DOGWOOD DRIVE

STORM DRAIN MAINTENANCE, REPAIR & LINING PLAN
COUNTRY CLUB SOUTH PORTION OF PINEFIELD
CHARLES COUNTY, MARYLAND

SITE DATA

OWNER
VARIOUS OWNERS
SEE TABLE THIS SHEET

ENGINEER/SURVEYOR
VISTA DESIGN, INC.
11634 WORCESTER HIGHWAY
SHOWELL, MARYLAND 21862
PH: (410) 352-3874
FAX: (410) 352-3875

WETLAND CONSULTANT
ENVIRONMENTAL CONSULTANTS, INC.
38173 DUPONT BLVD.
SELBYVILLE, DE 19975
PH: (302)-436-9657

SITE LOCATION
TAX MAP: 9
DOGWOOD DRIVE
PARCELS: 22, 86 AND 111

FLOOD ZONE
THIS SITE IS LOCATED WITHIN FLOOD ZONE "A3", "B" (AREA BETWEEN LIMITS OF THE 100-YEAR FLOOD AND 500-YEAR FLOOD; OR CERTAIN AREAS SUBJECT TO 100-YEAR FLOODING WITH AVERAGE DEPTHS LESS THAN ONE (1) FOOT) AND "C" (AREA OF MINIMAL FLOODING) PER F.I.R.M. MAP #24009B0000D(B) DATED JUNE 5, 1985

WATERS OF THE US & NON-TIDAL WETLANDS
NON-TIDAL WETLANDS AND WATERS OF THE US HAVE BEEN FIELD DELINEATED BY ENVIRONMENTAL RESOURCES, INC. ON MAY 4, 2010 AND ARE SHOWN ON THESE PLANS. IMPACTS TO THE WATERS OF THE US, DELINEATED WETLANDS OR THE 25 FOOT BUFFER, ARE AS SHOWN ON THE ATTACHED PLANS.

SHEET INDEX

1. COVER SHEET
2. SITE PLAN
3. TEMPORARY STAGING, ACCESS ROAD, RIP-RAP PLACEMENT AND WETLAND IMPACTS PLAN
4. HEADWALL, DEBRIS CAGE AND WETLAND IMPACTS AT 48" RCP PLAN AND DETAILS
5. DETAILS
6. CIPP & PIPE LINER DETAILS & NOTES
7. EROSION & SEDIMENT CONTROL DETAILS & NOTES
8. OVERALL DRAINAGE AREA MAP

APPENDIX A: DOGWOOD DRIVE, SUPPLEMENTAL STORMWATER PIPE REHABILITATION REPORT

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT SPECIFICATIONS MANUAL, THE LATEST CHARLES COUNTY DETAIL MANUAL AND IN ACCORDANCE WITH CURRENT COUNTY ORDINANCES.
2. CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO ANY EXCAVATION WORK TO LOCATE ALL UTILITIES IN THE WORK AREA. ANY CONFLICTS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
3. THE CONTRACTOR IS RESPONSIBLE TO HOLD A "PRECONSTRUCTION" MEETING TO INCLUDE THE CONTRACTOR, CHARLES COUNTY INSPECTION PERSONNEL, PUBLIC UTILITIES, AND ANY LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT/DEVELOPMENT SERVICES DIVISION 48 HOURS PRIOR TO THE START OF ALL CONSTRUCTION IN ACCORDANCE TO ALL PERMITS ISSUED @ (301) 645-0618.
5. MAXIMUM SLOPES SHALL BE NOT GREATER THAN THREE (3) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL OUTSIDE THE ROAD RIGHT-OF-WAY. SLOPES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE NOT GREATER THAN TWO (2) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL, OR AS SPECIFIED IN THE COUNTY ROAD ORDINANCE, AND IN THE CHARLES COUNTY DETAIL MANUAL.
6. CERTIFIED COMPACTION TESTS ARE REQUIRED FOR ALL TRENCH/FILL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE COUNTY SPECIFICATIONS MANUAL AND GRADING ORDINANCE. FINAL REPORTS AND CERTIFICATIONS SHALL BE PROVIDED PRIOR TO PRE FINAL INSPECTIONS.
7. CERTIFIED COMPACTION TESTS AND GEOTECHNICAL REPORTS SHALL BE SUBMITTED ON A BIWEEKLY BASIS THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED BY THE SPECIFICATIONS MANUAL.
8. AS-BUILT PLANS SHALL BE SUBMITTED PRIOR TO FINAL INSPECTIONS.
9. WITH APPROVAL FROM THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, ALL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE REMOVED PRIOR TO THE RELEASE OF BONDS.
10. PRIOR TO BOND RELEASE, ALL OUTFALLS SHALL BE INSPECTED AND APPROVED BY COUNTY.
11. TOPOGRAPHY SHOWN IS AT TWO (2) FOOT CONTOUR INTERVALS AS PROVIDED BY SOWELL AND ASSOCIATES, DATED JAN 22, 2010. THE VERTICAL DATUM IS BASED ON THE NAVD 88 DATUM. THE HORIZONTAL DATUM IS BASED ON THE NAD 83 DATUM.
12. THE CONTRACTOR SHALL NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-0700, FIVE (5) DAYS PRIOR TO THE START OF WORK, AND UPON COMPLETION WHEN SEDIMENT CONTROL IS READY TO BE REMOVED.
13. ALL STREET SIGNS AND REGULATORY SIGNS WILL BE IN PLACE BEFORE PLACEMENT OF ANY ASPHALT. REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR PROVIDING SIGNAGE AND PLACEMENT REQUIREMENTS.
14. ALL STORM DRAINS MUST HAVE A MINIMUM COVER OF 12" VERTICAL COVER BETWEEN ALL OTHER UTILITIES.
15. CONTRACTOR TO IMMEDIATELY NOTIFY CHARLES COUNTY POM AND DESIGN ENGINEER IF FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON PLANS. DESIGN ENGINEER WILL REVIEW CURRENT CONDITIONS AND ADVISE POM/CONTRACTOR ON HOW TO PROCEED.
16. THE DEVELOPER OR CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TO THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT A LETTER OF MATERIAL CERTIFICATION FROM THE SUPPLIERS FOR ALL PRECAST STRUCTURES RELATED TO STORM DRAIN SYSTEMS AND STORMWATER MANAGEMENT FACILITIES IN THE FOLLOWING FORMAT:
   - 16.1. CONTRACTOR'S NAME AND ADDRESS.
   - 16.2. PROJECT NAME AND STRUCTURE NUMBER.
   - 16.3. MANUFACTURERS' PRODUCT CERTIFICATION.
   - 16.4. TYPE AND QUALITY OF PRODUCT.
   - 16.5. SHOP DRAWINGS SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
17. THE DEVELOPER OR HIS AGENT WILL NOTIFY THE DEPARTMENT FOR FINAL INSPECTION AFTER THE COMPLETION OF PERMITTED WORK PER APPROVED PLANS. THE DEPARTMENT WILL REQUIRE THE FOLLOWING FOR THEIR FILES:
   - 17.1. AN "AS BUILT" REPRODUCIBLE PLAN AND SURVEY BY A PROFESSIONAL LAND SURVEYOR AND/OR PROFESSIONAL ENGINEER AT THE SAME SCALE AS THE ORIGINAL PLAN AND SHOWING ALL IMPROVEMENTS AND FINAL GRADES.
   - 17.2. CERTIFICATION BY THE CONTRACTOR THAT ALL GRADING, DRAINAGE, EROSION CONTROL MEASURES, AND PERMANENT FACILITIES AND VEGETATIVE MEASURES HAVE BEEN COMPLETED IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
   - 17.3. A REPORT SUMMARIZING THE INSPECTION REPORTS AND TEST RESULTS AS PER SECTIONS 10.2 AND 10.4 OF THE CHARLES COUNTY STORMWATER ORDINANCE.
18. THE CONTRACTOR SHALL SUBMIT TO THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT CONCRETE CYLINDER BREAK REPORTS CERTIFIED BY A PROFESSIONAL ENGINEER FOR ALL CAST-IN-PLACE STRUCTURES USED FOR STORM DRAIN SYSTEMS AND/OR STORMWATER MANAGEMENT FACILITIES.
19. ALL SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARD DETAILS GIVEN IN M.D.E.'S "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
20. ALL SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND PLACED IN OPERATION BEFORE EXCAVATION IS STARTED. THE CONTRACTOR SHALL ADJUST THE SEDIMENT CONTROL DEVICES AS NECESSARY TO MEET FIELD CONDITIONS, KEEP THEM CLEAN AND IN WORKING ORDER DURING CONSTRUCTION. NO SEDIMENT CONTROL DEVICE SHALL BE REMOVED UNTIL THE ENTIRE AREA DRAINING TO IT HAS BEEN PERMANENTLY STABILIZED, INSPECTED AND APPROVED BY CHARLES COUNTY SEDIMENT CONTROL INSPECTOR.
21. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO KEEP MUD AND DEBRIS FROM BEING TRACKED ON PUBLIC ROADS.
22. APPROVAL OF CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-0700 SHALL BE REQUESTED BY THE OWNER/DEVELOPER UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
23. EROSION AND SEDIMENT PRACTICES, AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT, BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY.
24. SEDIMENT AND EROSION CONTROLS CANNOT BE REMOVED UNTIL THE SITE HAS ADEQUATE STABILIZATION. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATE STABILIZED AND THE SEDIMENT CONTROL INSPECTOR HAS APPROVED SUCH REMOVAL.

REQUIRED PERMITS

PRIOR TO ANY DEVELOPMENT OF THE SITE, THE FOLLOWING PERMITS / AUTHORIZATIONS WILL BE REQUIRED:

- SEDIMENT CONTROL APPROVAL FROM THE CHARLES SOIL CONSERVATION DISTRICT
- DEVELOPMENT SERVICES PERMIT FROM CHARLES COUNTY POM
- WETLAND IMPACT PERMIT FROM M.D.E. AND U.S.A.C.E.

WETLANDS AND WATERS OF THE US NOTE:

THE US ARMY CORPS OF ENGINEERS PERMIT FOR WORK TO BE PERFORMED IN THE NONTIDAL WETLANDS AS WELL AS WITHIN THE WATERS OF THE US, SHALL BE REFERRED TO FOR FURTHER DETAIL OF CONSTRUCTION AND CRITERIA WITHIN THESE AREAS.

NOTE:
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NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

SITE ANALYSIS:

1. TOTAL DRAINAGE AREA: +/- 151.25 Ac (138 Ac TO NEW HEADWALL)
2. DISTURBED AREA: +/- 14,344 SF (0.33 Ac)
3. VOLUME OF SPOIL BORROW MATERIAL: +/- 15 C.Y.
4. OFF-SITE BORROW/WASTE AREA LOCATION: AS APPROVED BY CHARLES COUNTY
5. VOLUME OF EXCAVATION: +/- 15 C.Y.

OVERVIEW OF WORK TO BE PERFORMED (SEE SEQUENCE OF CONSTRUCTION, SHEET 7):

- A HEADWALL TO BE INSTALLED AT END OF EXISTING 48" RCP. DEBRIS CAGE TO BE ATTACHED TO NEW HEADWALL OVER EXISTING 48" RCP TO PROTECT THE PIPE NETWORK FROM DEBRIS. (SEE DETAIL SHEET 4)
- B EXISTING BURIED MANHOLE TO BE UNCOVERED. NEW RISER, TOP AND COVER TO BE INSTALLED TO PROVIDE ACCESS TO MANHOLE AND PIPING, PER CHARLES COUNTY STANDARDS AND SPECIFICATIONS. (SEE DETAILS SHEET 5).
- C AREA OF FAILED 72" CMP PIPE TO BE REMOVED AND REPLACED. REMOVE SECTION TO THE NEAREST JOINT ON EACH SIDE OF THE FAILED SECTION. PROPERLY CONNECT NEW 72" CMP TO EXISTING PIPING WITH PROPER COUPLING SYSTEM, AS PER MANUFACTURER'S SPECIFICATIONS. NEW CONNECTION SHALL BE WATER TIGHT AND STRUCTURALLY SOUND. PIPE BEDDING, INFILL AND COVER SHALL MEET OR EXCEED THE CHARLES COUNTY AND MANUFACTURER'S SPECIFICATIONS FOR PIPE INSTALLATION. DRIVEWAYS SHALL BE REPAIRED TO CHARLES COUNTY STANDARDS WITH CORRESPONDING MATERIALS (SEE DETAILS, SHEET 5).
- D MANHOLE OUTFALL TO BE BLOCKED DURING REHABILITATION OF 72" CMP. CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY DEWATER THE MANHOLE AND PUMP THE RUNOFF VIA BYPASS LINE TO THE OUTFALL AREA AS SHOWN. EXISTING STREAM TO THE PIPE NETWORK CARRIES A VARIABLE BASELINE (DEPENDING ON TIME OF YEAR) FLOW, WITH AN APPROXIMATE 2-YEAR STORM RUNOFF RATE = 115 CFS AND APPROXIMATE 10-YEAR STORM RUNOFF RATE = 230 CFS. PUMPS SHALL BE COORDINATED TO PROVIDE SUFFICIENT CAPACITY TO CONVEY THE REQUIRED FLOWS SHOULD ANY RAIN EVENT(S) OCCUR.
- E AREA OF PROPOSED RIP-RAP OUTFALL PROTECTION. EXISTING VEGETATION AND DEBRIS TO BE REMOVED, AND AREA GRADED PRIOR TO INSTALLATION OF 82' LONG, 17' WIDE, 3' THICK, D50=18" APRON. (SEE DETAIL SHEET 3.)
- F APPROXIMATELY 608 L.F. OF 72" CMP TO BE LINED BY MEANS OF 72" CIPP OR 68" SPIRAL WOUND LINER PIPE AND GROUT IN ACCORDANCE WITH CIPP SPECIFICATIONS OR SPIRAL LINER DETAILS ON SHEET 6.
- G TEMPORARY STAGING AREA. STONE TO BE INSTALLED AS SHOWN AROUND STABILIZED CONSTRUCTION ENTRANCE AT HEAD OF SPRUCE STREET. SEE DETAIL THIS SHEET.
- H TEMPORARY CONSTRUCTION ACCESS ROAD TO BE CONSTRUCTED OF TIMBER OR COMPOSITE MAT MATERIAL, WITH AN ALLOWABLE IMPACT AREA OF UP TO 16' WIDE. THE ALIGNMENT AND INSTALLATION AREA IS ENVIRONMENTALLY SENSITIVE AND SHALL BE MINIMALLY IMPACTED THROUGHOUT THE PROJECT. MATS SHALL BE DESIGNED TO DISTRIBUTE THE VEHICLE LOAD OVER THE WIDTH OF THE ACCESS PATH TO MINIMIZE THE GROUND PENETRATION AND SOIL AND VEGETATION DISTURBANCE. NO GROUND PRESSURE, INCLUDING THE WEIGHT OF THE MATS, SHALL EXCEED 15 PSI. SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER, ENVIRONMENTAL CONSULTANT AND CHARLES COUNTY. THE CENTERLINE OF THE TEMPORARY ACCESS ROAD IS +/-350' IN LENGTH, APPROXIMATELY 8 TREES ARE LOCATED IN THE VICINITY OF THE TEMPORARY STAGING AREA AND ACCESS ROAD. IF NEEDED FOR INSTALLATION OF THE TEMPORARY STAGING AREA AND ACCESS ROAD, THESE TREES MAY BE REMOVED IF THEY CANNOT BE AVOIDED. THE ENVIRONMENTAL CONSULTANT OF RECORD FOR THIS PROJECT SHALL BE NOTIFIED IN ORDER TO COORDINATE THE FLAGGING OF THE TREES PRIOR TO REMOVAL. THE TREES ARE LISTED BELOW. IF THE TREES ARE FELLED FOR ACCESS, NOTHING SHALL REMAIN THAT IS LARGER THAN 6" IN DIAMETER. IN ADDITION, THE CANOPIES SHALL BE CHOPPED UP AND NOT LEFT AS WHOLE.
- I APPROXIMATE AREA OF EXISTING DITCH. A TEMPORARY CULVERT CROSSING, MINIMUM 6" SIZE, SHALL BE INSTALLED, IF NEEDED TO PROVIDE POSITIVE DRAINAGE UNDER TEMPORARY ACCESS ROAD. MATS SHALL BE BRIDGED OVER THE CULVERT AND FEATHERED ON EACH SIDE.

PLAN NARRATIVE

THE PURPOSE OF THIS PLAN IS TO REHABILITATE A STORMDRAIN PIPE NETWORK ALONG DOGWOOD DRIVE IN THE COUNTRY CLUB SOUTH SECTION OF THE PINEFIELD COMMUNITY IN WALDORF, MD.

AS PART OF THIS EFFORT, THE CONTRACTOR SHALL:

- INSTALL HEADWALL ON THE EXISTING 48" RCP PIPE AT SOUTH END OF DOGWOOD DRIVE.
- INSTALL DEBRIS CAGE ATTACHED TO NEW HEADWALL AT 48" RCP.
- CLEAR ALL PIPES IN THE NETWORK OF ACCUMULATED DEBRIS.
- INSTALL MANHOLE RISER, TOP RING AND LID ON EXISTING BURIED MANHOLE AT NORTHEAST CORNER OF DOGWOOD DRIVE AND COUNTRY LANE.
- REMOVE/REPLACE DAMAGED SECTIONS (2) OF EXISTING 72" CMP ON NORTH SIDE OF DOGWOOD DR AT APPROXIMATELY 31' AND 384' NORTH OF MANHOLE 5.
- CLEAR DEBRIS FROM OUTFALL OF THE 72" CMP AND INSTALL A NEW RIP-RAP APRON.
- LINE ENTIRE LENGTH OF THE 72" CMP (APPROXIMATELY 608 L.F.) WITH EITHER A HEAT CURED CIPP, INFRARED LIGHT CURED CIPP, OR 12 GAUGE ALUMINUM SPIRAL PIPE LINER WITH GROUT SURROUND.

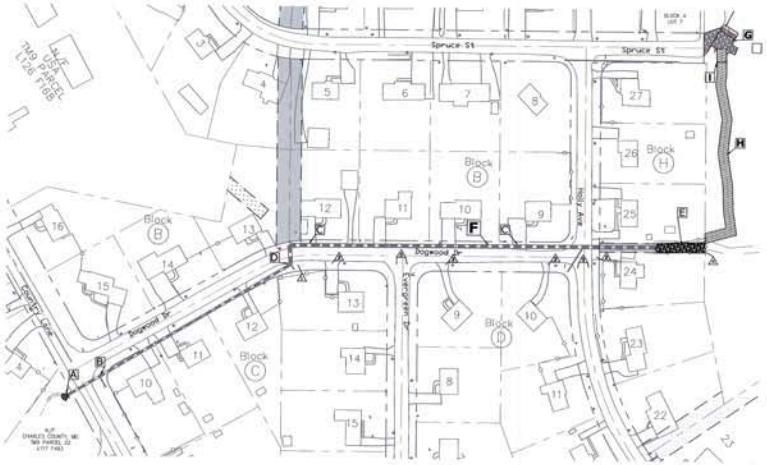
THERE ARE TWO SECTIONS OF THE 72" CMP PIPE RUN THAT HAVE COLLAPSED UNDER THE DRIVEWAYS, AS SHOWN ON THE PLANS. THESE SECTIONS SHALL BE UNCOVERED AND REMOVED TO THE NEAREST PIPE JOINT ON EACH SIDE. NEW 72" CMP SHALL BE INSTALLED TO REPLACE THE FAILED SECTIONS. THE NEW SECTIONS SHALL BE PROPERLY CONNECTED TO THE EXISTING PIPING PER THE MANUFACTURER'S SPECIFICATIONS, PROVIDING STRUCTURAL INTEGRITY AND WATER TIGHTNESS TO THE PIPE RUN. PROPER BEDDING, BACKFILL AND FILL OVER THE PIPE SHALL BE INSTALLED, PER THE MANUFACTURER'S SPECIFICATIONS AND CHARLES COUNTY STANDARDS. THE DRIVEWAYS SHALL BE REPAIRED AND ANY ASSOCIATED DISTURBED AREAS ADJACENT TO THE DRIVEWAYS SHALL BE RETURNED TO CONDITIONS PRIOR TO CONSTRUCTION.

ONCE THE NEW SECTIONS ARE INSTALLED, THE ENTIRE NETWORK OF 48", 72" AND ASSOCIATED STRUCTURES AND PERIPHERAL PIPING SHALL BE CLEARED OF ALL SEDIMENT BUILD-UP AND DEBRIS. THE FLUSH WATER SHALL BE PROPERLY SCREENED TO AVOID INTRODUCING LARGE AMOUNTS OF SEDIMENT AND DEBRIS TO THE WATERWAY DOWNSTREAM. THE CAPTURED SEDIMENT AND DEBRIS SHALL BE DISPOSED OF PROPERLY OFF-SITE.

THE EXISTING 72" CMP PIPE SHALL BE REMEDIATED IN ORDER TO RESTORE AS MUCH OF THE ORIGINAL DESIGN FLOW AREA AS POSSIBLE. A CURED IN PLACE PIPE (CIPP) LINING SHALL BE INSTALLED INSIDE THE 72" PIPE RUN FROM MANHOLE 5 TO THE OUTFALL ONCE THE TWO COLLAPSED SECTIONS HAVE BEEN REPLACED. THE CIPP SHALL PROVIDE ADDITIONAL STRUCTURAL INTEGRITY TO THE PIPE, PROVIDE WATER TIGHTNESS TO THE PIPE RUN FOR THE ENTIRE LENGTH, PREVENT ADDITIONAL ROOT INTRUSION, ENHANCE THE FLOW RATE, AND IMPROVE THE OVERALL CONDITIONS OF THE PIPE RUN TO PROMOTE POSITIVE DRAINAGE. THE CIPP MAY BE ACCOMPLISHED BY UTILIZING TRADITIONAL CIPP TECHNOLOGIES OR A COMPOSITE CIPP SOLUTION.

DURING CURING OF THE CIPP, THE RUNOFF FROM THE CURING PROCESS SHALL BE CAPTURED AND TREATED PROPERLY OFF-SITE. THE RUNOFF SHALL NOT DISCHARGE TO THE NEWLY INSTALLED RIP-RAP APRON, OR BE ALLOWED TO ENTER THE DOWNSTREAM WATERS.

AS AN ALTERNATE TO THE CIPP LINER, A PIPE LINER WITH GROUT SURROUND MAY BE INSTALLED. TYPICAL DETAILS FOR A PIPE LINER ARE INCLUDED IN THESE PLANS, BUT CONTRACTOR AND SUPPLIER MUST COORDINATE WITH DESIGN ENGINEER AND CHARLES COUNTY PRIOR TO INSTALLATION.



LOCATION PLAN
SCALE 1" = 100'

TEMPORARY DEWATERING BYPASS LINE NOTES:

1. PROPOSED AREA FOR TEMPORARY PUMP(S) FOR DEWATERING AND BYPASS LINE ONCE THE MANHOLE IS PLUGGED.
2. PROPOSED 20' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
3. PROPOSED 12' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
4. AREA OF TEMPORARY BYPASS LINE DISCHARGE. IN THE AREA OF THE PROPOSED RIP RAP APRON. THE LINE SHALL BE RUN TO AVOID PIPE REHABILITATION STAGING AND INSTALLATION AREA. CONTRACTOR TO INSTALL AT LEAST 20' OF RIP-RAP BELOW BYPASS OUTFALL, & INSTALL DIRTBAG FOR WATER FILTERING (IF REQUIRED), TO PREVENT EROSION IN RECEIVING WATERWAY.

OWNER'S/DEVELOPERS CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION, VEGETATIVE STABILIZATION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT TO ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS AND THE REPRESENTATIVES OF THE CHARLES SOIL CONSERVATION DISTRICT.

DATE _____ OWNER/DEVELOPER SIGNATURE
CARD NO. _____ PRINTED NAME AND TITLE
TELEPHONE NUMBER (301) 885-1254
ADDRESS P.O. BOX 2130, LAPLATA, MD. 20646-2130

CONSULTANTS CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR CURRENT REVISIONS THEREOF, AND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT REGULATIONS.

MD P.E. LICENSE # 36310
MD LAND SURVEYOR LICENSE # N/A
MD LANDSCAPE ARCHITECT # N/A
NAME RICHARD F. HILLE
FIRM NAME VISTA DESIGN, INC.
STREET ADDRESS 11634 WORCESTER HWY SHOWELL, MD 21862

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN MEETS OR EXCEEDS THE REQUIREMENTS OF THE STORMWATER MANAGEMENT & STORM DRAINAGE ORDINANCE, FLOODPLAIN MANAGEMENT ORDINANCE, GRADING ORDINANCE, ROAD ORDINANCE, WATER & SEWER ORDINANCE, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II, ALL STATE AND FEDERAL CODES, THE CHARLES COUNTY STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION MANUAL, THE CHARLES COUNTY DETAILS MANUAL, THE APPROVED SITE PLAN OR PRELIMINARY PLAN, AND OTHER ORDINANCES AND REGULATIONS AND ANY CONDITIONS APPROVED BY CHARLES COUNTY.

RICHARD F. HILLE 3/15/11
REGISTERED PROFESSIONAL ENGINEER DATE
36310
LICENSE NUMBER

ADJACENT / AFFECTED PROPERTIES:

BLOCK / LOT	TAX MAP ID	OWNER INFO	STREET ADDRESS	PHONE CONTACT	ADJACENT TO WORK	RIGHT OF ENTRY REQUIRED
SECTION 2 /4	TM9 TM111	FARRELL, LEONARD E & TERRIE L	12645 COUNTRY LANE	(301)-645-7912	X	
C / 10	TM9 P80	REVORE, GEORGE E JR & LINDA A	2000 DOGWOOD DRIVE	(301)-843-5328	X	
C / 11	TM9 P80	JOHNSON, AUBREY A & CAROLYN A	2002 DOGWOOD DRIVE	(301)-645-6345	X	
C / 12	TM9 P80	VANCE, PATRICIA A	2004 DOGWOOD DRIVE	(301)-638-7604	X	
C / 13	TM9 P80	HENDRICKS, CHRISTOPHER & JENNIFER	2006 DOGWOOD DRIVE	(301)-638-3637	X	
D / 9	TM9 P80	MAMEDSLASAN, TENAH P	2008 DOGWOOD DRIVE	UNLISTED NUMBER	X	
D / 10	TM9 P80	OLSZEWSKI, CLARA & MARY HONSON	2010 DOGWOOD DRIVE	UNLISTED NUMBER	X	
H / 24	TM9 P80	CERONA, ANGELO V & E SANTOS ES AL	9006 HOLLY AVENUE	UNLISTED NUMBER		X
H / 25	TM9 P80	ROTH, PAMELA & HUBERT J	8004 HOLLY AVENUE	UNLISTED NUMBER		X
H / 26	TM9 P80	WSS INVESTMENTS LLC	8002 HOLLY AVENUE	UNLISTED NUMBER	X	
H / 27	TM9 P80	BROOKBANK, SAMUEL E & JOYCE A	8000 HOLLY AVENUE	UNLISTED NUMBER	X	
A / 7	TM9 P80	BUTLER, AMY C & GERALD R	1015 SPRUCE STREET	UNLISTED NUMBER	X	
B / 9	TM9 P80	GRAY, ALICE & MELISSA J RICHARDSON	2013 DOGWOOD DRIVE	(301)-843-1058	X	
B / 10	TM9 P80	STEPHENS, CHENET & SYNTHIA	2011 DOGWOOD DRIVE	(240)-222-2865	X	
B / 11	TM9 P80	MOBLEY, JEAN M	2009 DOGWOOD DRIVE	(240)-479-3409	X	
B / 12	TM9 P80	FISCHER, DEREK M & ANDREA D	2007 DOGWOOD DRIVE	UNLISTED NUMBER	X	
B / 13	TM9 P80	GUYER, FRANCES D	2005 DOGWOOD DRIVE	(301)-870-6899	X	
B / 14	TM9 P80	GASKINS, ORIS M & MARY C TRS	2003 DOGWOOD DRIVE	(301)-843-7156	X	
B / 15	TM9 P80	CLARK, MARK L	2001 DOGWOOD DRIVE	(240)-419-2817	X	
	TM9 P23	CHARLES COUNTY, MD	12705 COUNTRY LANE		X	COUNTY OWNED

VICINITY MAP

CHARLES SOIL CONSERVATION DISTRICT APPROVAL

CHARLES SCD SEDIMENT AND EROSION CONTROL PLAN NUMBER 20-10

CHARLES SCD SMALL POND APPROVAL NUMBER(S) _____

SEDIMENT AND EROSION CONTROL PLAN AND SMALL POND (IF APPLICABLE) IS HEREBY APPROVED BY THE CHARLES SOIL CONSERVATION DISTRICT.

THIS APPROVAL EXPIRES _____
WRITTEN REQUEST FOR EXTENSION MAY BE SUBMITTED TO THE DISTRICT.

THIS PLAN MEETS THE TECHNICAL REQUIREMENTS OF THE U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE.

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO. 36310 , EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

			REMARKS OR CONDITIONS
GRADING	CONSTRUCTION	AS-BUILT	
ROADS	CONSTRUCTION	AS-BUILT	
STORM DRAINAGE	CONSTRUCTION	AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION	AS-BUILT	
WATER	CONSTRUCTION	AS-BUILT	
SEWER	CONSTRUCTION	AS-BUILT	
OTHER	CONSTRUCTION	AS-BUILT	

SIGNED: _____ THIS PERMIT EXPIRES ON:
DATE: _____ DATE: _____

COVER SHEET

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

DRAWN BY:	RJ
CHECK BY:	RFF
CHARLES COUNTY	
WALDORF, MARYLAND	
F.E. NO.	
T.M. NO.	
DATE:	05/11/10
SCALE:	AS SHOWN

09-060
PROJ. NO.
DOGWOOD.dwg
File Name:
1
SHEET NO.

PGM# VCI 9-0111

DOGWOOD DRIVE

STORM DRAIN MAINTENANCE, REPAIR & LINING PLAN
COUNTRY CLUB SOUTH PORTION OF PINEFIELD
CHARLES COUNTY, MARYLAND

SITE DATA

OWNER
VARIOUS OWNERS
SEE TABLE THIS SHEET

ENGINEER/SURVEYOR
VISTA DESIGN, INC.
11634 WORCESTER HIGHWAY
SHERELL, MARYLAND 21663
PH: (410) 352-3870
FAX: (410) 352-3875

WETLAND CONSULTANT
ENVIRONMENTAL CONSULTANTS, INC.
20110 DUFFERY DRIVE
SLIGO, MD 20879
PH: (301)-436-9637

SITE LOCATION
TAX MAP 9
DOGWOOD DRIVE
PARCELS: 22, 80 AND 111

FLOOD ZONE
THIS SITE IS LOCATED WITHIN FLOOD ZONE "A1-3", "B" (AREA IN BETWEEN LIMITS OF THE 500-YEAR FLOOD AND 100-YEAR FLOOD) OR CERTAIN AREAS SUBJECT TO 100-YEAR FLOODING WITH AVERAGE DEPTHS LESS THAN ONE (1) FOOT) AND "C" (AREA OF MINIMAL FLOODING) PER FIRM MAP #24017C0020D DATED JUNE 5, 1991

WATERS OF THE US & NON-TIDAL WETLANDS
NON-TIDAL WETLANDS AND WATERS OF THE US HAVE BEEN FIELD DELINEATED BY ENVIRONMENTAL RESOURCES, INC., ON MAY 4, 2010 AND ARE SHOWN ON THESE PLANS. IMPACTS TO THE WATERS OF THE US, DELINEATED WETLANDS OR THE 25 FOOT BUFFER, ARE AS SHOWN ON THE ATTACHED PLANS.

SHEET INDEX

1. COVER SHEET
2. SITE PLAN
3. TEMPORARY STAGING, ACCESS ROAD, RIP-RAP PLACEMENT AND WETLAND IMPACTS PLAN
4. HEADWALL, DEBRIS CAGE AND WETLAND IMPACTS AT 48" RCP PLAN AND DETAILS
5. DETAILS
6. CIPP & PIPE LINER DETAILS & NOTES
7. ERUSION & SEDIMENT CONTROL DETAILS & NOTES
8. FLOODWALL DEWATERING AREA MAP

APPENDIX A: DOGWOOD DRIVE, SUPPLEMENTAL STORMWATER PIPE REHABILITATION REPORT

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT SPECIFICATIONS MANUAL, THE LATEST CHARLES COUNTY DETAIL MANUAL AND IN ACCORDANCE WITH CURRENT COUNTY ORDINANCES.
2. CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO ANY EXCAVATION. ANY TO LOCATE ALL EXISTING UTILITIES IN THE WORK AREA AND CONFLICTS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
3. THE CONTRACTOR IS RESPONSIBLE TO HOLD A "PRECONSTRUCTION" MEETING TO INCLUDE THE CONTRACTOR, CHARLES COUNTY INSPECTION PERSONNEL, PUBLIC UTILITIES, AND ANY LOCAL, STATE OF FEDERAL AGENCIES AS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT/DEVELOPMENT SERVICES DIVISION 48 HOURS PRIOR TO THE START OF ALL CONSTRUCTION IN ACCORDANCE TO ALL PERMITS ISSUED & LOCATED AND ...
5. MAXIMUM SLOPES SHALL BE NOT GREATER THAN THREE (3) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL (3:1)FEET) THE RIGHT-OF-WAY. SLOPES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE NOT GREATER THAN TWO (2) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL, OR AS DESIGNED IN THE COUNTY ROAD ORDINANCE AND IN THE CHARLES COUNTY DETAIL MANUAL.
6. COMPACTION TESTS AND REPORTS ARE REQUIRED FOR ALL TRENCHING WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE COUNTY SPECIFICATIONS MANUAL AND GRADING ORDINANCE. FINAL REPORTS AND CERTIFICATIONS SHALL BE PROVIDED PRIOR TO THE FINAL INSPECTIONS.
7. CERTIFIED COMPACTION TESTS AND REPORTS SHALL BE SUBMITTED ON A WEEKLY BASIS THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED BY THE SPECIFICATIONS MANUAL.
8. AS-BUILT PLANS SHALL BE SUBMITTED PRIOR TO FINAL INSPECTIONS.
9. WITH APPROVAL FROM THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, ALL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE REMOVED PRIOR TO THE RELEASE OF BONDS.
10. PRIOR TO BOND RELEASE, ALL OUTFALLS SHALL BE INSPECTED AND IMPROVED BY COUNTY.
11. TEMPORARY SHORING IS AT TWO (2) FOOT DEPTH INTERVALS AS PROVIDED BY SAUNDERS AND ASSOCIATES, DATED JUNE 22, 2011. THE DEPTH SHOWN IS BASED ON THE NAVD 88 DATUM. THE HORIZONTAL DATUM IS BASED ON THE NAD 83 DATUM.
12. THE CONTRACTOR SHALL NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-1008, FIVE (5) DAYS PRIOR TO THE START OF WORK, AND UPON COMPLETION WHEN SEDIMENT CONTROL IS READY TO BE REMOVED.
13. ALL STREET SIGNS AND REGULATORY SIGNS WILL BE IN PLACE BEFORE PLACEMENT OF ANY ASPHALT. REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR PROVIDING SIGNAGE AND PLACEMENT REQUIREMENTS.
14. ALL STORM DRAINS MUST HAVE A MINIMUM COVER OF 12" VERTICAL COVER BETWEEN ALL OTHER UTILITIES.
15. CONTRACTOR TO IMMEDIATELY NOTIFY CHARLES COUNTY PLAN AND DESIGN ENGINEER IF FIELD CONDITIONS EXISTS OTHER THAN SHOWN ON PLANS. CONTRACTOR WILL REVIEW CURRENT CONDITIONS AND ADVISE PROCEDURE/ACTION ON HOW TO PROCEED.
16. THE DEVELOPER OR CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TO THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT A LETTER OF MATERIAL CERTIFICATION FROM THE SUPPLIERS FOR ALL PRECAST STRUCTURES RELATED TO STORM DRAIN SYSTEMS AND STORMWATER MANAGEMENT FACILITIES IN THE FOLLOWING FORMAT:
   16.1. CONTRACTOR'S NAME AND ADDRESS
   16.2. PROJECT NAME AND STRUCTURE NUMBER
   16.3. MANUFACTURER'S PRODUCT CERTIFICATION
   16.4. TYPE AND QUALITY OF PRODUCT
   16.5. SHOP DRAWINGS SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
   16.6. THE DEVELOPER OR HIS AGENT WILL NOTIFY THE DEPARTMENT FOR FINAL INSPECTION WHEN THE COMPLETION OF PERMITTED WORK PER APPROVED PLANS. THE DEPARTMENT WILL REQUIRE THE FOLLOWING FOR THEIR FILES:
   17.1. AS THE BUILT DRAWINGS(BUILT PLAN AND SURVEY BY A REGISTERED LAND SURVEYOR AND/OR PROFESSIONAL ENGINEER AT THE SAME SCALE AS THE ORIGINAL PLAN AND SHOWING ALL IMPROVEMENTS AND PLANS GRADES.
   17.2. CERTIFICATION BY THE CONTRACTOR THAT ALL DRAINAGE, EROSION CONTROL, WETLANDS, AND PERMANENT FACILITIES AND VEGETATIVE MEASURES HAVE BEEN COMPLETED IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
   17.3. A REPORT SUMMARIZING THE INSPECTIONS AND TEST RESULTS AS PER SECTIONS 10.2 AND 10.4 OF THE CHARLES COUNTY STORMWATER ORDINANCE.
18. THE CONTRACTOR SHALL SUBMIT TO THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT CONCRETE CULVERTS DRAIN REPORTS CERTIFIED BY A PROFESSIONAL ENGINEER FOR ALL CAST-IN-PLACE STRUCTURES USED FOR STORM DRAIN SYSTEMS AND/OR STORMWATER MANAGEMENT FACILITIES.
19. ALL SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARD DETAILS GIVEN IN MDE'S "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL".
20. ALL SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND PLACED IN OPERATION BEFORE EXCAVATION IS STARTED. THE CONTRACTOR SHALL REGARD THE SEDIMENT CONTROL DEVICES AS NECESSARY TO MEET FIELD CONDITIONS, KEEP THEM CLEAN AND IN WORKING ORDER DURING CONSTRUCTION. NO SEDIMENT CONTROL DEVICE SHALL BE REMOVED UNTIL THE ENTIRE AREA DRAINING TO IT HAS BEEN PERMANENTLY STABILIZED, INSPECTED AND APPROVED BY CHARLES COUNTY SEDIMENT CONTROL INSPECTOR.
21. THE CONTRACTOR SHALL TAKE WHATEVER PRECAUTIONS ARE NECESSARY TO KEEP MUD AND DEBRIS FROM OCCUR TRACKED ON PUBLIC ROADS.
22. APPROVAL OF CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-1008 SHALL BE REQUESTED BY THE OWNER/DEVELOPER UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
23. EROSION AND SEDIMENT CONTROLS, AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT, BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY.
24. SEDIMENT AND EROSION CONTROLS CANNOT BE REMOVED UNTIL THE SITE HAS ADEQUATE STABILIZATION. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE BEEN DRAINED DRY TO BE CONSIDERED ADEQUATE STABILIZED AND THE SEDIMENT CONTROL INSPECTOR HAS APPROVED SUCH REMOVAL.

REQUIRED PERMITS

PRIOR TO ANY DEVELOPMENT OF THE SITE, THE FOLLOWING PERMITS / AUTHORIZATIONS WILL BE REQUIRED:

- MARYLAND STORMWATER WAIVER FROM THE CHARLES SOIL CONSERVATION DISTRICT
- DEVELOPMENT SERVICES PERMIT FROM CHARLES COUNTY PLAN
- WETLAND IMPACT PERMIT FROM MDE AND USACE.

WETLANDS AND WATERS OF THE US NOTE:

THE US ARMY CORPS OF ENGINEERS PERMIT FOR WORK TO BE PERFORMED IN THE NONTIDAL WETLANDS AS WELL AS WITHIN THE WATERS OF THE US SHALL BE REQUIRED TO FURTHER DETAIL OF CONSTRUCTION AND TIMELINE WITHIN THESE AREAS.

NOTE:
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NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appertained.

SITE ANALYSIS:

1. TOTAL DRAINAGE AREA: +/- 191.25 Ac (138 Ac TO NEW HEADWALL)
2. DISTURBED AREA: +/- 14,344 SF (0.33 Ac)
3. VOLUME OF SPOIL BORROW MATERIAL: +/- 15 C.Y.
4. OFF-SITE BORROW/WASTE AREA LOCATION: AS APPROVED BY CHARLES COUNTY
5. VOLUME OF EXCAVATION: +/- 15 C.Y.

OVERVIEW OF WORK TO BE PERFORMED (SEE SEQUENCE OF CONSTRUCTION, SHEET 7):

- [A] HEADWALL TO BE INSTALLED AT END OF EXISTING 48" RCP. DEBRIS CAGE TO BE ATTACHED TO NEW HEADWALL OVER EXISTING 48" RCP TO PROTECT THE PIPE NETWORK FROM DEBRIS. (SEE DETAIL SHEET 4).
- [B] EXISTING BURIED MANHOLE TO BE UNCOVERED. NEW RISER, TOP AND COVER TO BE INSTALLED TO PROVIDE ACCESS TO MANHOLE AND PIPING PER CHARLES COUNTY STANDARDS AND SPECIFICATIONS. (SEE DETAILS SHEET 5).
- [C] AREA OF FAILED 72" CMP PIPE TO BE REMOVED AND REPLACED. REMOVE SECTION TO THE NEAREST JOINT ON EACH SIDE OF THE FAILED SECTION. PROPERLY CONNECT NEW 72" CMP TO EXISTING PIPING WITH PROPER COUPLING SYSTEM, AS PER MANUFACTURER'S SPECIFICATIONS. NEW CONNECTION SHALL BE WATER TIGHT AND STRUCTURALLY SOUND. PIPE BEDDING, APPLY AND BOND SHALL MEET OR EXCEED THE CHARLES COUNTY AND MANUFACTURERS SPECIFICATIONS FOR PIPE INSTALLATION. DRIVEWAYS SHALL BE REPAIRED TO CHARLES COUNTY STANDARDS WITH CORRESPONDING MATERIALS. (SEE DETAILS SHEET 5).
- [D] MANHOLE OUTFALL TO BE BLOCKED DURING REHABILITATION OF 72" CMP. CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY DEWATER THE MANHOLE AND PUMP THE RUNOFF VIA BYPASS LINE TO THE OUTFALL AREA AS SHOWN. EXISTING STREAM TO THE PIPE NETWORK CARRIES A VARIABLE BASELINE (DEPENDING ON TIME OF YEAR) FLOW, WITH AN APPROXIMATE 2-YEAR STORM RUNOFF RATE = 115 CFS AND APPROXIMATE 10-YEAR STORM RUNOFF RATE = 230 CFS. PUMPS SHALL BE COORDINATED TO PROVIDE SUFFICIENT CAPACITY TO CONVEY THE REQUIRED FLOWS SHOULD ANY RAIN EVENT(S) OCCUR.
- [E] AREA OF PROPOSED RIP-RAP OUTFALL PROTECTION. EXISTING VEGETATION AND DEBRIS TO BE REMOVED, AND AREA GRADED PRIOR TO INSTALLATION OF 82" LONG, 17" WIDE, 3" THICK, Dm=18" APRON. (SEE DETAIL SHEET 5).
- [F] APPROXIMATELY 808 L.F. OF 72" CMP TO BE LINED BY MEANS OF 72" CIPP OR 68" SPIRAL WOUND LINER PIPE AND GROUT IN ACCORDANCE WITH CIPP SPECIFICATIONS OR SPIRAL LINER DETAILS ON SHEET 6.
- [G] TEMPORARY STAGING AREA. STONE TO BE INSTALLED AS SHOWN AROUND STABILIZED CONSTRUCTION ENTRANCE AT HEAD OF SPRUCE STREET. SEE DETAIL THIS SHEET.
- [H] TEMPORARY CONSTRUCTION ACCESS ROAD TO BE CONSTRUCTED OF TIMBER OR COMPOSITE MAT MATERIAL, WITH AN ALLOWABLE IMPACT AREA OF UP TO 16' WIDE. THE ALIGNMENT AND INSTALLATION AREA IS ENVIRONMENTALLY SENSITIVE AND SHALL BE MINIMALLY IMPACTED THROUGHOUT THE PROJECT. MATS SHALL BE DESIGNED TO DISTRIBUTE THE VEHICLE LOAD OVER THE WIDTH OF THE ACCESS PATH TO MINIMIZE THE GROUND PENETRATION AND SOIL AND VEGETATION DISTURBANCE. NO GROUND PRESSURE, INCLUDING THE WEIGHT OF THE MATS, SHALL EXCEED 15 PSI. SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER, ENVIRONMENTAL CONSULTANT AND CHARLES COUNTY. THE CENTERLINE OF THE TEMPORARY ACCESS ROAD IS +/- 350' IN LENGTH APPROXIMATELY 8 TREES ARE LOCATED IN THE VICINITY OF THE TEMPORARY STAGING AREA AND ACCESS ROAD. IF NEEDED FOR INSTALLATION OF THE TEMPORARY STAGING AREA AND ACCESS ROAD, THESE TREES MAY BE REMOVED IF THEY CANNOT BE AVOIDED. THE ENVIRONMENTAL CONSULTANT OF RECORD FOR THIS PROJECT SHALL BE NOTIFIED IN ORDER TO COORDINATE THE FLAGGING OF THE TREES PRIOR TO REMOVAL. THE TREES ARE LISTED BELOW. IF THE TREES ARE FELLED FOR ACCESS, NOTHING SHALL REMAIN THAT IS LARGER THAN 6" IN DIAMETER. IN ADDITION, THE CANOPIES SHALL BE CHOPPED 18" AND NOT LEFT AS WHOLE.
- [I] APPROXIMATE AREA OF EXISTING DITCH. A TEMPORARY CULVERT CROSSING, MINIMUM 6" SIZE, SHALL BE INSTALLED, IF NEEDED TO PROVIDE POSITIVE DRAINAGE UNDER TEMPORARY ACCESS ROAD. MATS SHALL BE BRIDGED OVER THE CULVERT AND FEATHERED ON EACH SIDE.

PLAN NARRATIVE

THE PURPOSE OF THIS PLAN IS TO REHABILITATE A STORMDRAIN PIPE NETWORK ALONG DOGWOOD DRIVE IN THE COUNTRY CLUB SOUTH SECTION OF THE PINEFIELD COMMUNITY IN WALDORF, MD.

AS PART OF THIS EFFORT, THE CONTRACTOR SHALL:

- INSTALL HEADWALL ON THE EXISTING 48" RCP PIPE AT SOUTH END OF DOGWOOD DRIVE.
- INSTALL DEBRIS CAGE ATTACHED TO NEW HEADWALL AT 48" RCP.
- CLEAN ALL PIPES IN THE NETWORK OF ACCUMULATED DEBRIS.
- INSTALL MANHOLE RISER, TOP RING AND LID ON EXISTING BURIED MANHOLE AT NORTHEAST CORNER OF DOGWOOD DRIVE AND COUNTRY LANE.
- REMOVE/REPLACE DAMAGED SECTIONS (2) OF EXISTING 72" CMP ON NORTH SIDE OF DOGWOOD DR AT APPROXIMATELY 25' AND 354' NORTH OF MANHOLE 5.
- CLEAR DEBRIS FROM OUTFALL OF THE 72" CMP AND INSTALL A NEW RIP-RAP APRON.
- LINE ENTIRE LENGTH OF THE 72" CMP (APPROXIMATELY 808 L.F.) WITH EITHER A HEAT CURED CIPP, REINFORCED LIGHT CURED CIPP, OR 'U' CAUGE ALUMINUM SPIRAL PIPE LINER WITH GROUT SURROUND.

THERE ARE TWO SECTIONS OF THE 72" CMP PIPE RUN THAT SHALL HAVE COLLAPSED UNDER THE DRIVEWAYS, AS SHOWN ON THE PLANS. THESE SECTIONS SHALL BE UNCOVERED AND REMOVED TO THE NEAREST PIPE JOINT ON EACH SIDE. NEW 72" CMP SHALL BE INSTALLED TO REPLACE THE FAILED SECTIONS. THE NEW SECTIONS SHALL BE PROPERLY CONNECTED TO THE EXISTING PIPING PER THE MANUFACTURER'S SPECIFICATIONS, PROVIDING STRUCTURAL INTEGRITY AND WATER TIGHTNESS TO THE PIPE RUN. PROPER BEDDING, BACKFILL AND FILL OVER THE PIPE SHALL BE INSTALLED, PER THE MANUFACTURER'S SPECIFICATIONS AND CHARLES COUNTY STANDARDS. THE DRIVEWAYS SHALL BE REPAIRED AND ANY ASSOCIATED DISTURBED AREAS ADJACENT TO THE DRIVEWAYS SHALL BE RETURNED TO CONDITIONS PRIOR TO CONSTRUCTION.

ONCE THE NEW SECTIONS ARE INSTALLED, THE ENTIRE NETWORK OF 48", 72" AND ASSOCIATED STRUCTURES AND PERIPHERAL PIPING SHALL BE CLEARED OF ALL SEDIMENT BUILD-UP AND DEBRIS. THE FLUSH WATER SHALL BE FILTERED (SCREENED TO AVOID INTRODUCING LARGE AMOUNTS OF SEDIMENT AND DEBRIS TO THE WATERWAY DOWNSTREAM. THE CAPTURED SEDIMENT AND DEBRIS SHALL BE DISPOSED OF PROPERLY OFF-SITE.

THE EXISTING 72" CMP PIPE SHALL BE REMEDIATED IN ORDER TO RESTORE AS MUCH OF THE ORIGINAL DESIGN FLOW AREA AS POSSIBLE. A CURED IN PLACE PIPE (CIPP) LINING SHALL BE INSTALLED INSIDE THE 72" PIPE RUN FROM MANHOLE 5 TO THE OUTFALL ONCE THE TWO COLLAPSED SECTIONS HAVE BEEN REPLACED. THE CIPP SHALL PROVIDE ADDITIONAL STRUCTURAL INTEGRITY TO THE PIPE, PROVIDE WATER TIGHTNESS TO THE PIPE RUN FOR THE ENTIRE LENGTH, PREVENT ADDITIONAL ROOT INTRUSION, ENHANCE THE FLOW RATE, AND IMPROVE THE OVERALL CONDITIONS OF THE PIPE RUN TO PROVIDE POSITIVE DRAINAGE. THE CIPP MAY BE ACCOMPLISHED BY UTILIZING TRADITIONAL CIPP TECHNOLOGIES OR A COMPOSITE CIPP SOLUTION.

DURING CURING OF THE CIPP, THE RUNOFF FROM THE CURING PROCESS SHALL BE CAPTURED AND TREATED PROPERLY OFF-SITE. THE RUNOFF SHALL NOT DISCHARGE TO THE NEWLY INSTALLED RIP-RAP APRON, OR BE ALLOWED TO ENTER THE DOWNSTREAM WATERS.

AS AN ALTERNATE TO THE CIPP LINER, A PIPE LINER WITH GROUT SURROUND MAY BE INSTALLED. TYPICAL DETAILS FOR A PIPE LINER ARE INCLUDED IN THESE PLANS. BUT CONTRACTOR AND SUPPLIER MUST COORDINATE WITH DESIGN ENGINEER AND CHARLES COUNTY PRIOR TO INSTALLATION.

LOCATION PLAN
SCALE 1" = 100'

VICINITY MAP

TEMPORARY DEWATERING BYPASS LINE NOTES:

1. PROPOSED AREA FOR TEMPORARY PUMP(S) FOR DEWATERING AND BYPASS LINE. ONCE THE MANHOLE IS PLUGGED.
2. PROPOSED 20' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
3. PROPOSED 12' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
4. AREA OF TEMPORARY BYPASS LINE DISCHARGE. IN THE AREA OF THE PROPOSED RIP RAP APRON, THE LINE SHALL BE RUN TO AVOID PIPE REHABILITATION STAGING AND INSTALLATION AREA. CONTRACTOR TO INSTALL AT LEAST 20' OF RIP-RAP BELOW BYPASS OUTFALL & INSTALL SWITRAG FOR WATER FILTERING (IF REQUIRED) TO PREVENT EROSION IN RECEIVING WATERWAY.

OWNER'S/DEVELOPERS CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL SIDEWALK, GRADING, CONSTRUCTION, VEGETATIVE STABILIZATION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY REVIEWING PERSONNEL NOMINATED BY THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED DRAINAGE PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT TO ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS OR REPRESENTATIVES OF THE CHARLES SOIL CONSERVATION DISTRICT.

3-17-11
37043
John Stevens, Chief of CS

CONSULTANTS CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE MDE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR CURRENT REVISIONS THEREOF, AND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT REGULATIONS.

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN MEETS OR EXCEEDS THE REQUIREMENTS OF THE STORMWATER MANAGEMENT & STORM DRAINAGE ORDINANCE, FLOODPLAIN MANAGEMENT ORDINANCE, GRADING ORDINANCE, ROAD ORDINANCE, WATER & SEWER ORDINANCE, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II, ALL STATE AND FEDERAL CODES, THE CHARLES COUNTY STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION MANUAL, THE CHARLES COUNTY DETAILS MANUAL, THE APPROVED SITE PLAN OR PRELIMINARY PLAN, CIPP PROCEDURES AND REGULATIONS AND ANY CONDITIONS APPROVED BY CHARLES COUNTY.

3/15/11

ADJACENT / AFFECTED PROPERTIES:

BLOCK / LOT	TAX MAP ID	OWNER INFO	STREET ACCESS	PHONE CONTACT	ADJACENT TO WORK	PROVIDE OF ENTRY REQUIRED
SECTION 2 /14	9A9 9H11	FARRELL, LEONARD E & RUBIN A	10695 COUNTRY LANE	(301) 645-7912	X	
C / 10	9A9 F10	PEIGER, GEORGE E JR & LEIGH A	2000 DOGWOOD DRIVE	(301)-843-3558	X	
C / 11	9A9 F10	JAYNES, ROBERT A & CARROLL J	2002 DOGWOOD DRIVE	(301) 645-8345	X	
C / 12	9A9 F10	KNOX, RANDOR	2004 DOGWOOD DRIVE	(301) 638-7654	X	
C / 13	9A9 F10	HOLOWKA, CHRISTOPHER & JENNIFER	2006 DOGWOOD DRIVE	(301) 638-2637	X	
D / 9	9A9 F10	MAKRIDAKIS, SINAN P	2008 DOGWOOD DRIVE	UNLISTED NUMBER	X	
D / 10	9A9 F10	OLSZEWSKI, CLARA & MARY HENSON	2010 DOGWOOD DRIVE	UNLISTED NUMBER	X	
H / 24	9A9 F10	GERENA, ANGELO A & E. SANTOS JT	8004 HOLLY AVENUE	UNLISTED NUMBER		X
H / 25	9A9 F10	HOTH, PAMELA & HUBERT J	8004 HOLLY AVENUE	UNLISTED NUMBER		X
H / 26	9A9 F10	MDS INVESTMENTS LLC	8008 HOLLY AVENUE	UNLISTED NUMBER	X	
H / 27	9A9 F10	BROOKBANK, DANIEL E & JOYCE A	8006 HOLLY AVENUE	UNLISTED NUMBER	X	
A / 3	9A9 F10	BUTLER, AMY C & GERALD W	8015 SPRUCE STREET	UNLISTED NUMBER	X	
B / 9	9A9 F10	DRAY, ALICE M & MELISSA / HOWANDER	2013 DOGWOOD DRIVE	(301)-843-1708	X	
B / 10	9A9 F10	STEPHENS, ERNEST & STEPHENS	2017 DOGWOOD DRIVE	(240)-222-0565	X	
B / 11	9A9 F10	MORRIS, JEAN M	2019 DOGWOOD DRIVE	(240)-419-1429	X	
B / 12	9A9 F10	FISHER, DEBRA M & ANDREA D	2017 DOGWOOD DRIVE	UNLISTED NUMBER	X	
B / 13	9A9 F10	EUTEN, FRANCIS D	2015 DOGWOOD DRIVE	(301)-870-8898	X	
B / 14	9A9 F10	STOKINS, DENIS M & MARY D TRS	2009 DOGWOOD DRIVE	(301)-843-7708	X	
B / 15	9A9 F10	OLSON, ANNA L	2007 DOGWOOD DRIVE	(240)-419-0817	X	
	9A9 F10	CHARLES COUNTY MD	10705 COUNTRY LANE		X	COUNTY OWNED

CHARLES SOIL CONSERVATION DISTRICT APPROVAL

CHARLES SOIL SEDIMENT AND EROSION CONTROL PLAN NUMBER: 36-58

CHARLES SOIL SMALL POND APPROVAL NUMBER(S): N/A

SEDIMENT AND EROSION CONTROL PLAN AND SMALL POND (IF APPLICABLE) IS HEREBY APPROVED FOR CHARLES SOIL CONSERVATION DISTRICT.

4/20/13

THIS APPROVAL EXPIRES ONE YEAR FROM THE DATE OF APPROVAL UNLESS A WRITTEN REQUEST FOR EXTENSION MAY BE SUBMITTED TO THE DISTRICT.

THIS PLAN MEETS THE TECHNICAL REQUIREMENTS OF THE VESTA NATURAL RESOURCES CONSERVATION SERVICE.

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSE NO.: 36858 EXPIRATION DATE: 01/21/2014

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

			REMARKS OR CONDITIONS
GRADING	CONSTRUCTION	AS-BUILT	
ROADS	CONSTRUCTION	AS-BUILT	
STORM DRAINAGE	CONSTRUCTION	AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION	AS-BUILT	
WATER	CONSTRUCTION	AS-BUILT	
SEWER	CONSTRUCTION	AS-BUILT	
OTHER	CONSTRUCTION	AS-BUILT	
SIGNED:			THIS PERMIT EXPIRES ON:
DATE:			DATE:

COVER SHEET

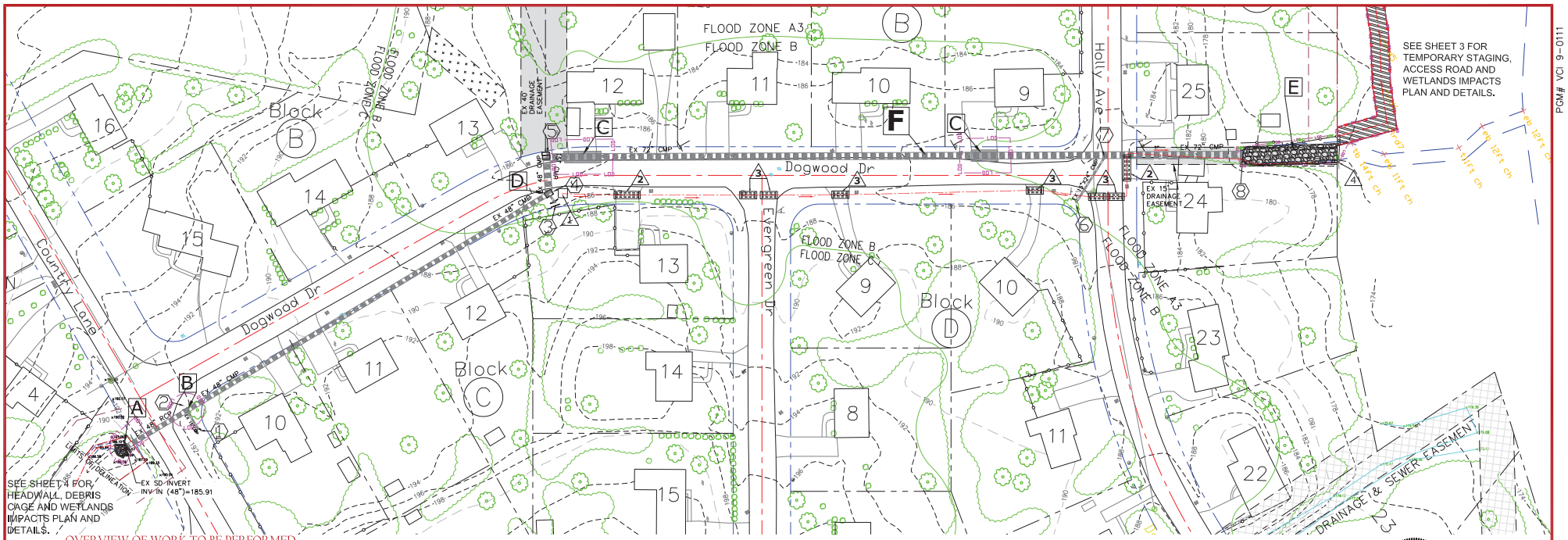
REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Sherell, MD 21663
ph 410.352.3870 fax 410.352.3875 email vista@vistadesigninc.com

PROJECT DATA
DRAWN BY: SJ
CHECK BY: RP
CHARLES COUNTY
WALDORF, MARYLAND
F.B. NO.:
T.M. NO.:
DATE: 03/11/10
SCALE: AS SHOWN

09-060
PROJ. NO.
DOGWOOD.dwg
File Name
1
SHEET NO.

PGM# VCI 9-0111



PGM# VCI 9-0111

OVERVIEW OF WORK TO BE PERFORMED (SEE SEQUENCE OF CONSTRUCTION, SHEET 7):

A. HEADWALL TO BE INSTALLED AT END OF EXISTING 48" RCP. DEBRIS CAGE TO BE ATTACHED TO NEW HEADWALL OVER EXISTING 48" RCP TO PROTECT THE PIPE NETWORK FROM DEBRIS. (SEE DETAIL SHEET 4).

B. EXISTING BURIED MANHOLE TO BE UNCOVERED. NEW RISER, TOP AND COVER TO BE INSTALLED TO PROVIDE ACCESS TO MANHOLE AND PIPING, PER CHARLES COUNTY STANDARDS AND SPECIFICATIONS. (SEE DETAILS SHEET 5).

C. AREA OF FAILED 72" CMP PIPE TO BE REMOVED AND REPLACED. REMOVE SECTION TO THE NEAREST JOINT ON EACH SIDE OF THE FAILED SECTION. PROPERLY CONNECT NEW 72" CMP TO EXISTING PIPING WITH PROPER COUPLING SYSTEM, AS PER MANUFACTURER'S SPECIFICATIONS. NEW CONNECTION SHALL BE WATER TIGHT AND STRUCTURALLY SOUND. PIPE BEDDING, INFILL AND COVER SHALL MEET OR EXCEED THE CHARLES COUNTY AND MANUFACTURERS SPECIFICATIONS FOR PIPE INSTALLATION. DRIVEWAYS SHALL BE REPAIRED TO CHARLES COUNTY STANDARDS WITH CORRESPONDING MATERIALS (SEE DETAILS, SHEET 5).

D. MANHOLE OUTFALL TO BE BLOCKED DURING REHABILITATION OF 72" CMP. CONTRACTOR SHALL BE RESPONSIBLE TO PROPERLY DEWATER THE MANHOLE AND PUMP THE RUNOFF VIA BYPASS LINE TO THE OUTFALL AREA AS SHOWN. EXISTING STREAM TO THE PIPE NETWORK CARRIES A VARIABLE BASELINE (DEPENDING ON TIME OF YEAR) FLOW, WITH AN APPROXIMATE 2-YEAR STORM RUNOFF RATE = 115 CFS AND APPROXIMATE 10-YEAR STORM RUNOFF RATE = 230 CFS. PUMPS SHALL BE COORDINATED TO PROVIDE SUFFICIENT CAPACITY TO CONVEY THE REQUIRED FLOWS SHOULD ANY RAIN EVENT(S) OCCUR.

E. AREA OF PROPOSED RIP-RAP OUTFALL PROTECTION. EXISTING VEGETATION AND DEBRIS TO BE REMOVED, AND AREA GRADED PRIOR TO INSTALLATION OF 82' LONG, 17' WIDE, 3' THICK, D50=18" APRON. (SEE DETAIL SHEET 3.)

F. APPROXIMATELY 608 L.F. OF 72" CMP TO BE LINED BY MEANS OF 72" CIPP OR 68" SPIRAL WOUND LINER PIPE AND GROUT IN ACCORDANCE WITH CIPP SPECIFICATIONS OR SPIRAL LINER DETAILS ON SHEET 6.

EXISTING SWM STRUCTURE SCHEDULE

TYPE-NUMBER	RIM ELEV.	INV IN	INV IN	INV OUT
PIPE ENT. ①		(15") 189.81		
MH ② (BURIED)	191.95	(48") 185.13	(15") 188.00 (APPROX.)	(48") 185.13
HEADWALL/PIPE ENT. ③		(15") 183.78		
MH ④	186.05	(48") 179.53	(15") 182.52	(48") 177.81
MH ⑤	186.21	(48") 178.51		(48") 177.85
CB ⑥	183.06			(15"X24") 177.00
PIPE CONNECTION ⑦		(72") 174.00 (APPROX.)	(15"X24") 176.00 (APPROX.)	(72") 174.00 (APPROX.)
PIPE OUTFALL ⑧				(72") 173.31

LOCATION PLAN

SCALE 1" = 40'

NORTH

TEMPORARY DEWATERING BYPASS LINE NOTES:

1. PROPOSED AREA FOR TEMPORARY PUMP(S) FOR DEWATERING AND BYPASS LINE ONCE THE MANHOLE IS PLUGGED.
2. PROPOSED 20' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
3. PROPOSED 12' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
4. AREA OF TEMPORARY BYPASS LINE DISCHARGE. IN THE AREA OF THE PROPOSED RIP RAP APRON, THE LINE SHALL BE RUN TO AVOID PIPE REHABILITATION STAGING AND INSTALLATION AREA. CONTRACTOR TO INSTALL AT LEAST 20' OF RIP-RAP BELOW BYPASS OUTFALL, & INSTALL DIRTBAG FOR WATER FILTERING (IF REQUIRED), TO PREVENT EROSION IN RECEIVING WATERWAY.

LEGEND

Row Line
Boundary Line
Existing Vegetation Line
Existing Centerline of Road
Existing Edge of Pavement
Existing Building
Existing Contour 1x — 84
Existing Contour 5x — 80
Existing Centerline of Mattawoman Creek
Existing Soil Boundary
Proposed Temporary Staging Area
Proposed Temporary Access Easement/Mats
Proposed Rip-Rap Apron
Permanent Drainage Easement, Existing
Permanent Drainage Easement, Proposed
Area to Remove & Replace 72" Stormdrain
Limits of Disturbance — LOD
Silt Fence — SF
Proposed Bypass Pump Pipe Path — SSP
Ordinary High Water Line
Non Tidal Wetlands Boundary
25' Non Tidal Buffer
Pipe Slope Drain
Stabilized Construction Entrance — PG-U
Temporary Road/Driveway Crossing — MC

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36318, EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING		CONSTRUCTION	AS-BUILT	
ROADS		CONSTRUCTION	AS-BUILT	
STORM DRAINAGE		CONSTRUCTION	AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION	AS-BUILT	
WATER		CONSTRUCTION	AS-BUILT	
SEWER		CONSTRUCTION	AS-BUILT	
OTHER		CONSTRUCTION	AS-BUILT	
SIGNED:				THIS PERMIT EXPIRES ON:
DATE:				DATE:

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SITE PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Bishopville, MD 21862
ph. 410-352-1874 fax 410-352-2875 email: vista@vistadesigninc.com

PROJECT DATA

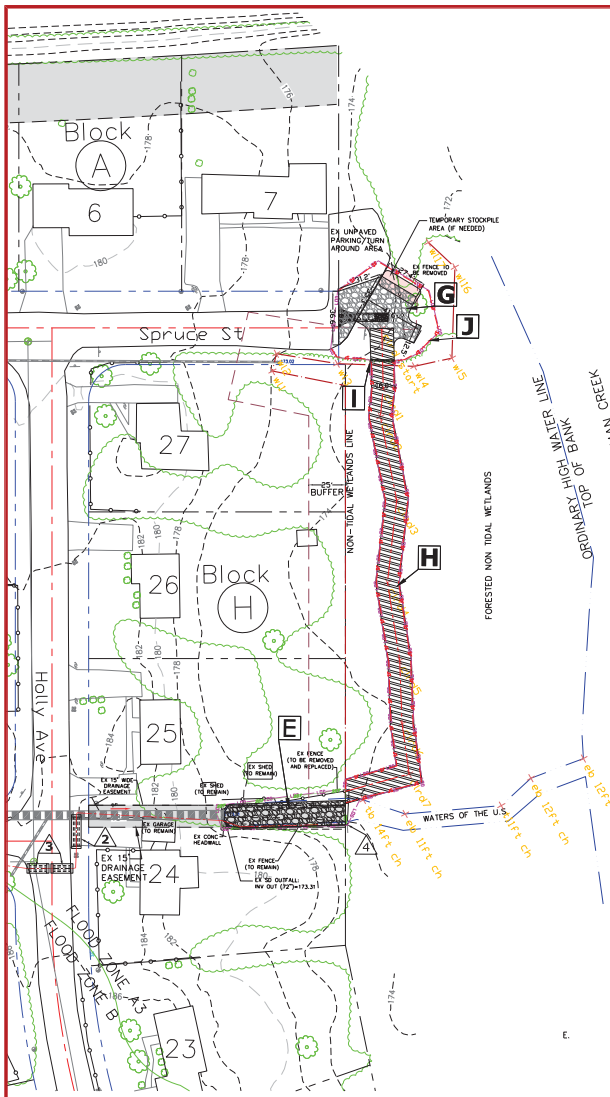
DRAWN BY:	BJ
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
J.M. NO:	
DATE:	05/11/10
SCALE:	AS SHOWN

PROJ. NO. 09-060

File Name: DOGWOOD.dwg

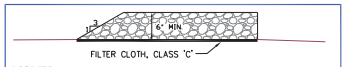
SHEET NO. 2

PGM# VCI 9-0111



TEMPORARY STAGING AND ACCESS ROAD LOCATION PLAN

SCALE 1" = 40'



NOTES

1. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.
2. 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 AREA.
3. SURFACE WATER – ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE STAGING AREA SHALL BE PIPED THROUGH THE AREA, 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. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUN-OFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
4. 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 AS SHOWN ON PLANS, AND APPROVED MDE WETLANDS PERMIT.
5. EXISTING CONDITIONS SHALL BE RESTORED ONCE STONE IS REMOVED AFTER CONSTRUCTION.

TEMPORARY STAGING AREA DETAIL

NTS

EXISTING TREES IN WETLANDS IMPACT AREA TO BE REMOVED:

MAT ROAD ALIGNMENT:	STAGING AREA:
1–10" RED MAPLE	1–8" BLACK GUM
1–8" SWEET GUM	1–8" SWEET GUM
1–6" RED MAPLE	1–4" RED MAPLE
1–12" RED MAPLE	1–14" SWAMP CHESTNUT OAK

TEMPORARY DEWATERING BYPASS LINE NOTES:

1. PROPOSED AREA FOR TEMPORARY PUMP(S) FOR DEWATERING AND BYPASS LINE ONCE THE MANHOLE IS PLUGGED.
2. PROPOSED 20' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
3. PROPOSED 12' WIDE TEMPORARY PAVEMENT CROSSING. (SEE DETAIL SHEET 6).
4. AREA OF TEMPORARY BYPASS LINE DISCHARGE. IN THE AREA OF THE PROPOSED RIP RAP APRON, THE LINE SHALL BE RUN TO AVOID PIPE REHABILITATION STAGING AND INSTALLATION AREA. CONTRACTOR TO INSTALL AT LEAST 20' OF RIP-RAP BELOW BYPASS OUTFALL, & INSTALL DIRTBAG FOR WATER FILTERING (IF REQUIRED), TO PREVENT EROSION IN RECEIVING WATERWAY.

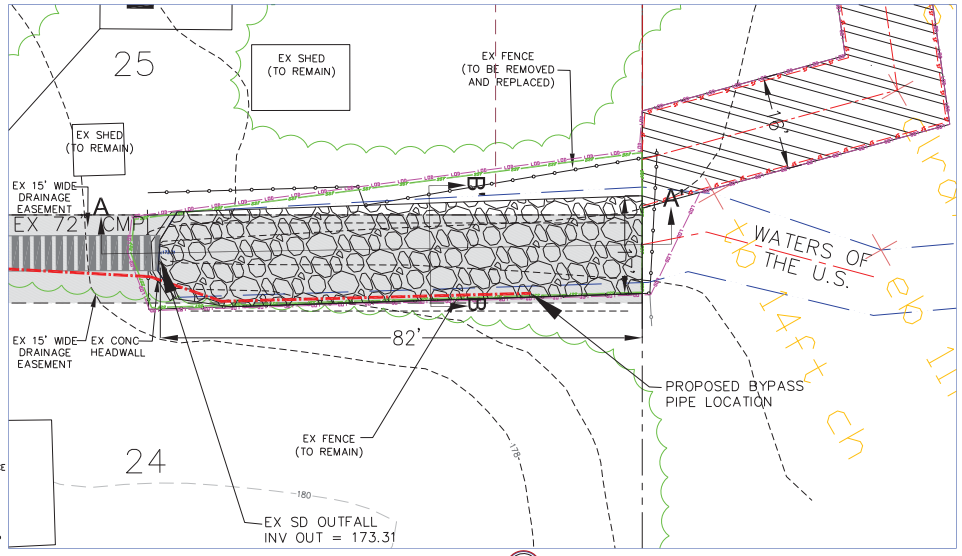
OVERVIEW OF WORK TO BE PERFORMED (SEE SEQUENCE OF CONSTRUCTION, SHEET 7):

E. AREA OF PROPOSED RIP-RAP OUTFALL PROTECTION. EXISTING VEGETATION AND DEBRIS TO BE REMOVED, AND AREA GRADED PRIOR TO INSTALLATION OF 82' LONG, 17' WIDE, 3' THICK, D_{50}=18" APRON. (SEE DETAIL SHEET 3.)

G. TEMPORARY STAGING AREA. STONE TO BE INSTALLED AS SHOWN AROUND STABILIZED CONSTRUCTION ENTRANCE AT HEAD OF SPRUCE STREET. SEE DETAIL THIS SHEET.

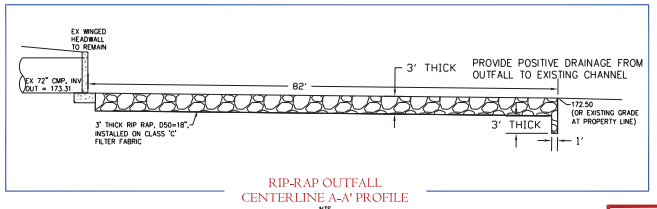
H. TEMPORARY CONSTRUCTION ACCESS ROAD TO BE CONSTRUCTED OF TIMBER OR COMPOSITE MAT MATERIAL, WITH AN ALLOWABLE IMPACT AREA OF UP TO 16' WIDE. THE ALIGNMENT AND INSTALLATION AREA IS ENVIRONMENTALLY SENSITIVE AND SHALL BE MINIMALLY IMPACTED THROUGHOUT THE PROJECT. MATS SHALL BE DESIGNED TO DISTRIBUTE THE VEHICLE LOAD OVER THE WIDTH OF THE ACCESS PATH TO MINIMIZE THE GROUND PENETRATION AND SOIL AND VEGETATION DISTURBANCE. NO GROUND PRESSURE, INCLUDING THE WEIGHT OF THE MATS, SHALL EXCEED 15 PSI. SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER, ENVIRONMENTAL CONSULTANT AND CHARLES COUNTY. THE CENTERLINE OF THE TEMPORARY ACCESS ROAD IS +/-350' IN LENGTH. APPROXIMATELY 8 TREES ARE LOCATED IN THE VICINITY OF THE TEMPORARY STAGING AREA AND ACCESS ROAD. IF NEEDED FOR INSTALLATION OF THE TEMPORARY STAGING AREA AND ACCESS ROAD, THESE TREES MAY BE REMOVED IF THEY CANNOT BE AVOIDED. THE ENVIRONMENTAL CONSULTANT OF RECORD FOR THIS PROJECT SHALL BE NOTIFIED IN ORDER TO COORDINATE THE FLAGGING OF THE TREES PRIOR TO REMOVAL. THE TREES ARE LISTED BELOW IF THE TREES ARE FELLED FOR ACCESS, NOTHING SHALL REMAIN THAT IS LARGER THAN 6" IN DIAMETER. IN ADDITION, THE CANOPIES SHALL BE CHOPPED UP AND NOT LEFT AS WHOLE.

I. APPROXIMATE AREA OF EXISTING DITCH. A TEMPORARY CULVERT CROSSING, MINIMUM 6" SIZE, SHALL BE INSTALLED, IF NEEDED TO PROVIDE POSITIVE DRAINAGE UNDER TEMPORARY ACCESS ROAD. MATS SHALL BE BRIDGED OVER THE CULVERT AND FEATHERED ON EACH SIDE.



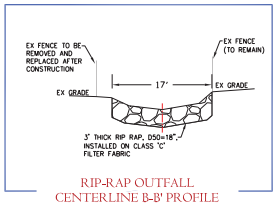
OUTFALL PLAN

SCALE 1" = 10'



RIP-RAP OUTFALL CENTERLINE A-A' PROFILE

NTS



RIP-RAP OUTFALL CENTERLINE B-B' PROFILE

NTS

LEGEND

Row Line
Boundary Line
Existing Vegetation Line
Existing Centerline of Road
Existing Edge of Pavement
Existing Building
Existing Contour 1x — 84
Existing Contour 5x — 80
Existing Centerline of Mattawoman Creek
Existing Soil Boundary
Proposed Temporary Staging Area
Proposed Temporary Access Easement/Mats
Proposed Rip-Rap Apron
Permanent Drainage Easement, Existing
Permanent Drainage Easement, Proposed
Area to Remove & Replace 72" Stormdrain
Limits of Disturbance — LOD
Silt Fence — SF
Proposed Bypass Pump Pipe Path — SSP
Ordinary High Water Line
Non Tidal Wetlands Boundary
25' Non Tidal Buffer
Pipe Slope Drain
Stabilized Construction Entrance — PB-13
Temporary Road/Driveway Crossing — MC4

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DEVELOPMENT SERVICES DEPARTMENT

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ROADS	CONSTRUCTION	AS-BUILT		
STORM DRAINAGE	CONSTRUCTION	AS-BUILT		
STORMWATER MANAGEMENT	CONSTRUCTION	AS-BUILT		
WATER	CONSTRUCTION	AS-BUILT		
SEWER	CONSTRUCTION	AS-BUILT		
OTHER	CONSTRUCTION	AS-BUILT		
SIGNED:				THIS PERMIT EXPIRES ON:
DATE:				DATE:

WETLANDS IMPACTS

AREA OF IMPACT	TYPE	HEADWALL AREA (SF)	OUTFALL AREA (SF)	TOTAL IMPACTS (SF)
WATERS OF THE U.S.	PERMANENT	44	1253	1297
	TEMPORARY	20	99	119
NON TIDAL WETLANDS	PERMANENT	85		85
	TEMPORARY	386	5203	5589
25' NON TIDAL BUFFER	TEMPORARY	188	1007	1195

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TEMPORARY STAGING, ACCESS ROAD, RIP-RAP PLACEMENT AND WETLAND IMPACTS PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy., Bishopville, MD 21862
ph. 410-352-3874 fax 410-352-3875 email: vista@vistadesigninc.com

PROJECT DATA	
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WALDORF, MARYLAND	
F.B. NO:	
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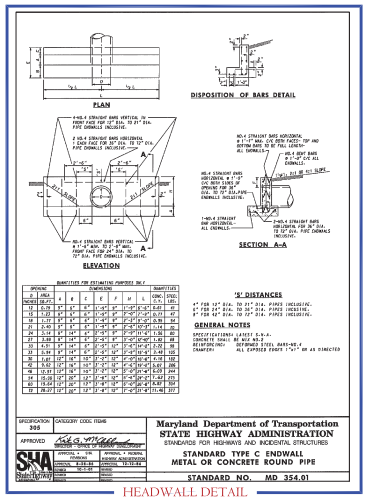
File Name: DOGWOOD.dwg
SHEET NO. 3

PGM# VCI 9-0111

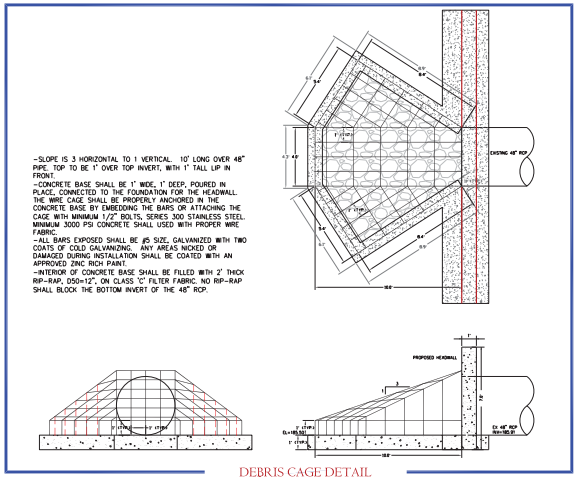
PGM# VCI 9-0111



HEADWALL DETAIL

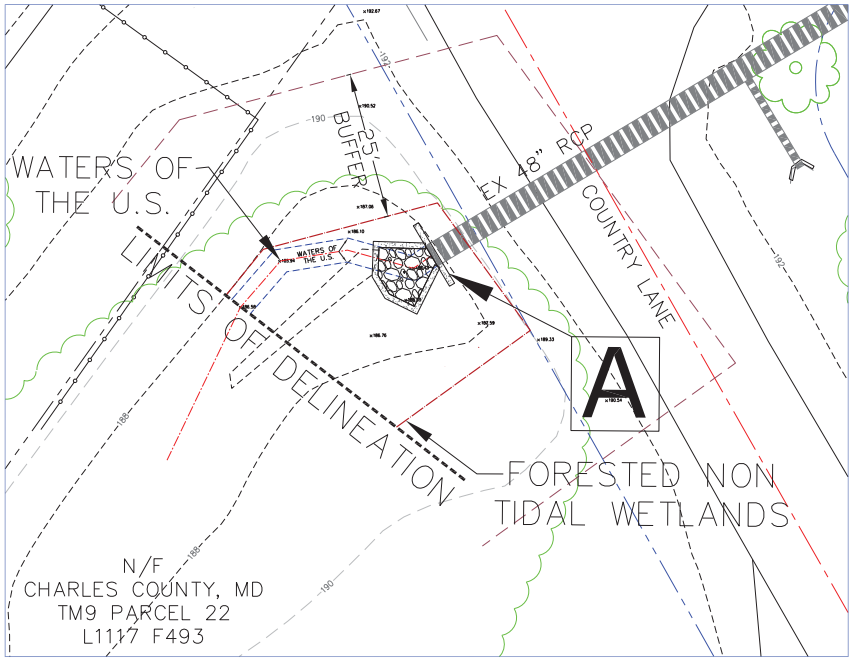
NTS

NOTE:
SHA DETAIL PROVIDED AS A COURTESY. CONTRACTOR SHALL CONFIRM AND USE LATEST DETAILS AND METHODS.



DEBRIS CAGE DETAIL

NTS



HEADWALL AND DEBRIS CAGE PLAN

SCALE 1" = 10'

NORTH

PGM# VCI 9-0111

OVERVIEW OF WORK TO BE PERFORMED (SEE SEQUENCE OF CONSTRUCTION, SHEET 7):

A HEADWALL TO BE INSTALLED AT END OF EXISTING 48" RCP. DEBRIS CAGE TO BE ATTACHED TO NEW HEADWALL OVER EXISTING 48" RCP TO PROTECT THE PIPE NETWORK FROM DEBRIS. (SEE DETAIL SHEET 4).

WETLANDS IMPACTS

AREA OF IMPACT	TYPE	HEADWALL AREA (SF)	OUTFALL AREA (SF)	TOTAL IMPACTS (SF)
WATERS OF THE U.S.	PERMANENT	44	1253	1297
	TEMPORARY	20	99	119
NON TIDAL WETLANDS	PERMANENT	85		85
	TEMPORARY	386	5203	5589
25' NON TIDAL BUFFER	TEMPORARY	188	1007	1195

LEGEND

- Row Line
- Boundary Line
- Existing Vegetation Line
- Existing Centerline of Road
- Existing Edge of Pavement
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Centerline of Mattawoman Creek
- Existing Soil Boundary
- Proposed Temporary Staging Area
- Proposed Temporary Access Easement/Mats
- Proposed Rip-Rap Apron
- Permanent Drainage Easement, Existing
- Permanent Drainage Easement, Proposed
- Area to Remove & Replace 72" Stormdrain
- Limits of Disturbance (LOD)
- Silt Fence (SF)
- Proposed Bypass Pump Pipe Path (SSP)
- Ordinary High Water Line
- Non Tidal Wetlands Boundary
- 25' Non Tidal Buffer
- Pipe Slope Drain
- Stabilized Construction Entrance (SCE)
- Temporary Road/Driveway Crossing

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CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

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HEADWALL, DEBRIS CAGE AND WETLAND IMPACTS AT 48" RCP PLAN AND DETAILS

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Bishopville, MD 21862
ph. 410-352-3874 fax 410-352-3875 email: vista@vistadesigninc.com

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SHEET NO. 4

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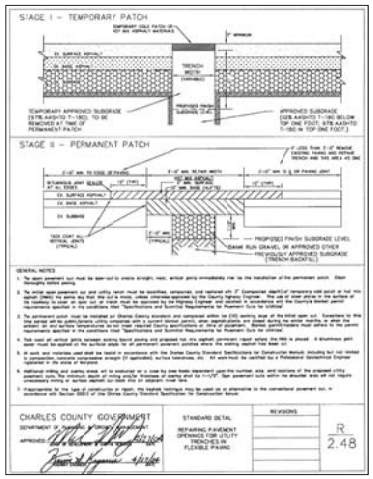
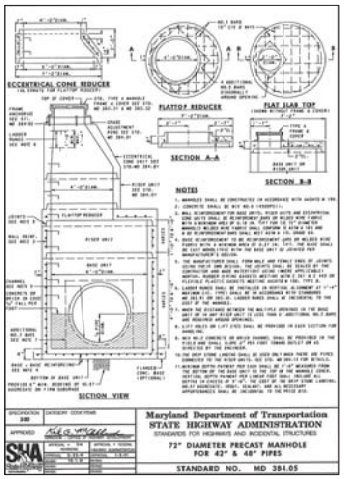
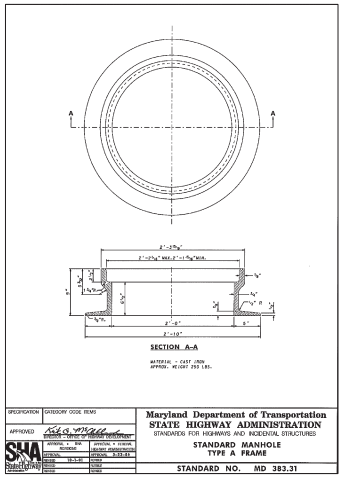
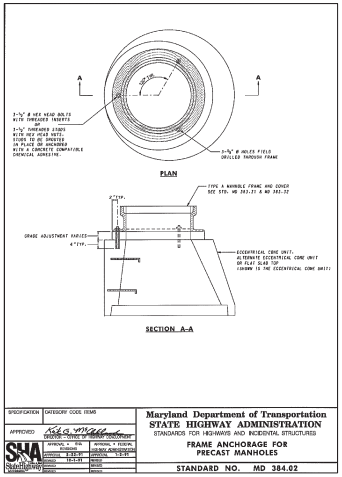
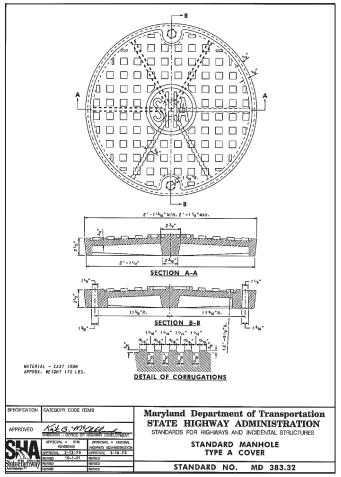
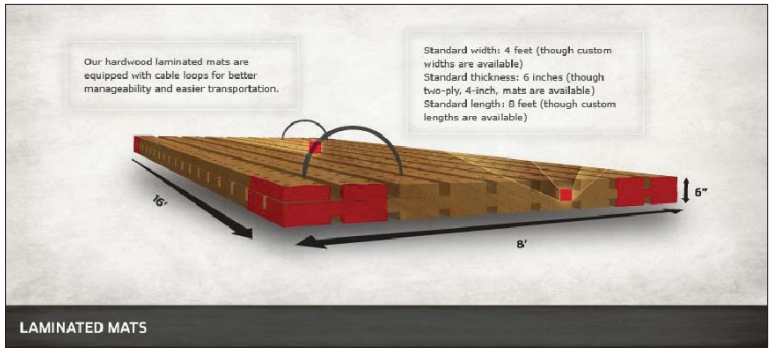






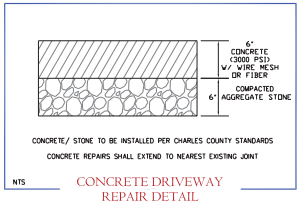




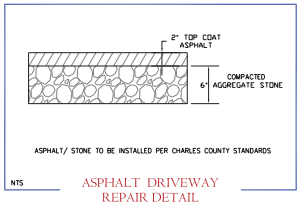


TIMBER MATS, OR APPROVED EQUAL, TO BE UTILIZED FOR TEMPORARY ACCESS ROAD:

TEMPORARY CONSTRUCTION ACCESS ROAD TO BE CONSTRUCTED OF TIMBER OR COMPOSITE MAT MATERIAL, WITH AN ALLOWABLE IMPACT AREA OF UP TO 16' WIDE. THE ALIGNMENT AND INSTALLATION AREA IS ENVIRONMENTALLY SENSITIVE AND SHALL BE MINIMALLY IMPACTED THROUGHOUT THE PROJECT. MATS SHALL BE DESIGNED TO DISTRIBUTE THE VEHICLE LOAD OVER THE WIDTH OF THE ACCESS PATH TO MINIMIZE THE GROUND PENETRATION AND SOIL AND VEGETATION DISTURBANCE. NO GROUND PRESSURE, INCLUDING THE WEIGHT OF THE MATS, SHALL EXCEED 15 PSI. SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER, ENVIRONMENTAL CONSULTANT AND CHARLES COUNTY. THE CENTERLINE OF THE TEMPORARY ACCESS ROAD IS +/-350' IN LENGTH. APPROXIMATELY 8 TREES ARE LOCATED IN THE VICINITY OF THE TEMPORARY STAGING AREA AND ACCESS ROAD. IF NEEDED FOR INSTALLATION OF THE TEMPORARY STAGING AREA AND ACCESS ROAD, THESE TREES MAY BE REMOVED IF THEY CANNOT BE AVOIDED. THE ENVIRONMENTAL CONSULTANT OF RECORD FOR THIS PROJECT SHALL BE NOTIFIED IN ORDER TO COORDINATE THE FLAGGING OF THE TREES PRIOR TO REMOVAL. IF THE TREES ARE FELLED FOR ACCESS, NOTHING SHALL REMAIN THAT IS LARGER THAN 6" IN DIAMETER. IN ADDITION, THE CANPONIES SHALL BE CHOPPED UP AND NOT LEFT AS WHOLE.



CONCRETE DRIVEWAY REPAIR DETAIL



ASPHALT DRIVEWAY REPAIR DETAIL

NOTE:
SHA DETAILS PROVIDED AS A COURTESY.
CONTRACTOR SHALL CONFIRM AND USE LATEST DETAILS AND METHODS.

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36318, EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

NOTE:
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NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

DETAILS

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Bishopville, MD 21862
ph. 410-352-3074 fax 410-352-3875 email: vista@vistadesigninc.com

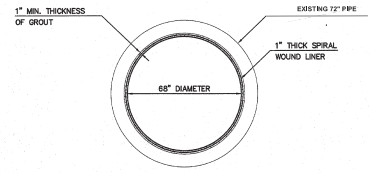
PROJECT DATA

DRAWN BY:	BJ
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
J.M. NO:	
DATE:	05-11-10
SCALE:	AS SHOWN

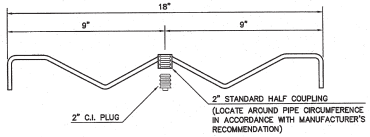
PROJ. NO. 09-060
File Name: DOGWOOD.dwg
SHEET NO. 5

PGM# VCI 9-0111

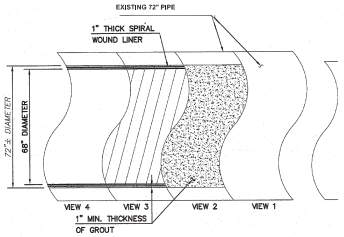
PGM# VCI 9-0111



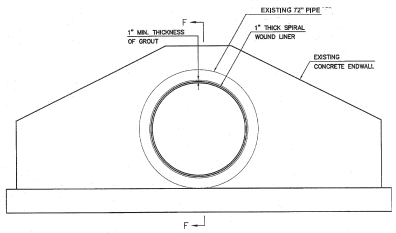
68" DIAMETER SPIRAL WOUND LINER SECTION
FOR USE IN AREAS NOT REQUIRING STRUCTURAL REHABILITATION
NO SCALE



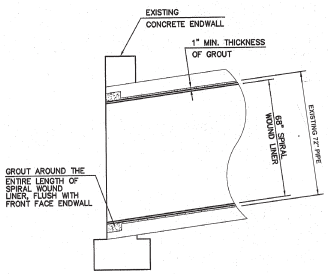
GROUT PLUG DETAIL
NO SCALE



68" DIAMETER SPIRAL WOUND LINER ELEVATION
FOR USE IN AREAS NOT REQUIRING STRUCTURAL REHABILITATION
NO SCALE



TYPICAL ENDWALL/HEADWALL DETAIL
NO SCALE



SECTION F-F
NO SCALE

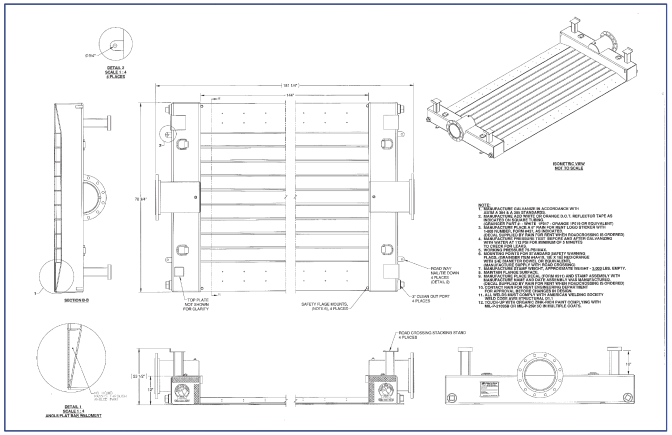
68" DIAMETER SPIRAL WOUND LINER DETAILS FOR 72" CMP:
- ABOVE DETAILS PROVIDED BY CONTECH CONSTRUCTION PRODUCTS.
- THESE DETAILS UTILIZE 12 GAUGE ALUMINUM SPIRALS.
- ALTERNATIVE SUPPLIERS ARE PERMITTED.
- CONTRACTOR SHALL PROVIDE FINAL SHOP DRAWINGS TO DESIGN ENGINEER AND CHARLES COUNTY FOR APPROVAL PRIOR TO ORDERING AND/OR INSTALLING ANY PIPE LINER MATERIAL.

CIPP DESIGN INFORMATION
(Based upon video pipe inspection performed by Video Pipe Services, Inc. on April 5, 2010)

1. PIPE TYPE: Gravity
2. PIPE CONDITION: Partially Deteriorated
3. INSIDE DIAMETER OF HOST PIPE: 72 inches
4. INITIAL FLEXURAL MODULUS: **250,000** (MINIMUM SUGGESTED VALUE:250,000 PSI)
5. INITIAL FLEXURAL STRENGTH: **4,500** (MINIMUM SUGGESTED VALUE:4500 PSI)
6. OVALITY FACTOR: **2%**
7. SERVICE LIFE:**50** Years
8. OVERALL SAFETY FACTOR: **2**
9. SOIL HEIGHT: **3** Feet
10. GROUNDWATER HEIGHT: **0**Feet
11. SOIL WEIGHT: **120** lbs./ft³
12. MODULUS OF SOIL REACTION: **700** (MINIMUM SUGGESTED VALUE: 700)
13. LOADING: AASHTO HS-20 Highway Live Load
14. RESIN SEAL FACTOR: **5** % (MINIMUM SUGGESTED VALUE: 5%)

Note: Copies of the video pipe inspections are available for review.

CIPP LINING SPECIFICATIONS FOR 72" CMP



TEMPORARY ROAD CROSSING FOR BYPASS LINE:
- ABOVE DETAIL PROVIDED BY RAIN FOR RENT, 7677 ROLLING MILL ROAD, BALTIMORE, MD 21224, PHONE 410-282-3880.
- THE DETAIL DEPICTS THE DESIRED METHOD FOR THE TEMPORARY ROAD AND DRIVEWAY CROSSINGS TO BE UTILIZED DURING THE REHABILITATION OF THE 72" CMP. ALTERNATIVE METHODS ARE POSSIBLE WITH THE PRIOR APPROVAL OF THE DESIGN ENGINEER AND CHARLES COUNTY.
- SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE DESIGN ENGINEER AND CHARLES COUNTY PRIOR TO INSTALLATION OF ANY ROAD CROSSINGS.

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

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NOTE:
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CIPP AND PIPE LINER DETAILS & NOTES

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Bishopville, MD 21862
ph. 410-352-3874 fax 410-352-3875 email: vista@vistadesigninc.com

PROJECT DATA

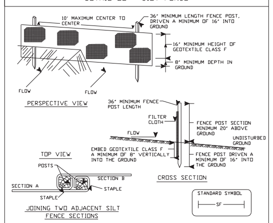
DRAWN BY:	BJ
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
J.M. NO:	
DATE:	05-11-10
SCALE:	AS SHOWN

PROJ. NO. 09-060
File Name: DOGWOOD.dwg
SHEET NO. 6

PGM# VCI 9-0111

PGM# VCI 9-0111

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 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.

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

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
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.

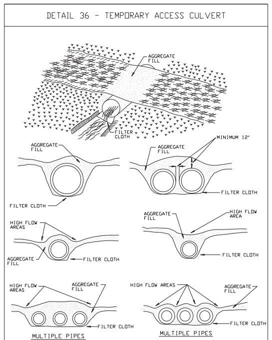
Silt Fence Design Criteria

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

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

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

DETAIL 36 - TEMPORARY ACCESS CULVERT



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 29 - 12	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TEMPORARY ACCESS CULVERT

Construction Specifications

1. Restrictions - No Construction or removal of a temporary access culvert will be permitted between October 1 through April 30 for Class III and Class IV Trout Waters or between March 1 through June 15 for non-trout waterways.

2. Culvert Strength - All culverts shall be strong enough to support their cross sectional area under maximum expected loads.

3. Culvert Size - The size of the culvert pipe shall be the largest pipe diameter that will fit into the existing channel without major excavation of the waterway channel or without major approach fills. If a channel width exceeds 3 feet, additional pipes may be used until the cross sectional area of the pipes is greater than 60 percent of the cross sectional area of the existing channel. The minimum size culvert that may be used is a 12" diameter pipe. In all cases, the pipe(s) shall be large enough to convey normal stream flows.

4. Culvert Length - The culvert(s) shall extend a minimum of one foot beyond the upstream and downstream toe to the aggregate placed around the culvert. In no case shall the culvert exceed 40 feet in length.

5. Filter Cloth - Filter cloth shall be placed on the streambed and streambanks prior to placement of the pipe culvert(s) and aggregate. The filter cloth shall cover the streambed and extend a minimum six inches and a maximum one foot beyond the end of the culvert and bedding material. Filter cloth reduces settlement and improves crossing stability.

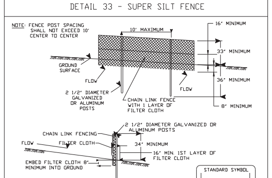
6. Culvert Placement - The invert elevation of the culvert shall be installed on the natural streambed grade to minimize interference with fish migration (free passage of fish).

7. Culvert Protection - The culvert(s) shall be covered with a minimum of one foot of aggregate. If multiple culverts are used they shall be separated by at least 12" of compacted aggregate fill.

8. Stabilization - All areas disturbed during culvert installation shall be stabilized within 14 calendar days of the disturbance in accordance with the Standard for "Critical Area Stabilization With Permanent Seeding."

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 29 - 12A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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:

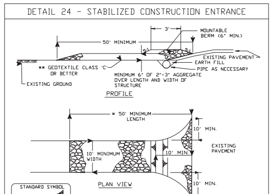
Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SEQUENCE OF CONSTRUCTION

1. CONTRACTOR MUST NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, AT (301) 645-0700, AT LEAST 5 DAYS PRIOR TO COMMENCING WORK.
2. CONTRACTOR MUST NOTIFY THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT/DEVELOPMENT SERVICES DIVISION, AT (301) 645-0618, 48 HOURS PRIOR TO COMMENCING WORK. A PRE-CONSTRUCTION MEETING MAY BE REQUIRED, AND MUST BE COORDINATED WITH THE INSPECTOR.
3. EROSION AND SEDIMENT CONTROL PRACTICES, AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON. ANY REQUIRED MAINTENANCE MUST BE PERFORMED IMMEDIATELY.
4. THE CONTRACTOR MUST USE SAME DAY STABILIZATION ON ALL DISTURBANCES. IF AN AREA IS NOT CAPABLE OF BEING COMPLETED IN A SINGLE DAY, BUT WILL BE DISTURBED AGAIN WITHIN THE NEXT 5 DAYS, THE CONTRACTOR MAY COVER THE AFFECTED AREA WITH PLASTIC SHEETING, PROPERLY ANCHORED TO PREVENT RUNOFF FROM ENTERING THE WORK AREA, AND PROPERLY DIVERTING RUNOFF FROM UPHILL AREAS FROM ENTERING WORK AREA. ANY CLEAN WATER WHICH COLLECTS ON THE PLASTIC SHEETING CAN BE DRAINED TO STABILIZED AREAS, BUT ANY DIRTY WATER WHICH COLLECTS SHALL BE PUMPED THROUGH A DIRT BAG TO STABILIZED AREAS.

2 DAYS 5. AFTER RECEIVING PERMISSION TO PROCEED FROM THE CHARLES COUNTY SEDIMENT CONTROL OFFICER AND THE CHARLES COUNTY DEPT OF PLANNING AND GROWTH MANAGEMENT, INSTALL SILT FENCE FOR TEMPORARY STAGING AREA "G" AT THE HEAD OF SPRUCE STREET. CLEAR AND GRUB FOR, AND INSTALL, TEMPORARY CONSTRUCTION ENTRANCE AND STAGING AREA AS SHOWN ON SHEET 3.

3 DAYS 6. ONCE STAGING AREA IS COMPLETED, INSTALL SILT FENCING ALONG ACCESS ROAD ALIGNMENT AND REMOVE TREES IN WETLANDS AREA, IF NEEDED. TREE REMOVAL SHALL BE IN ACCORDANCE WITH THESE PLANS, AND THE APPROVED WETLAND PERMITS, AND COORDINATED WITH WETLAND CONSULTANT NOTED ON THE COVER SHEET. THE CONTRACTOR SHALL REMOVE ALL TREE SECTIONS GREATER THAN 6", AND DISPOSE OF APPROPRIATELY OFF-SITE. IN ADDITION, CANOPIES FROM REMOVED TREES SHALL BE CHOPPED UP AND NOT LEFT AS WHOLE.

1 DAY 7. INSTALL TEMPORARY CULVERT CROSSING IN EXISTING DITCH EAST OF STAGING AREA TO INSURE PROPER CONTINUATION OF EXISTING ROAD DRAINAGE.

3 DAYS 8. INSTALL TIMBER MATS FOR TEMPORARY ACCESS ROAD "H." THE TEMPORARY ACCESS ROAD SHALL HAVE AN ALLOWABLE IMPACT OF APPROXIMATELY 350' LONG BY UP TO 16' WIDE, AS SHOWN ON SHEET 3. THE ALIGNMENT AND INSTALLATION AREA IS ENVIRONMENTALLY SENSITIVE AND SHALL BE MINIMALLY IMPACTED THROUGHOUT THE PROJECT. MATS SHALL BE DESIGNED TO DISTRIBUTE THE VEHICLE LOAD OVER THE WIDTH OF THE MATS TO MINIMIZE GROUND PENETRATION AND SOIL AND VEGETATION DISTURBANCE. NO GROUND PRESSURE, INCLUDING THE WEIGHT OF THE MATS, SHALL EXCEED 15 PSI AT ANY POINT. SHOP DRAWINGS OF THE MATS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT.

1 DAY 9. INSTALL SUPER SILT FENCE AROUND OUTFALL AREA "E"

3 DAYS 10. INSTALL TEMPORARY BY-PASS LINES FROM OUTFALL AREA "E" TO THE VICINITY OF MANHOLE 4, AS SHOWN ON THE PLANS. INSTALL DIRT BAG AT OUTFALL, AND ENSURE OUTFALL PIPE IS DIRECTED TO A RIP-RAP STABILIZED AREA.
10.1. INSTALL PUMPS IMMEDIATELY DOWNHILL OF MANHOLE 4, AND INSTALL SOUND BUFFERING TO LIMIT SOUND INTRUSION INTO ADJACENT PROPERTIES.
10.2. CONTRACTOR SHALL USE INFORMATION PROVIDED IN THESE PLANS TO PROPERLY SIZE NEEDED PUMPS, AND IS ENCOURAGED TO REVIEW THE WEATHER OFTEN AND TIME HIS CONSTRUCTION ACTIVITIES TO AVOID PUMPING RUNOFF FROM LARGE STORM EVENTS, IF POSSIBLE.

1 DAY 11. PROPERLY BLOCK AND MAKE WATERTIGHT MANHOLE 4, AND BEGIN PUMP-A-ROUND ACTIVITIES.

5 DAYS 12. REMOVE EXISTING FENCING LOCATED ON LOT 25 (NOTE: FENCING SHALL BE LATER REINSTALLED IN SAME LOCATION, AND MUST NOT BE DAMAGED DURING REMOVAL. FENCING SHALL BE EITHER STOCKPILED IN STAGING AREA "G" OR TAKEN TO A PROTECTED OFF-SITE LOCATION), AND ACCUMULATED DEBRIS AND OVERGROWN VEGETATIVE MATERIAL. MATERIAL REMOVED FROM THE OUTFALL AREA IS TO BE IMMEDIATELY REMOVED FROM THE WORK SITE AND TAKEN TO A SITE WITH AN APPROVED AND ACTIVE SEDIMENT AND EROSION CONTROL PLAN, AND IS NOT TO BE STOCKPILED ON-SITE. ONCE AREA IS CLEARED, INSTALL RIP-RAP WITHIN THE CHANNEL AND EAST SIDES TO PREVENT EROSION FROM PIPE OUTFALL AND BY-PASS PUMPING OPERATIONS, AND CONTINUE TIMBER MATTING ALONG WEST BANK TO SAFELY ACCESS REMAINING OUTFALL CHANNEL AREA AND HEADWALL.

1 DAY

2 DAYS 13. COMPLETE INSTALLATION OF RIP-RAP AT 72" PIPE OUTFALL WHILE STILL MAINTAINING ACCESS TO HEADWALL AREA FOR PIPE REMEDIATION ACTIVITIES.

10 DAYS 14. REMOVE AND REPLACE DAMAGED SECTIONS OF 72" CMP TO THE NEAREST PIPE JOINT ON EITHER SIDE OF THE TWO DAMAGED SECTIONS (AREAS "C"), WHILE PROPERLY CONNECTING THE JOINTS PER THE MANUFACTURER'S SPECIFICATIONS.
a. THE EXISTING CONCRETE DRIVEWAYS SHALL BE REMOVED TO THE NEAREST EXPANSION JOINT, AND ANY CONCRETE OR ASPHALT REMOVED SHALL BE IMMEDIATELY REMOVED FROM THE WORK SITE AND TAKEN TO A SITE WITH AN APPROVED AND ACTIVE EROSION AND SEDIMENT CONTROL PLAN.
b. ANY DIRT REMOVED FROM THE WORK AREA, WHICH IS SLATED TO BE RE-USED AS PIPE BACKFILL ON THE REPLACED PIPE SECTIONS, SHALL BE TEMPORARILY STOCKPILED IN THE STAGING AREA, AND SHALL BE SURROUNDED BY SUPER SILT FENCE AT ALL TIMES. NO MATERIAL SHALL BE LEFT IN THE TEMPORARY STOCKPILE LONGER THAN IS ABSOLUTELY NECESSARY TO COMPLETE THE PIPE REPLACEMENT, AND THE AREA IS TO BE CLEANED FOLLOWING PIPE REPLACEMENT ACTIVITIES.
c. PIPE BEDDING, BACKFILL, AND COVER SHALL MEET OR EXCEED THE CHARLES COUNTY SPECIFICATIONS FOR PIPE INSTALLATION.
d. REPAIR DRIVEWAYS TO CHARLES COUNTY STANDARDS, OR GREATER IF EXISTING DRIVEWAY IS FOUND TO EXCEED MINIMUM STANDARDS.
e. INSTALL SOD ON OTHER DISTURBED AREAS IMMEDIATELY AFTER COMPLETION OF PIPE REPLACEMENT ACTIVITIES. CONTRACTOR SHALL WATER SOD FOR 14 DAYS FOLLOWING INSTALLATION TO ENSURE SOD BECOMES ESTABLISHED.

1 DAY 14. REMOVE ACCUMULATED DEBRIS FROM PIPE NETWORK, BEGINNING WITH THE 72" CMP.

10 DAYS 15. INSTALL CIPP, OR SPIRAL WOUND PIPE, LINER IN EXISTING 72" CMP PER THESE PLANS AND ALL MANUFACTURER'S SPECIFICATIONS. THE NEW LINER SHALL BE INSTALLED FROM MANHOLE 5 TO THE EXISTING OUTFALL. PROVIDE CUT-IN FOR EXISTING 21" PIPE AT MANHOLE "7", FROM INLET "6." IF CIPP TECHNOLOGIES ARE UTILIZED, CONTRACTOR SHALL ENSURE RUNOFF FROM CURING PROCESS IS PROPERLY PUMPED TO A MANUFACTURER'S APPROVED TREATMENT FACILITY TO ENSURE CURING RUNOFF DOES NOT ENTER DOWNSTREAM WATERS.

2 DAYS 16. COMPLETE INSTALLATION OF RIP-RAP AT OUTFALL "E," AND REMOVE MATS FROM LOT 25.

1 DAY 17. REMOVE BLOCKING FROM MANHOLE 4 AND REMOVE PUMPS AND TEMPORARY BY-PASS EQUIPMENT. RESTORE ANY DISTURBED AREAS WITH SOD, AND WATER FOR 14 DAYS TO ENSURE SOD BECOMES ESTABLISHED.

5 DAYS 18. RE-INSTALL CHAIN LINK FENCE ON LOT 25, AND BEGIN REMOVING MATS FROM ACCESS ROAD "H." MATS SHALL NOT BE STORED IN STAGING AREA LONGER THAN NEEDED, AND SHALL BE REMOVED OFF-SITE. ONCE MATS ARE REMOVED, AND FOLLOWING APPROVAL FROM SEDIMENT CONTROL INSPECTOR, REMOVE SILT FENCE FROM OUTFALL AND ACCESS ROAD AREAS. (NOTE: MAINTAIN SILT FENCE AROUND STAGING AREA UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETE).

2 DAYS 19. UNCOVER EXISTING MANHOLE "2," AND INSTALL RISER AND TOP SECTIONS AS NEEDED TO MATCH EXISTING GRADE. INSTALL SOD, OR OTHER MATERIAL TO MATCH SURROUNDING SURFACES, IMMEDIATELY FOLLOWING RISER AND TOP INSTALLATION. IF SOD IS USED, CONTRACTOR IS RESPONSIBLE TO WATER SOD FOR 14 DAYS TO ENSURE SOD BECOMES ESTABLISHED.

10 DAYS 20. INSTALL HEADWALL AT 48" RCP, THEN INSTALL DEBRIS CAGE AND RIP-RAP.

1 DAY 21. REMOVE ANY REMAINING DEBRIS FROM PIPE NETWORK.

3 DAYS 22. REMOVE STAGING AREA. REMOVE TEMPORARY CONSTRUCTION ENTRANCE AND REMAINING SILT FENCING AFTER APPROVAL OF THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR.

STABILIZATION

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.

CHARLES SOIL CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUNDCOVER TO BE CONSIDERED ADEQUATELY STABILIZED.

1) PERMANENT SEEDING:
A) SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.
THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
a) SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
b) SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
c) THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
d) SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
e) SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
f) IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED AGRONOMIST.
B) SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3 INCHES. THE TOP LAYER SHALL BE LOOSENED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS DOLOMITIC LIMESTONE AND 2 1 POUNDS OF 10- 10- 10 FERTILIZER PER 1,000 SQUARE FEET. HAN-OW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3 INCHES ON SLOPES FLATTER THAN 3:1.
C) SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN MARCH 1 AND MAY 15 OR BETWEEN AUGUST 15 AND OCTOBER 15. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 INCH IN CLAYEY SOILS AND 1/2 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE WHERE NECESSARY TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE 25, ENTITLED "PERMANENT SEEDING FOR LOW MAINTENANCE AREAS" FROM THE CURRENT STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. MIXES SUITABLE FOR THIS ARE 1, 3, AND 5-7. MIXES 5-7 ARE SUITABLE IN NON-MOWABLE SITUATIONS.
D) MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING.
MULCH SHALL BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). IF A MULCH-ANCHORING TOOL IS USED, APPLY 2.5 TOILS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES.
E) SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:
(i) USE A MULCH-ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH, HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.
(ii) WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
(iii) LIQUID BINDERS MAY BE USED. APPLY AT HIGHER RATES AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.
(iv) LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

2) TEMPORARY SEEDING:
LIME: 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.
FERTILIZER: 15 POUNDS OF 10- 10- 10 PER 1,000 SQUARE FEET.
SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH NOVEMBER 1).
MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).
MULCH: SAME AS 1 D AND E ABOVE.

3) NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL FILL IN ROADWAYS AND PARKING AREAS ARE TO BE CLASSIFIED AS PER CHARLES COUNTY REQUIREMENTS. ANY FILL WITHIN THE BUILDING AREA IS TO BE COMPACTED TO A MINIMUM OF 95% DENSITY. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.

4) PERMANENT SOD:
INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE. PERMANENT SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1, AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING.
ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.

5) MINING OPERATIONS:
SEDIMENT CONTROL PLANS FOR MINING OPERATIONS MUST INCLUDE THE FOLLOWING SEEDING DATES AND MIXTURES: FOR SEEDING DATES OF FEBRUARY 1 THROUGH APRIL 30 AND AUGUST 15 THROUGH OCTOBER 31, USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND SERICEA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.

6) TOPSOIL SHALL BE APPLIED AS PER THE STANDARD AND SPECIFICATIONS FOR TOPSOIL FROM THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

NOTE: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

1994 MD SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL SECTION G-21: STANDARDS AND SPECIFICATIONS FOR TOPSOIL

21.0 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 SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL 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, OR 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 FT IN DIAMETER.
II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, 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 48 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.

II. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
I. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.

III. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
I. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO, BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
A. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
B. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
C. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
D. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
NOTE: TOPSOIL SUBSTITUTES 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.

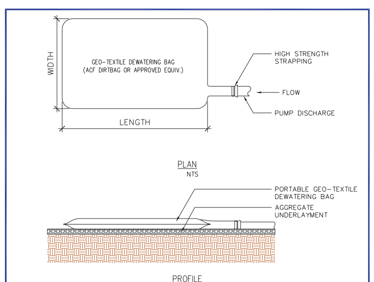
V. TOPSOIL APPLICATION
I. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
II. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4"-8" HIGHER IN ELEVATION.
III. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"-8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
IV. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

VI. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
I. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
A. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
B. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
C. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
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.

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310 , EXPIRATION DATE: 11/17/2012

GEO-TEXTILE DEWATERING DIRT BAG



DE-ESC 3.2.1.2.002
1 of 2

GEO-TEXTILE DEWATERING DIRT BAG

CONSTRUCTION NOTES:

1. THE DEWATERING BAG SHOULD BE PLACED SO THE INCOMING WATER FLOWS INTO AND THROUGH THE BAG AND THEN FLOW OFF THE SITE WITHOUT CREATING MORE EROSION. THE NECK SHOULD BE TIED OFF TIGHTLY TO STOP THE WATER FROM FLOWING OUT OF THE BAG WITHOUT GOING THROUGH THE WALLS. THE DEWATERING BAG SHOULD BE PLACED ON A GRAVEL BED TO ALLOW WATER TO FLOW IN ALL DIRECTIONS.

2. THE DEWATERING BAG IS CONSIDERED FULL AND SHOULD BE DISPOSED WHEN IT IS IMPRACTICAL FOR THE BAG TO FILTER THE SEDIMENT OUT AT A REASONABLE FLOW RATE. AT THIS POINT, IT SHOULD BE REPLACED WITH A NEW BAG.

3. DISPOSAL MAY BE ACCOMPLISHED AS DIRECTED BY THE CONSTRUCTION REVIEWER.

MATERIALS:

1. THE GEO-TEXTILE FABRIC SHALL BE TYPE GD-IV

2. THE DEWATERING BAG SHALL BE SEWN WITH A DOUBLE NEEDLES MACHINE USING HIGH STRENGTH THREAD. ALL STRUCTURAL SEAMS WILL BE SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE. SEAM STRENGTH TEST WILL HAVE THE FOLLOWING MINIMUM AVERAGE ROLL VALUES:

TYPE	TEST METHOD	TEST RESULT
HEAVY DUTY	ASTM D-4884	100 LB/ IN

3. THE DEWATERING BAG SHALL HAVE AN OPENING LARGE ENOUGH TO ACCOMMODATE A FOUR (4) INCH DISCHARGE HOSE WITH ATTACHED STRAP TO TIE OFF THE HOSE TO PREVENT THE PUMPED WATER FROM ESCAPING FROM THE BAG WITHOUT BEING FILTERED.

DE-ESC 3.2.1.2.002
2 of 2

GEO-TEXTILE DEWATERING DIRT BAG

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

			REMARKS OR CONDITIONS
GRADING	CONSTRUCTION	AS-BUILT	
ROADS	CONSTRUCTION	AS-BUILT	
STORM DRAINAGE	CONSTRUCTION	AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION	AS-BUILT	
WATER	CONSTRUCTION	AS-BUILT	
SEWER	CONSTRUCTION	AS-BUILT	
OTHER	CONSTRUCTION	AS-BUILT	
SIGNED:			THIS PERMIT EXPIRES ON:
DATE:			DATE:

NOTE:
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NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

EROSION & SEDIMENT CONTROL DETAILS & NOTES

REV NO.	CONSTRUCTION REVISION	DATE

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Landscape Architects, Land Planning Consultants, Engineers & Surveyors
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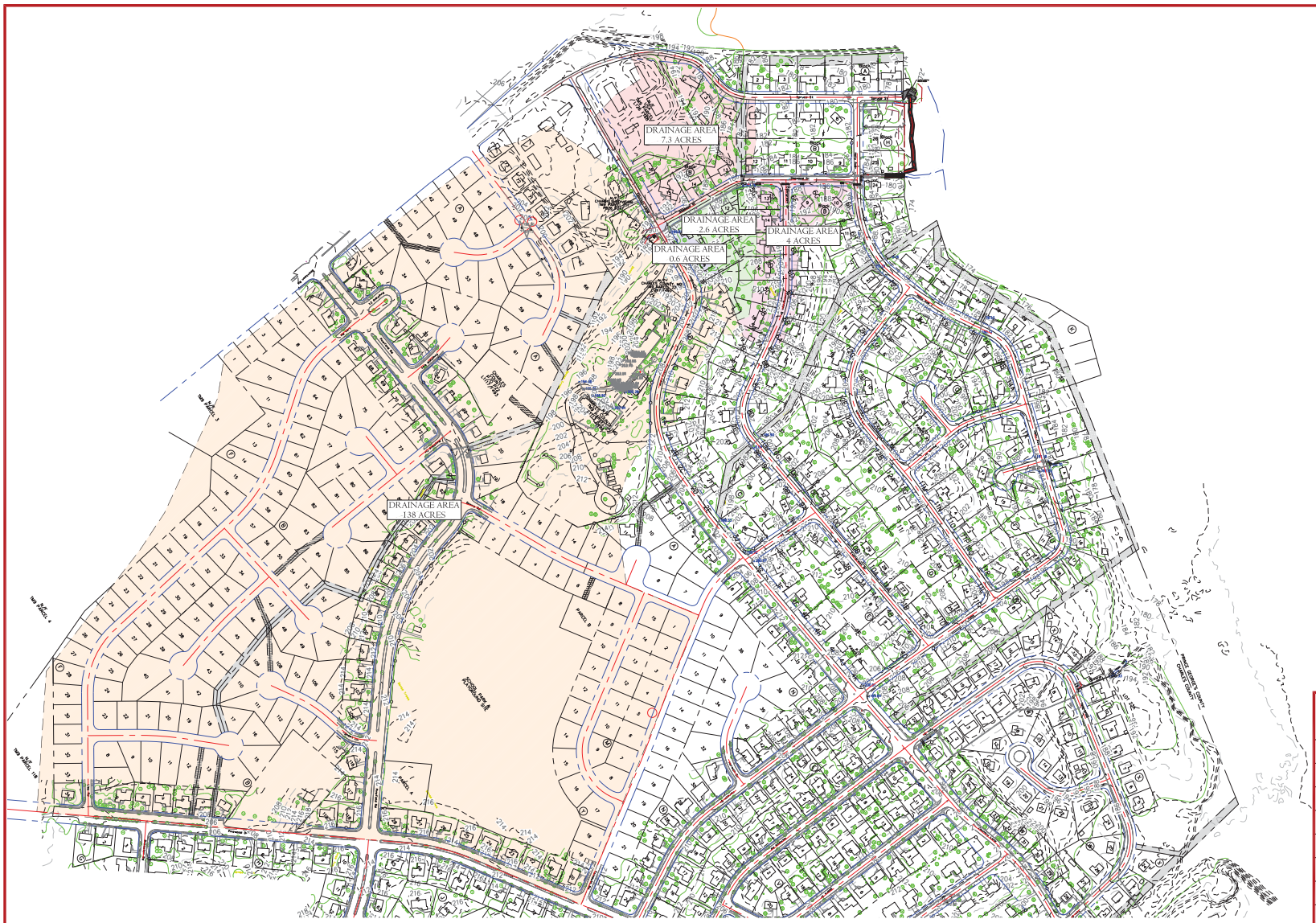
PROJECT DATA

DRAWN BY:	BJ
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
T.M. NO:	
DATE:	05-11-10
SCALE:	AS SHOWN

PROJ. NO. 09-060
File Name: DOGWOOD.dwg
SHEET NO. 7



DRAINAGE AREAS

SCALE 1" = 200'

NORTH

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36318, EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

NOTE:
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NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

DRAINAGE AREAS

REV NO.	CONSTRUCTION REVISION	DATE

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PROJECT DATA

DRAWN BY:	BJ
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
J.M. NO:	
DATE:	05/11/10
SCALE:	AS SHOWN

09-060
PROJ. NO.

DOGWOOD.dwg
File Name:

8
SHEET NO.

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