR STRESS CAUSED BY FLOODING OR DROUGHT CONDITIONS.
2. ANY SUCH DAMAGE THAT MAY OCCUR SHALL BE REMEDIED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.
3. THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE OF THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE PLANS. ANY DAMAGE SHALL BE RESTORED BY THE CONTRACTOR AT HIS EXPENSE AND TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANTING SPECIFICATIONS AND NOTES

SITE PREPARATION AND SOILS

1. PROTECTION FENCING IS TO BE INSTALLED AS A FIRST ORDER OF BUSINESS. SEE PLAN FOR LOCATIONS.
2. DISTURBANCE OF SOILS SHOULD BE LIMITED TO THE PLANTING FIELD FOR EACH PLANT. AS SHOWN ON THE DETAIL VIEW, A PLANTING FIELD OF RADIUS = 5 X DIAMETER OF THE ROOT BALL OR CONTAINER IS RECOMMENDED.
3. SOIL MIX FOR ALL PLANTS EXCEPT ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME OF COMPOSTED SLUDGE.
4. SOIL MIX FOR ERICACEOUS MATERIAL: SOIL MIX SHALL CONSIST OF EXISTING NATIVE TOPSOIL MIXTURE AT EACH PLANTING FIELD LOCATION INTO WHICH THE CONTRACTOR SHALL THOROUGHLY INCORPORATE 25% BY VOLUME PEAT MOSS.
5. ALL MIXING IN 3 AND 4 SHALL BE LIMITED TO CONTAINER GROWN OR BALL AND BURLAP STOCK ONLY AND CONFINED TO THE PLANTING FIELD AND IMMEDIATE ADJACENT SOIL SURFACE AREA AND SHALL BE DONE TO THE SATISFACTION OF THE DESIGN TEAM OR ENGINEER.

PLANT STORAGE AND INSPECTION

1. FOR CONTAINER GROWN NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN 2 WEEKS AFTER DELIVERY TO THE SITE.
2. FOR BALL AND BURLAP NURSERY STOCK, PLANTING SHOULD OCCUR WITHIN THREE DAYS AFTER DELIVERY TO THE SITE.
3. PLANTING STOCK SHOULD BE INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO STANDARD NURSERYMAN SPECIFICATIONS FOR SIZE, FORM, VIGOR, ROOTS, TRUNK WOUNDS, INSECTS AND DISEASE SHOULD BE REPLACED.
4. UNTIL PLANTED, ALL PLANT STOCK SHALL BE KEPT IN A SHADED, COOL, AND MOISTENED ENVIRONMENT.

PLANT INSTALLATION

1. THE PLANTING FIELD SHOULD BE PREPARED AS SPECIFIED (SEE DETAIL). NATIVE STOCKPILED SOILS SHOULD BE USED FOR SOIL MIX AND BACKFILL FOR PLANTING FIELD. AFTER PLANT INSTALLATION, RAKE SOILS EVENLY OVER THE PLANTING FIELD AND COVER WITH AT LEAST 4 INCHES OF MULCH. WATER, GENEROUSLY, TO SETTLE SOIL BACKFILLED AROUND TREES.
2. PLANTING FIELD DIAMETERS SHOULD BE REDUCED OR PLANTING FIELD MOVED IF IT APPEARS THAT EXCESSIVE EXISTING ROOT DAMAGE MAY OCCUR DURING DIGGING OPERATION NEAR EXISTING FOREST.
3. CARE SHALL BE TAKEN WHEN DIGGING PLANTING FIELDS NOT TO CHOP THROUGH LARGER EXISTING ROOTS FROM EXISTING MATURE TREES. IF ROOTS GREATER THAN 1/2 INCH ARE ENCOUNTERED PLEASE TRY TO DIG AROUND THEM AS MUCH AS POSSIBLE TO MINIMIZE IMPACT TO EXISTING TREES. THEY WERE HERE FIRST.
4. CONTAINER GROWN STOCK SHOULD BE REMOVED FROM THE CONTAINER AND ROOTS GENTLY LOOSENED FROM THE SOIL. IF THE ROOTS ENCIRCLE THE ROOT BALL, SUBSTITUTION IS STRONGLY RECOMMENDED. J-SHAPED OR KINKED ROOT SYSTEMS SHOULD ALSO BE NOTED. ROOTS MAY NOT BE TRIMMED ON SITE, DUE TO THE INCREASED CHANCES OF SOIL BORNE DISEASES.
5. FOR BALL AND BURLAP STOCK, PLACE TREE IN PREPARED PLANTING FIELD AND REMOVE WIRE AND/OR STRING FROM ROOT BALL. THEN PEEL BACK BURLAP TO BASE OF ROOT BALL AND COVER ENTIRE ROOT BALL WITH TOPSOIL MIXTURE INDICATED ABOVE AND WATER GENEROUSLY.
6. FOR TREES PLANTED IN THE AFFORESTATION AREA, CONTRACTOR SHALL EVENLY DISPERSE SPECIES IN GROUPS OF TWO (2) TO FIVE (5), PER SPECIES, OVER THE ENTIRE DESIGNATED AREA TO BE PLANTED WHILE MAINTAINING AN AVERAGE RANDOM SPACING OF INDIVIDUAL TREES AT PROPER SPACING INDICATED ON PLANT LIST.
7. AVOID PLANTING IN A STRAIGHT GRID PATTERN. TREES SHALL BE PLANTED ON AN AVERAGE SPACING AS INDICATED ON PLANT LISTS TO OBTAIN A MORE NATURAL APPEARANCE.
8. NEWLY PLANTED TREES MAY NEED WATERING AS MUCH AS ONCE A WEEK FOR THE ENTIRE GROWING SEASON, DUE TO THE VERY DEEP, WELL DRAINED NATURE OF THE NATIVE SOILS FOUND ON THIS SITE COMBINED WITH THE LOOSENESS OF THE BACKFILLED AREA WITHIN THE PLANTING FIELD. THE NEXT TWO YEARS MAY REQUIRE WATERING ONLY A FEW TIMES A YEAR DURING SUMMER AND DRY MONTHS. AFTER THAT PERIOD, TREES SHOULD ONLY NEED WATER IN SEVERE DROUGHTS. ANY WATERING PLAN SHOULD COMPENSATE FOR RECENT RAINFALL PATTERNS.

FERTILIZING

1. DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
2. NOTHING SHOULD BE ADDED TO THE SOIL WITHOUT TESTING IT FIRST TO DETERMINE ITS NEEDS.
3. IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALLY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.

MAINTENANCE SCHEDULE

1. ANNUAL MAINTENANCE DURING THE GROWING SEASON, FOR A THREE YEAR PERIOD.
2. ASSESS TREE MORTALITY OF PLANTING STOCK, REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
3. VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
4. REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED WOODY NURSERY STOCK.
5. REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
6. A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

SUPERVISION

1. ALL FOREST CONSERVATION ACTIVITIES SHALL BY DONE UNDER THE DIRECT SUPERVISION OF SOMEONE FROM THE DESIGN TEAM OR OTHER "QUALIFIED PROFESSIONAL" AS DETERMINED BY THE REQUIREMENTS OF COMAR 08.19.06.01 AND THE MARYLAND DEPARTMENT OF NATURAL RESOURCES, PUBLIC LANDS AND FORESTRY DIVISION.

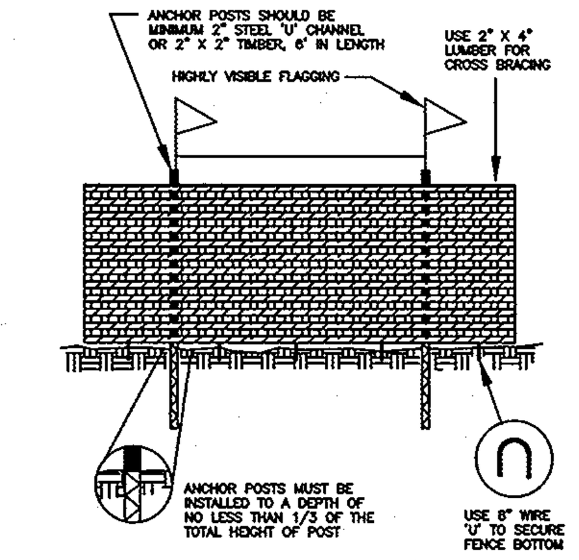
FOREST RETENTION AREA
MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS
PROHIBITED
VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE MARYLAND FOREST CONSERVATION ACT OF 1991

FOREST CONSERVATION AREA
REFORESTATION PROJECT
TREES FOR YOUR FUTURE

Min 11' — Min 15'

SIGNAGE DETAILS
NOT TO SCALE

PROTECTIVE FENCE DETAIL
BLAZE ORANGE PLASTIC MESH



NOTES
1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
4. ROOT DAMAGE SHOULD BE AVOIDED.
5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

MD DNR QUALIFIED PROFESSIONAL
[signature] 10/27/08

STATE OF MARYLAND H. JACOB HIKMAT No. 17942 PROFESSIONAL ENGINEER

DEVELOPER
ELLICOTT CITY LAND HOLDING, INC.
C/O DON REUWER
8000 MAIN STREET
ELLICOTT CITY, MD 21043
(410) 480–9105

PURPOSE NOTE: SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL

APPROVED: DEPARTMENT OF PLANNING AND ZONNING

[signature] 11/24/08
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

[signature] 11/20/08
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

project	date
2002–007	JUNE 2004
illustration	engineering
HSP/SJD	SJD
scale	approval
1"=50'	

no.	description	date
2	SHOW AS-BUILT POND GRADING, REMOVE PIPE STEMS, ACCESS EASEMENT AROUND POND. REMOVE RETAINING WALL	10/27/08
1	REVISED PLAN TO REFLECT APPROVED F-06-081(ILCHESTER OAKS 2)	11/15/07

revisions

ILCHESTER OAKS
LOTS 1 THRU 22 & OPEN SPACES 23 THRU 26 & NON-BUILDABLE PARCEL 'A'
TAX MAP 31 PARCEL 641 AND P/O PARCEL 699
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
REVISED FOREST CONSERVATION PLAN

MILDENBERG, BOENDER & ASSOC., INC.
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