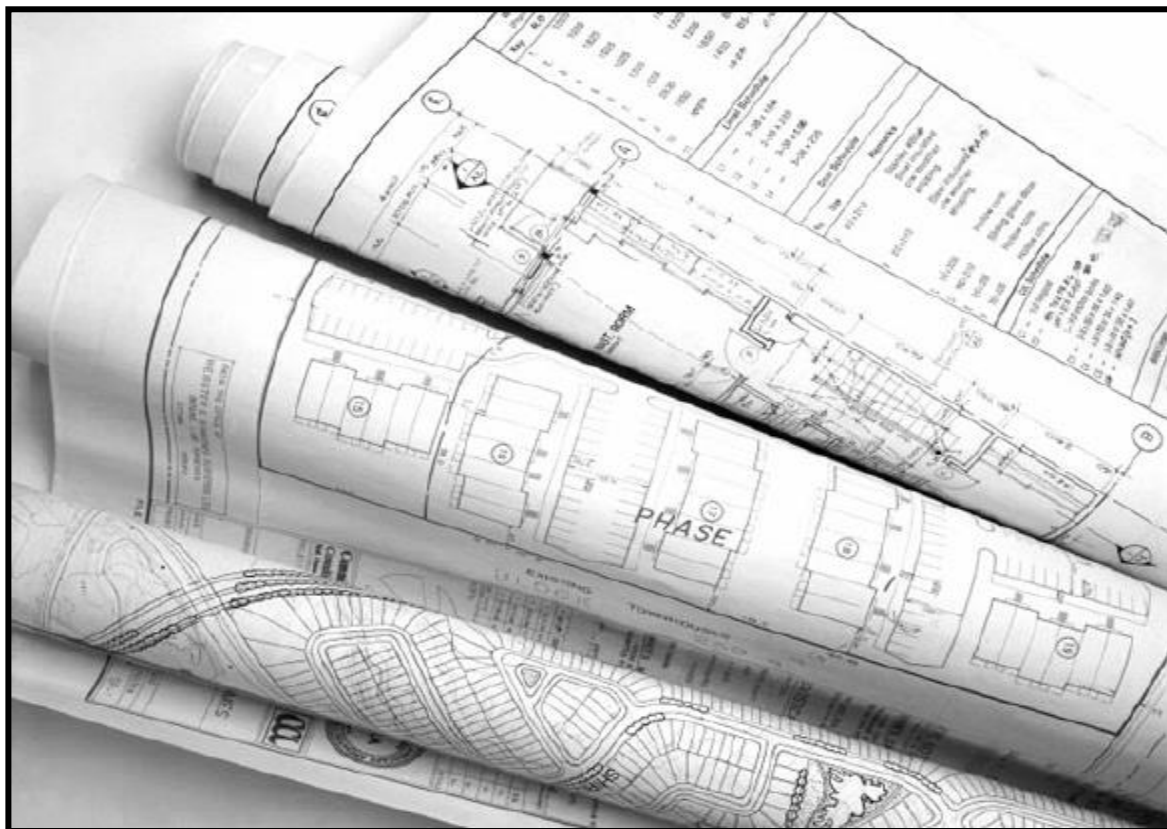




Charles County, Maryland

Plan Preparation Package

Development Services Permits



Codes, Permits & Inspection Services Division

As-Built	⊗	Dedication	⊗	Floodplains
Grading	⊗	Roads	⊗	Storm Drainage
Stormwater Management	⊗	Water and Sewer		

June 2012

Visit Charles County's Website at www.charlescountymd.gov

MISSION STATEMENT

The mission of Charles County Government is to provide our citizens the highest quality service possible in a timely, efficient, and a courteous manner. To achieve this goal, government must be operated in an open and accessible atmosphere, be based on comprehensive long and short term planning, and have an appropriate managerial organization tempered by fiscal responsibility.

OUR VISION

Charles County is a place where all people thrive and businesses grow and prosper;
where the preservation of our heritage and environment is paramount;
where government services to its citizens are provided at the highest level of excellence;
and where the quality of life is the best in the nation.

INTRODUCTION

This package is designed to assist developers and engineers through the permitting process and in the preparation of plans for submissions to Charles County. Well-prepared applications, reports and plans will require minimal revisions, thereby expediting the review and approval process.

These guidelines are the minimum requirements for submission of plans to Charles County. They have been extracted from the Charles County Road Ordinance, Grading Ordinance, Stormwater Management Ordinance, Storm Drainage Ordinance, Floodplain Management Ordinance, the Water and Sewer Ordinance, the Standard Detail Manual (Detail Manual) and the Charles County Standards and Specifications for Construction Manual (Specification Manual) and the department's policy and procedures. These guidelines are not intended to replace the County ordinances or manuals. This document has been incorporated by reference in various Charles County ordinances thus making all requirements found in this document regulatory. Charles County requires that all developers and engineers obtain and thoroughly review all ordinances, codes, manuals and any other materials required for design and construction of projects within Charles County. All of the referenced material can be found on the County's website at www.charlescountymd.gov.

Close adherence to these guidelines along with a working knowledge of the County ordinances, design manuals, construction manuals and procedures will produce uniform, clear, and concise plans that are easily reviewed and easily read and interpreted by field personnel. Plans not meeting the minimum standards established in this document may be rejected.

The Codes, Permits & Inspection Services Division (CPIS) works closely with developers and engineers during all phases of development, from plan review through inspection and project close out to assure our mutual goal of quality development of Charles County.

Any person applying for a Development Services Permit (DS Permit) and/or doing related work must purchase a Charles County Standard Detail Manual and a Standard and Specifications for Construction Manual.

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Charles County, Maryland

FORMAT GUIDELINES AND MINIMUM REQUIREMENTS FOR THE PREPARATION AND SUBMISSION OF CONSTRUCTION PLANS FOR ROADS, GRADING, WATER AND SEWER, STORM DRAIN AND STORMWATER MANAGEMENT

I. PLAN SUBMISSION

A. PURPOSE

1. The purpose of these guidelines is to establish standard format and minimum requirements for the submission of site, subdivision, development and Capital Improvement Project (CIP) documents to the Department of Planning and Growth Management (PGM), Codes, Permits & Inspection Services Division (CPIS) for review.
2. The primary objective is to expedite the review process by eliminating the review time spent on incomplete submissions. Submission packages and plans shall be prepared in conformance with Section II of these guidelines and all applicable County Ordinances, Detail Manual, MSHA Drainage Manual (Drainage Manual), 2000 Maryland Stormwater Design Manual and any Supplements, Volumes I & II (SWM Design Manual) and the Standard Specifications for Construction Manual.
3. Submission packages may be administratively evaluated and only those which adhere to the following minimum requirements will be accepted by CPIS for review. The County reserves the right to not accept those which do not meet these requirements.

B. GENERAL REQUIREMENTS

1. The documents listed on the Initial Submission Checklist (Appendix 4) are required for an initial submission of the development plans to PGM/CPIS for review. The initial submission package and all subsequent submissions will be submitted at the PGM Permits Counter, County Government Building, La Plata, Maryland.

Review fees (see Charles County Fee Schedule) are required at the time of the initial submission of the project. All checks for fees must be made payable to "Charles County Commissioners." Adjustments to the review fees, inspection fees and any other fees required as part of the project have to be paid prior to permit issuance.

II. PLAN PREPARATION GUIDELINES AND REQUIREMENTS FOR SUBDIVISION, COMMERCIAL, INDUSTRIAL, INSTITUTIONAL AND COUNTY CAPITAL PROJECTS

A. PURPOSE:

1. The purpose of these guidelines is to establish a standard format with minimum requirements for the preparation of constructions plans, reports, letters, forms, materials, and any other documents necessary in obtaining a DS Permit.
2. The primary objective of the guidelines is to produce clear, consistent, and precise plans and materials that can be easily interpreted and implemented by Charles County or Charles County

contract personnel.

3. Close adherence to these guidelines and applicable County ordinances will assist developers and design professionals during their plan development stage and help expedite the review and approval process by the County.
4. The County reserves the rights to reject any DS Permit application package or any re-submittal for the following reasons:
 - a. Incomplete plan assembly packages,
 - b. Unclear or cluttered plans,
 - c. Plans, letters or documents which are not sealed or signed by the design professional, or
 - d. Other reasons the County determines warrants a rejection

B. GENERAL PLAN PREPARATION REQUIREMENTS FOR PROJECTS:

1. The following format guidelines are intended as general guidelines for the development and submission of plans for major & minor construction projects. However, other methods and alternatives that produce the desired results may be considered with approval from the County prior to the submission of permit information. Minor construction projects with limited disturbance and construction may submit an abbreviated DS Permit as noted. Minor projects may include individual lot grading, driveway entrances, grease traps, limited shore erosion project, bulkheads, or other limited disturbance projects. Also, any proposed variations or deviations from these guidelines shall be requested in writing to the Chief of CPIS prior to plan submission. Each separate category should be ghosted on the plans for other categories if the information would be necessary for understanding the project.
2. All plan sheets for Major Construction Projects shall be separate and organized in the following order:
 - a. Title Sheet
 - b. Grading/Storm Drainage/Floodplain
 - c. Storm Drain/Culvert Details, Profiles and Notes
 - d. Detailed Stormwater Management (separate from grading) Plan (also ghosted on other categories)
 - e. Stormwater Management Details and Notes
 - f. Stormwater Management Individual Lot Plan, Notes and Details
 - g. Stormwater Management Landscaping Plan
 - h. Roadway and Public Storm Drainage Plan
 - i. Roadway Profiles and Notes
 - j. Maintenance of Traffic (MOT) Plan
 - k. Typical Road Sections and Road Details
 - l. Water and Sewer Composite Plan
 - m. Water and Sewer Plan
 - n. Water and Sewer Profile
 - o. Typical Water and Sewer Sections, Notes and Details
 - p. Conceptual Grading Plans for Individual Lot Development
 - q. Forest Conservation Plan (separate from all other disciplines)
 - r. Sediment and Erosion Control Sheets (separate from all other categories)
 - s. Demolition, existing conditions and/or any other plan.

Note: Some information may be combined on one sheet (i.e. storm drain profiles and typical storm drainage information, or conceptual grading and individual lot swm) if approved by CPIS in advance. The County reserves the right to require information to be provided on separate sheets.

3. All plan sheets for Minor Construction Projects shall be formatted and organized in the following order:
 - a. Plan size shall be of sufficient size as to be easily read and understood but should be on standard size sheets such as 8.5"x11", 8.5"x14", 11"x17" or 24"x36".
 - b. The plans shall contain all of the information required on a major construction plan as appropriate and as necessary to include and not be limited to title blocks, owner information, project information, approval blocks, existing contours, proposed contours, north arrows, existing proposed construction details, etc.
 - c. Grading, drainage, stormwater management, roads, water and sewer and other categories can be contained on the same sheet provided that the information is accurate and easy to read.
 - d. Sediment and erosion control shall be on separate sheets.
4. All drawings in a set of major construction plans shall be 36 inches wide by 24 inches high.
 - a. Drawings for major construction plans shall have a 1" margin along the top, bottom and right edges and a minimum 1-1/4" left margin
 - b. Sheets shall be stapled with five staples 1/2" to 3/4" from the left side beginning 2" below the top and 5" increments thereafter with the final approved paper sets having a blue or black binding strip.
5. The North Arrow shall be shown on each drawing. All vicinity maps and location plans shall be oriented so that North is towards the top of the sheet.
6. Stationing on plan and profile sheets shall increase from left to right across the drawing. Sheets shall be placed in plan set in order of increasing station.
7. All plans shall be oriented so that North is towards the top or right of the sheet. The North Arrow shall be shown on each sheet.
8. Any of the plan formatting requirements of Items 6 and 7 may be waived or modified by CPIS upon advanced written request if better continuity of the plan and profile sheets can be obtained. However, there shall be consistency in stationing and north arrow orientation for all sheets throughout the plan assembly.

C. DRAFTING PRACTICES:

1. Good drafting practices shall be exercised in the preparation of all drawings. Plans need to be clear and not give a cluttered appearance. Line weights and line brightness shall be established for the maximum clarity. Unclear or cluttered plans may be rejected.
2. The minimum size of lettering for all notes and descriptions shall be 1/8" in size (lower case only) or font size eighteen (18). All other lettering shall be proportionately larger depending on the importance of the item referred. Street names and similar designations shall be boldly lettered to stand out.
3. Standard symbols to be used in preparation of the drawings shall be as shown on Appendix 2. Additional symbols may be used provided such is included in the symbol list.
4. Any abbreviation or acronym used shall be defined in a list provided on the title sheet.
5. A graphical scale shall be provided on all drawings. Scales to be used on the drawings shall be as follows:
 - a. Vicinity, Location - See Section II, Paragraphs D.1.a. & b. and Paragraph I-1.

- b. Drainage Area Maps (DAM) – Shall be separate for drainage and stormwater management and shall be contained in the appropriate report. DAM shall be of sufficient scale as determined by the County to be clear with a minimum scale of 1"=200'. Offsite DAM or DAM used for floodplain studies shall be of appropriate scale to be readable as determined by the County Engineer.
 - c. Typical Sections - As appropriate to show necessary details clearly. An exaggerated horizontal or vertical scale may be used in developing the section and a notation of "Not to scale" indicated on the plans.
 - d. Typical Details - As appropriate to show details clearly. 1"=20' minimum and multiples thereof for larger scales. Water and Sewer Details may be referenced to a Standard Charles County Detail by including a table with reference numbers and names on the Cover Sheet.
 - e. Roadway and Water & Sewer plans - 1"=50' minimum. 1"=20' may be used for special paving plans, intersections and cul-de-sac details.
 - f. Grading Plan - 1"=50' minimum.
 - g. Roadway, Water, Sewer and Storm Drain Profiles - 1"=50' horizontal and 1"=5' vertical. Enlargements of these scales will be permitted for special detailing. All profiles will be represented on a horizontal and vertical grid line graph profile.
6. All drawings must be signed and sealed by (a licensed professional registered in the state of Maryland) the following (unless specifically allowed otherwise by State Law):
- a. Grading: Professional Engineer or Professional Land Surveyor, or Registered Landscape Architect.
 - b. Roadway: Professional Engineer or Professional Land Surveyor
 - c. Water & Sewer: Professional Engineer
 - d. Stormwater Management & Floodplains: Professional Engineer, Professional Land Surveyor (see note below)
 - e. Storm Drainage: Professional Engineer or Professional Land Surveyor
 - f. Landscape Plans: Registered Landscape Architect
7. All drawings shall contain the following:
- a. A PGM# will be assigned to each project. This will be incorporated on the plans in the lower right hand and upper right hand corners (see Appendix 7) of all drawings with a #4 pen or similar sized font. The PGM # shall be **bold** and be formatted as follows, **PGM# VCYY-XXXX** (category – VSC, VSS, VC, VR, VI, etc.) year-number (ex. **PGM# VR03-0171**). For construction revisions to issued permits the PGM# shall be formatted as follows, **PGM# VCYY-R-XXXX** (category (VC, VR, VI, etc.) year- revision number -number (ex. **PGM# VR03-2-171**). The project name shall also be placed before the PGM# in the upper right hand corner.
 - b. A Charles County Approval Block will be provided on the lower right side of each sheet (except for sediment and erosion control sheets) immediately above the title block. A sample approval block is provided as Appendix 5.
 - c. A revision block will be incorporated on each sheet for revisions made to plans after the issuance of the DS Permit. See Appendix 5 for an example. Revisions will begin after the County has approved the construction drawings and the DS Permit has been issued. The revisions shall be clearly marked adjacent to each revision with a revision number.
 - d. A title block shall be on each drawing and at a minimum shall contain the following:
 - 1. project name
 - 2. section number
 - 3. phase number

4. date
5. scale
6. sheet number
7. sheet title

D. INFORMATION TO BE SHOWN ON DRAWINGS:

1. Title Sheets

- a. Vicinity Map - Scale: 1"-2000' minimum. Vicinity map is to show major roads or streets, major streams, towns large institutions, north arrow, etc. and the site location.
- b. Location Plan - Scale: 1"-200' preferred, 1"-400' minimum. Location plans shall show overall subdivision layout, section limits, adjacent subdivisions, street names, control bench mark location(s) and north arrow. The section to be constructed shall be clearly delineated.
- c. Title Information - subdivision name or project name, section number, election district, County and State.
- d. Owner's Certificate, name, physical address and phone number.
- e. Engineer's and/or Surveyor's Certificate, name, physical address, signature and seal.
- f. Sheet index to drawings.
- g. Legend of specific graphic special symbols applicable to the project which differ from the County's Standard Symbols. The Standard Symbols should be used to the fullest possible extent.
- h. List of abbreviations and acronyms applicable to the project.
- i. General Notes or notes applicable to the category.
- j. Special Provisions shall include notes that are specific to this project, separate from "General Notes," such as applicable preliminary plan requirements, timing of offsite improvements, etc.
- k. Horizontal control references shall be the 1991 Maryland State Plane coordinate system. Vertical control references shall be North American Datum (NAD) 1983.
- l. Charles County Planning Commission Preliminary Plan & Final Approval Number or Site Plan Number as applicable and the date of approval to be located in the upper left corner of the title block.
- m. Charles Soil Conservation District Approval Number with approval and expiration dates to be located as required by the Charles Soil Conservation District.
- n. Applicable Grant Number.
- o. Tax map and parcel number.
- p. A table containing the following applicable information:
 1. Preliminary Plan number and approval date;
 2. Charles Soil Conservation Plan number, approval date and expiration date;
 3. Zoning Site Development Plan number and approval date;
 4. Stormwater Management Administrative Waiver number and approval date;
 5. Concept Stormwater Management Plan number and approval date; and
 6. Site Stormwater Management Plan number and approval date
- q. Any other information or note that the County determines is applicable for a particular project.

2. General Notes shall be as follows:

- a. 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 all County ordinances.
- b. Contractor is responsible for contacting "Miss Utility" at 1-800-257-7777, 48 hours prior to any excavation work.
- c. The developer 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.
- d. The contractor is responsible for contacting the Charles County Department of Planning and

Growth Management/Codes, Permits & Inspection Services Division 48 hours prior to the start of all construction in accordance to all permits issued @ 301-645-0700.

- e. 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.
- f. Certified compaction tests are required for all trench/fill work in accordance with the latest edition of the Specifications Manual and Grading Ordinance. Final reports and certifications shall be provided prior to pre-final inspections.
- g. Certified compaction tests and geotechnical reports shall be submitted on a bi-weekly basis throughout the course of construction as required by the Specifications Manual.
- h. A progress set of as-built plans shall be submitted prior to "Substantial Inspections" for water and sewer construction for the purpose of obtaining an approval for substantial inspection
- i. As-built plans shall be submitted prior to pre final inspections for all disciplines.
- j. For all structures categorized as a "bridge" according to the definition contained in Section GP.1 of the Charles County Standards and Specifications for Construction Manual, bridge inspection report and certification requirements shall be met prior to the road pre final inspection.
- k. With approval from the Department of Planning & Growth Management all erosion and sediment control structures must be removed prior to the release of bonds.
- l. Street lighting is not permitted in the road right-of-way outside of the Urban Road Standards District.

E. GRADING:

To be complete and in accordance with the Charles County Grading Ordinance and the Specifications Manual. Plans shall be clear and easy to read and should not include overlapping information which would make it difficult to review.

1. **Review and Inspection Fee:** The fee for the review and inspection of a DS Permit for grading operations shall be:
 - a. As established in the latest Charles County Fee Schedule (**Fee Schedule**) based on the latest Charles County Unit Prices for Fee Establishment and Security Amounts (**Unit Prices**).
 - b. The fees shall be payable to the Commissioners of Charles County. The Review Fee shall be submitted with the initial submission and the Inspection Fee shall be submitted at the time of the issuance of the DS Permit. If the final Review Fee is less than the amount previously paid, a credit of the overpayment will be given toward the required Inspection Fee.
2. **Bond Amount:** The amount of the bond for grading operations shall be computed as follows:
 - a. As established in the latest edition of the **Unit Prices**.
3. **Cost Estimate** - A construction cost estimate for grading outside of the road right-of-way is required. Cost estimates shall be based on the latest **Unit Prices** and included under the Stormwater Management Bond.
4. **General Requirements for an Overall Residential Conceptual Grading Plan**
 - a. Overall conceptual grading plans for subdivision projects shall be provided on separate sheets for all subdivisions of lots of 2 acres or less and/or all subdivisions where grading single family lots impact adjacent lots. This plan shall be provided on separate sheets. The following information shall be provided on the conceptual grading plans:
 1. building restriction lines
 2. projected house locations
 3. easement locations and dimensions (labeled)
 4. existing and proposed contours (2' contour interval minimum) with elevations

(note that grades need to comply with all applicable building codes as well as the Grading Ordinance)

5. conceptual entrance and driveway culvert locations and sizes
6. the lowest finished floor elevation, the basement floor elevation (if applicable) and the garage floor elevation (if applicable)
7. environmentally sensitive areas such as Wetlands, RPZs, Critical Areas, Floodplains (with elevations), Forest Conservation, etc.
8. Soil series and high groundwater information
9. Geotechnical information necessary if located in the "Area of Special Geotechnical Consideration"
10. Stormwater information for lots with individual lot swm design as outlined in the SWM Design Manual
11. Other site information of particular interest which may affect the building or activities on the site.

It shall be the responsibility of the applicant of the DS Permit to assure that each individual subdivision lot may be properly graded during the Building Permit process without grading on adjacent lots or without obtaining offsite permission from offsite property owners. A note shall be added to the plans stating the following:

Building permits shall include a site plan showing that each individual lot be graded in substantial compliance with the overall conceptual lot grading plan or as approved by the Department of Planning and Growth Management.

5. Area of Special Geotechnical Consideration

- a. A geotechnical report will be required for new construction in the portion of the County designated as the "Area of Special Geotechnical Consideration". The geotechnical report shall be prepared by a professional engineer licensed in the state of Maryland. The geotechnical report shall identify all unstable soil conditions and make recommendations for construction requirements where the unstable soil conditions exist. Unstable soil conditions shall include but not be limited to, high shrink/swell or other unstable soil conditions as determined by the geotechnical engineer. These recommendations shall become a part of the construction permit requirements.

The geotechnical construction recommendations shall include all necessary requirements for roads, grading, drainage, stormwater management, water & sewer, buildings, foundations, landscaping, utilities, and any other construction as determined by the county. A generalized map is attached in Appendix 11.

6. Minimum Grading Plan Information Requirements

- a. Show property boundaries with bearings and distances
- b. Show benchmark locations with elevations
- c. Provide a timing schedule with anticipated start date, major construction milestone dates and completion date
- d. Show the location of all proposed buildings, structures, utilities, sewers, storm drains, stormwater management facilities, roads, parking areas, curb & gutters, landscape areas, streams, channels, ditches, wetlands, buffers, floodplains, backwaters, easements, resource protection zones, tree lines, limits of disturbance, or any other environmental feature or structures located within the limits of where the work is to be completed
- e. Gain authorization and provide written copy for off-site grading rights for all work proposed outside of the property boundaries. Any work requiring a recorded document shall have such document reviewed, approved and recorded prior to the issuance of the DS permit.
- f. Show the location of all existing buildings, structures, utilities, sewers, storm drains, stormwater management facilities, roads, parking areas, curb & gutters, landscape areas, streams, channels, ditches, wetlands, buffers, floodplains, backwaters, easements, resource

protection zones, tree lines, limits of disturbance or any other environmental feature or structures located within a minimum of one hundred feet (100') from where the work is to be completed or from the property line. Information beyond one hundred feet (100') may be required by the County if deemed necessary

- g. Existing topography (contours and elevations) shall be shown for the entire site extending at a minimum of one hundred feet (100') beyond the property line (farther if deemed necessary by the County). Contour interval shall be two feet (2') with elevations established on all contour lines
- h. Proposed topography (contours and elevations) shall be shown for the entire site extending at a minimum of one hundred feet (100') beyond the property line (farther if deemed necessary by the County). Contour interval shall be two feet (2') with elevations established on all contour lines
- i. Show an estimate of quantity of fill involved
- j. Show the locations of any soil boring or soil test
- k. If controlled fill is specified, provide soil classification and maximum dry density and moisture content of all controlled fill
- l. All proposed improvements to include roads, water and sewer systems, storm drain pipes and structures, culverts, stormwater management devices shall be ghosted
- m. All proposed easements with dimensions and labels
- n. Geotechnical recommendations
- o. With approval from the Codes, Permits & Inspections Services Division all erosion and sediment control devices must be removed prior to the release of the bonds

F. ROADS: To be in accordance with the Charles County Road Ordinance.

1. **Review and Inspection Fees:** The fees for review and inspection of a DS Permit for road improvements shall be as follows:
 - a. As established in the latest **Fee Schedule** based on the latest **Unit Prices**.
 - b. The fees shall be payable to the Commissioners of Charles County. The Review Fee shall be submitted with the initial submission and the Inspection Fee shall be submitted at the time of the issuance of the DS Permit. If the final Review Fee is less than the amount previously paid, a credit of the overpayment will be given toward the required Inspection Fee.
2. **Bond Amount:** The bond amount for road, common access driveways and entrance improvements shall be as follows:
 - a. 110% of the estimated cost of construction for construction within the right-of-way & common access driveways if applicable. The minimum bond amount for Commercial, Industrial, and multi-family entrances shall be \$5000.
3. **Cost Estimate** - A construction cost estimate for road and/or entrance improvements within the road right-of-way as well as construction of common access driveways is required. Cost estimates shall be based on the latest **Unit Prices**.
4. **Roadway Plan & Profile Sheets**
 - a. Plan view and relative profile views, i.e. same station break points, shall appear on separate plan sheets.
 - b. Plans shall be drafted to scales which meet Section II, Paragraph C-4.
 - c. Roadway Plan View - The plan view shall not show grading or unnecessary information. The plan shall contain the following information:
 1. Dimensions - Pavement, shoulders, hiker/biker paths, sidewalks, and right-of-way widths shall be noted at a minimum rate of one per page per roadway shown.

2. Road Names - The road name shall be provided and placed outside of the road right-of-way limits. Names shall be bold and placed so as not to cause confusion with other information on the sheet. These names shall be as approved previously by the 911 Addressing Office with the preliminary subdivision plans.
3. Classification and Design speed - Shall be noted per each roadway design and placed below, adjacent to roadway name.
4. Stationing - Shall meet provisions of Section II paragraph B - 6&7, and shall be comparable to the stationing of the profile view.
 - (a) Stationing for roadway extensions shall be continued from the previous project, section, or phase.
 - (b) Stationing for equivalency points of roadway intersections shall be labeled.
 - (c) Provide stationing for significant features such as center of cul-de-sacs, end of pavement, and barricade placement.
5. Horizontal Alignment Data – All data relative to the horizontal alignment shall be provided as follows:
 - (a) Point of Intersection (P.I.)
 - (b) Point of Curvature (P.C.)
 - (c) Point of Tangency (P.T.)
 - (d) Intersection Angle (DELTA)
 - (e) Radius (R)
 - (f) Tangent Distance (T)
 - (g) Tangent Bearing (B)
 - (h) Length of Curve (L)
 - (i) Long Chord Length (L.C.)
 - (j) Middle Ordinate (M)
 - (k) Degree of Curve (D)
 - (l) Superelevation Data (superelevation rate, runoff, etc.) where provided.
6. Property Lines - Property line boundaries shall be shown for each lot and parcel, or subdivision of each, which lies adjacent to the roadway.
7. Storm Drains and Drainage Road (Cross) Culverts - Storm drain systems and road culverts shall be shown and labeled with a description of the structures. Pipes shall be screened to include the type and size.
 - (a) Easements shall be shown, labeled and dimensioned where necessary according to County regulations and Section II, Paragraph M.2. of this package.
8. Cross Section - Representative cross-sections will be provided for each roadway and/or roadway pavement widening in the remaining space available on the plan sheet or on separate sheets. These sections shall consist of not only the necessary widths of roadway, design, and dedication; but also the depths of the pavement section and description of material to be used, shoulders, roadside ditches, curb and gutter size and type, sidewalk width, landscaping width easements, and any other information as required by the County. Provide applicable street names for each detail.
9. Location of Signs
10. Fillet or curb radii with P.C. and P.T. for all streets shall be shown.
11. Label size of existing curb. Label any needed curb transitions.
12. Direction of flow arrows, at curb returns and critical drainage points.
13. Location of pedestrian ramps with detail reference.
14. Pavement markings for acceleration and deceleration lanes, paved shoulders, pedestrian/hiker-biker facilities, parking spaces and where require by section 6.2 of the Road Ordinance, in accordance with current MUTCD standards. This can be shown on a

separate sheet from the road plans. Note angle of hatching paint color and type, line width, and spacing with details as necessary. Label existing markings.

15. Sight distance shall be shown for all intersections and entrances and around small radius turns. Show easements 2' outside the line of sight where it extends outside the right-of-way.
16. Show under-drains (or assessment by geotechnical engineer that they are not needed)
17. Show USPS cluster box units (CBUs) if within the road right-of-way (Ordinance 6.6.B)
18. Label any existing utility poles, signs, mailboxes or other privately owned structures that must be relocated
19. Provide guardrail where warranted with appropriate end treatment labeled. Provide details.

5. Roadway Profile View - The profile view shall contain the following information:

- a. Utility Placement - All utility or storm drain systems crossing the roadway shall be shown on this view. Adequate cover protection must be shown and depths labeled.
- b. Stationing - Shall meet the provisions in Section II paragraphs B-6&7 and shall be continued from the previous project, section, or phase when applicable for roadway extensions.
- c. Vertical Alignment Data - All data relative to the vertical alignment shall be provided as follows:
 1. Point of Vertical Intersection (P.V.I.)
 2. Point of Vertical Curvature (P.V.C.)
 3. Point of Vertical Tangency (P.V.T.)
 4. Grades of Tangents (in percent, with upgrades in direction of increasing stationing being positive and downgrades negative).
 5. Length of Vertical Curve (V.C.L.)
 6. Design Speed - as noted in plan view Section II, Paragraph F.4.c.(3)
 7. Algebraic difference in grade (A)
 8. Vertical offset from P.V.I. to middle of curve, in feet (E).
 9. Profile rate of change (K).
- d. Elevations shall be noted for existing conditions at proposed roadway centerline and right-of-way lines left and right of centerline. In addition, the proposed profile conditions for centerline and right-of-way lines must be shown.
- e. Sight distance shall be shown for all intersections, horizontal curves, when the line of sight is outside of the right-of-way and all entrances.

6. Cul-de-sacs Plan and Profile

- a. Shall meet all requirements stated in Section II, Paragraphs F-4&5 respectively.
- b. Shall show all necessary design features such as: all radii for roadway, cul-de-sac islands, shoulder, and right-of-way.
- c. Cross slope of cul-de-sac bulb shall be shown in plan view.
- d. Linear profile around cul-de-sac bulb at curb line for closed sections only.
- e. Show center point elevation and stationing.

7. Entrances

- a. Commercial-Industrial-Apartment Entrances - shall be shown in detail with respect to typical design standards. Detail shall be noted such as:
 1. Entrance width - measured at straight line tangents.
 2. Radius of entrance fillets.
 3. Pavement section detail - All materials to be used for construction shall be noted, including descriptions, type, and thicknesses.
 4. Entrance profile - this shall be drafted to show adequate cover over drainage structures and utilities.

- 5. Entrance landing grade or slope.
 - b. Subdivision Entrances - shall be shown in relation to Section II, Paragraphs F-4&5.
 - c. Label entrance aprons to be paved. For commercial/industrial/apartment entrances, specify that the apron is to be constructed per Standard Detail R/2.30 to R/2.32.
8. **Sign Schedule** table indicating quantity, type, size, material, and MUTCD reference number for all signs.
9. **Transportation Notes** – the following notes shall be placed on the title sheet or first road plan sheet as applicable:
- a. In accordance with Section 5.6.C of the Road Ordinance, an evaluation of the proposed roadway pavement section based upon existing subsurface and sub-grade soil conditions and worst case scenario for traffic volumes (EAL's) is required to be submitted by a licensed Geotechnical Engineer prior to placement of the sub-base materials. The subgrade must have a minimum CBR value of 7.
 - b. All signs shall be mounted on galvanized channel posts.
 - c. Signs shall be installed prior to substantial completion acceptance.
 - d. Existing pavement shall be sawcut at the white edge line prior to road widening.
 - e. Apply tack coat and bituminous joint sealer at all vertical joints between existing pavement and proposed asphalt widening.
 - f. The contractor shall remove and restripe any pavement markings that are damaged during construction.
10. **Street Tree Planting List** indicating name, quantity, and caliper. Street trees shall be shown and labeled (can be shown on a separate landscaping plan). Specify appropriate tree planting standard details. Provide a note stating, "A certificate of compliance from a landscape Architect, registered in the State of Maryland, shall be submitted to the County Highway Engineer by the owner/developer of the project prior to bond release. The certification shall state that the type and location of all planted street trees are in compliance with the Road Ordinance, Standard Detail Manual, and/or approved construction plan."
11. **Maintenance of Traffic Control Plan** shall be shown as per MUTCD and the MSHA standards. The following note shall be placed on the MOT plan: "Standard hours for work within the public road right-of-way are from 9 am to 3 pm on weekdays, excluding holiday periods"

The following special provisions apply to road closures of more than 15 minutes duration:

- a. Road closures shall be approved by the County Highway Engineer during project design. The Engineer may require specific signage, times of operation, or other restrictions to be specified on the plan.
 - b. Road closures shall not be permitted during holiday seasons.
 - c. Variable Message Sign (VMS) shall be placed in each direction 2 weeks prior to street closures and remain in place as directed by the County Highway Engineer. The VMS messages shall be shown on the plan.
 - d. Road closures shall be advertised in the local newspaper by the contractor twice per week during the two weeks prior to closure.
12. **School bus turnaround** with "NO PARKING" signs in accordance with the Road Ordinance.

G. STORMWATER MANAGEMENT: Where applicable, new projects requiring a DS Permit must follow the Charles County 3-Step SWM Plan Review Process. Procedures for submission of Concept Stormwater Management Plans (Step 1) and Site Stormwater Management Plans (step 2) can be found in Appendix 14 Projects which have received a SWM Administrative Waiver do not follow the 3-Step Plan Review Process.

All stormwater management designs shall be in accordance with the Charles County Stormwater Management Ordinance and the 2000 Maryland Stormwater Design Manual (and any supplements).

1. **Review and Inspection Fees:** The review fees are based on the County's "**Fees and Charges**" schedule is required. This review fee shall be submitted with the initial submission of plan and the inspection fee shall be submitted prior to the issuance of a DS Permit. The fees are to be made payable to the Commissioners of Charles County. If the final review fee is less than the initial amount previously paid, a credit of the overpayment will be given toward the required inspection fee. Fees schedules are posted yearly on the County's web site.
2. **Bond Amount:** The bond amount for stormwater management shall be 110% of the total estimated construction cost estimate. The construction cost estimate is based on unit prices established in the latest **Unit Prices**.
3. **Cost Estimate:** The construction cost estimate shall be based on the **Unit Prices**. Stormwater management construction cost estimates shall be separate from all other categories. Public facilities shall be broken out separate from the private facilities within the cost estimate.
4. **Municipal National Pollutant Discharge Elimination System (NPDES)** - Charles County is required to have an acceptable stormwater management program to remain in good standing in the Charles County's **Municipal National Pollutant Discharge Elimination System (NPDES)** and may impose any stormwater management requirement from time to time to assure the County's standing.
5. **SWM Administrative Waivers** - Project which received preliminary stormwater management plan approval prior to May 4, 2010 may request a SWM Administrative Waiver. Projects which receive a SWM Administrative Waiver may use the 2001 SWM Ordinance and the 2000 Maryland Stormwater Design Manual (without the supplement) as the basis for the design. SWM Administrative Waivers have sunset dates which would require a project submitted to receive final swm and sediment and erosion control approval by May 4, 2013 and final completion acceptance of the swm facilities and the associated sediment and erosion control facilities by May 4, 2017. Project receiving a SWM Administrative Waiver must submit a copy of the approval letter with the plan submission.
6. **Right-to-Discharge** - If the project includes the increase of discharge from any point from a project the project developer may gain a Right-to-Discharge from the adjacent property owner after it has been determined that there is an adequate outfall. The Right-to-Discharge must be obtained prior to DS Permit approval and must be recorded in the Land Records of Charles County and must be shown on the plans.
7. **Adequate Conveyance** - Each project must adequately convey offsite runoff entering into the project via an adequate conveyance system. The development of the project cannot impede or backwater runoff onto the adjacent upstream properties beyond the pre-existing limits without gaining the rights through acceptable recorded documents. All documents must be recorded prior to DS Permit approval.
8. **Location of Nonstructural, ESD or Micro Scale SWM Practices** used in urban residential projects (excluding apartment complexes) shall be off the lots unless approved by the County in advance. These practices may be used in rural residential projects if it would be impracticable to place in an open space area. If an on-lot ESD practice or micro-scale bmp (excluding nonstructural practices for rooftop or non-rooftop disconnections) is provided to address a single residential lot then a SWM Inspection & Maintenance Agreement (Appendix 13) must be recorded prior to the issuance of the associated building permit.
9. **I&M Agreements for Single Family Lots** - The County may ask for recorded SWM I&M agreements for single family lots.

10. **Inventory Sheets for Micro-Scale or ESD practices on Single Family Lots** - The County may ask for inventory sheets for micro-scale or Nonstructural/ESD practices utilized on single family lots.
11. **Bonding for Open SWM Channels** - If a swm practice such as an open ditch serves a dual purpose (swm and drainage) the bonding for practice shall be included in the swm bond only.
12. **Large Land Disturbance Activities** such as mining projects are not exempt from having to address stormwater management. Stormwater management for these projects shall meet the swm requirements by designing swm using the target for ESD implementation to be “woods in good condition”. Once the mining is completed and if portions of the site will be returned to agricultural land management practices (cultivation of crops for sale) then the stormwater management plans may be revised to eliminate any stormwater management practice for those portions of the site returning to crop cultivation. The stormwater management for those portions of the site not returned to crop cultivation such as access roads must remain and be protected by permanent easements and or agreements.
13. **Step 1 - Concept Stormwater Management Plans:** Procedures for submission of the Concept SWM Plan are provided in Appendix 14. The information required on a Step 1 SWM Plan is outlined in the Stormwater Management Ordinance and the 2000 Maryland Stormwater Design Manual (including supplements). Key elements are listed here:
 - a. Plans sheets shall be formatted according to final plan standards noted above. In addition to the standard applicable information the title sheet shall contain the wording “Concept SWM Plan” in the project title.
 - b. Drawings at a scale not to exceed 1”=50’ showing site location, existing natural features, water and other sensitive resources, topography, and natural drainage patterns;
 - c. The anticipated location of all proposed impervious surfaces, buildings, roadways, parking, sidewalks, utilities, and other site improvements;
 - d. The location of the proposed limit of disturbance, erodible soils, steep slopes, and areas to be protected during construction;
 - e. Preliminary estimates of Stormwater Management requirements, the selection and location of ESD practices to be used, and the location of all points of discharge from the site;
 - f. A SWM report with the following information:
 - g. Cover page with the following information:
 1. Project title information to include the Wording “Concept SWM Plan”
 2. Assigned PGM #
 3. Project location information (ex: tax map, grid and parcel)
 4. Design firm information
 5. Seal and signature of the responsible design professional
 6. Any State required certification
 - h. A narrative that supports the concept and describes how the design will achieve:
 1. Natural resource protection and enhancement,
 2. Maintenance of natural flow patterns,
 3. Reduction of impervious areas through better site design, alternative surfaces, and nonstructural practices,
 4. Integration of erosion and sediment controls into the stormwater strategy, and implementation of ESD planning techniques and practices to the MEP.
 - i. Plans sheets shall be formatted according to final plan standards noted above. In addition to the standard applicable information the title sheet shall contain the wording “Concept SWM Plan” in the project title.
 - J. Any other information required by the County Engineer.

- k. After the approval of the concept plan and within two weeks from the date of the approval letter the engineer will submit one hard copy check plan and electronic copies of the plans and the report on one compact disc (CD). The County may reject future submittals until the electronic copies of the approved plans and reports are provided. Failure to provide electronic copies of the approved plans and report may result in a voiding of the project in which case the review fees will be forfeited and the project will have to start the review process from step 1.
- 14. Step 2 - Site Stormwater Management Plans:** Procedures for submission of the Site SWM Plan are provided in Appendix 14. The information required on a Step 2 Stormwater Management Plan is outlined in the Stormwater Management Ordinance and the 2000 Maryland Stormwater Design Manual (including supplements). Key elements are listed here:
- a. All information provided during the Concept Stormwater Management Plan review phase;
 - b. Final site layout, exact impervious surface locations and acreages, proposed topography, delineated drainage areas at all points of discharge from the site and stormwater volume computations for ESD practices and quantity control structures;
 - c. A proposed erosion and sediment control plan that contains the construction sequence, any phasing necessary to limit earth disturbances and impacts to natural resources, and an overlay plan showing the types and locations of ESD and erosion and sediment control practices to be used;
 - d. A report with sufficient calculations to support the design;
 - e. A narrative that supports the site development design, describes how ESD will be used to meet the minimum control requirements, and justifies any proposed structural stormwater management system;
 - f. Soils report to include the soil boring and soil test results;
 - g. Any waiver requests with supporting information and calculations;
 - h. An adequate outfall study; and
 - i. Any other information required by the County Engineer.
- 15. Step 3 - Final Stormwater Management Plans:** - SWM plans, detail sheets and notes shall be separate from all other categories (unless approved otherwise by the County Engineer) and contain the following:
- a. A vicinity map;
 - b. Topography showing existing and proposed conditions, including areas necessary to determine downstream analysis for the proposed stormwater management facilities;
 - c. All proposed improvements including, locations of buildings or other structures, impervious surfaces, storm drainage facilities, and all grading;
 - d. The location of all existing onsite structures and offsite structures which may be impacted by the proposed development;
 - e. Existing easements to include label, dimensions, book /page number of the plat;
 - f. Proposed easements with labels and dimensions;
 - g. Existing and/or proposed right-of-ways with label and dimensions;
 - h. Buffers, wetlands, or other environmental features with labels and dimensions;
 - i. One hundred (100) year floodplains with source identified, labels, dimensions and elevations;
 - j. Structural and construction details for all components of the proposed swm outfall system or systems and stormwater management facilities;
 - k. Construction specifications;
 - l. A separate sequence of construction specific to stormwater management;
Note: References to the erosion and sediment control sequence of construction are not acceptable. The swm sequence of construction should describe how construction of the swm facilities is to occur and when their construction should occur relative to upstream land disturbances.”
 - m. Data in table form for the total site area, disturbed area, existing impervious areas, new impervious areas, and total impervious areas;

Example:

SITE INFORMATION	AREA (ACRES)
TOTAL SITE AREA	5.2
DISTURBED AREA	4.5
EXISTING IMPERVIOUS AREA	0.5
NEW IMPERVIOUS AREA	2.5
TOTAL IMPERVIOUS AREA	3.0

- n. A table of materials used for the stormwater management facility(ies) stabilization and plantings;

Example:

SWM FACILITY	FINAL STABILIZATION/PLANTINGS
SWM 1	4" TOPSOIL, SEED AND STABILIZATION MATTING
SWM 2 (EX. POND 1)	REFER TO PLANTING PLAN ON SHEET 13
SWM 3 (POND 2)	REFER TO PLANTING PLAN ON SHEET 15
SWM 4	4" TOPSOIL, SEED AND MULCH

- o. A table showing the total site(LOD) ESDv required and the total site (LOD) ESDv provided;
- p. A table broken down into drainage areas showing the ESDv required and ESDv provided for each drainage area based on the LOD;
- q. ESD Screening Summary (see Appendix 15).
- r. All soil boring or soil investigation logs and locations;
- s. A maintenance schedule for all swm devices;
- t. A concept swm single family lot plan showing the conceptual treatment for all potential lot improvements including the homes and the driveways. Consideration for future expansions, decks and swimming pools should be made when designing the swm practices.
- u. A table of lots indicating the lot number and the structural or nonstructural swm practices employed or required for the lot;
- v. A table of swm practices to include number (all to be numbered consecutively, ex. SWM-1, SWM-2, SWM-3, etc. and labeled as such on the plans), type, MDE Design Manual designation (P-1, W-1, I-1, F-1, etc.), and the drainage area to the swm device,

Example:

SWM FACILITY	Type	MDE Designation	CONTRIBUTING DRAINAGE AREA (ACRES)	Notes
SWM-1	Submerged Gravel Wetland	M-2	0.75	
SWM-2 (EX. POND 8)	Wet Pond	P-2	15.4	
SWM-3 (POND 3)	Dry Pond	NA	27.2	Quantity Control Only
SWM-4	Micro-Bioretenion	M-6	0.4	

- w. Owner's Certification (see Appendix 10);
- x. Engineer's Certification (see Appendix 10);

- y. Landscape plan;
- z. Pond drain;
- aa. Drain valve;
- bb. Fences and gates;
- cc. Railings on riser tops;
- dd. Endwall fences on outfalls greater than 48" diameter;
- ee. Safety benches;
- ff. Observation wells;
- gg. Roadside ditches used for swm shall be enclosed in swm easements
- hh. Any and all notes, details, tables, or information as requested by Charles County

16. **Stormwater Management Computations** shall include those required in the 2000 Maryland Stormwater Design Manual and any supplement (with applicable appropriate formulas) and the following:

- a. Existing and developed RCN's;
- b. Time of concentration calculations;
- c. Existing and proposed discharge calculations;
- d. TR-55;
- e. TR20;
- f. Stage-storage calculations;
- g. Volume calculations;
- h. P_E Rainfall Target from Table 5.3 of the Design Manual;
- i. R_V Dimensionless Volumetric Runoff Coefficient;
- j. Q_E Runoff Depth
- k. ESD_V Runoff Volume
- l. Water Quality volume (WQ_V) calculations (if SWM Administrative Waiver obtained);
- m. Recharge volume (Re_V) calculations (if SWM Administrative Waiver obtained);
- n. Channel protection volume (Cp_V) calculations (if SWM Administrative Waiver obtained);
- o. Overbank flood protection volume (Q_{p10}) calculations;
- p. Extreme flood volume (Q_{f100}) calculations (if applicable);
- q. Adequate outfall calculations (if applicable);
- r. Water balance analysis (if applicable); and
- s. Any other calculation necessary to support the design or requested by Charles County

17. **Drainage Area Maps (Stormwater Management)** - Drainage area maps shall be incorporated on the plans or included in the stormwater report (preferred) and provided on separate sheets. Existing and proposed maps shall be separate from each other. These maps shall be prepared at a scale of at least 1" = 200' and shall contain the following:

- a. Subareas for each design point;
- b. Design points shall be clearly, marked, labeled and numbered consecutively;
- c. Time of concentration paths - show each reach length;
- d. Land uses - existing and proposed showing RCN's (as applicable);
- e. Show TR-20 cross-sections, structures, reaches, etc;
- f. Topography extending to boundary lines and/or past drainage boundaries to confirm drainage breaks;
- g. Analysis shall extend downstream to limits of impact;
- h. Show soil types and hydrologic soil groups;
- i. Existing and or proposed roads, buildings or other structures;
- j. One hundred (100) year flood plains and any other important environmental features; and
- k. Any and all notes, details, tables, or information as requested by Charles County.

18. **Stormwater Management Report** - All projects shall be submitted with a swm report prepared by a professional licensed in the State of Maryland. The report shall be properly bounded with a report cover and back and shall include the following:

- a. Name of project (cover);
- b. Seal and original signature of the licensed professional (cover);
- c. Date of the report (cover);
- d. Dates of all revisions (cover);
- e. Election district (cover);
- f. Tax map and parcel (cover);
- g. Name, address & telephone number of the design firm (cover);
- h. Vicinity map (cover);
- i. Table of contents;
- j. A list of acronyms, or abbreviations used in the report;
- k. Summary of the proposed development;
- l. Summary of the existing conditions of the site;
- m. Methodologies;
- n. Descriptions of all existing watercourses, environmental features, existing impoundments, wetlands on or adjacent to the site into which stormwater directly flows;
- o. Page numbers;
- p. Any pictures, diagrams, or summaries as necessary;
- q. Geotechnical investigations including soil maps, borings, site specific recommendations, and any other geotechnical related information necessary for the proposed swm design;
- r. Summary of structural swm, ESD and nonstructural swm methods employed on the site with a discussion of where such measures are employed;
- s. Copies of existing swm reports if used to support waivers with a summary discussing how the swm is addressed in an existing facility. The report shall include a certification that the existing swm report has been thoroughly reviewed and that there is a concurrence with the conclusions, findings and results of said report;
- t. A thorough discussion of downstream conditions;
- u. Compact disc with a copy of the report, calculations, pictures, scanned drawings and any other information requested by Charles County. Scanned Drawings shall be in tif format, pictures shall be in jpg format and the report shall be in searchable pdf (portable drive format);
- v. Stormwater management summary sheets;
- w. Any and all notes, details, tables, or information as requested by Charles County.
- x. All swm Quality, Quantity and or ESD calculations.
- y. ESD Screening sheet (see Appendix 15)
- z. Chapter tabs

H. STORM DRAINAGE: To be in accordance with the Charles County Drainage Ordinance.

1. **Review and Inspection Fees:** The Review and Inspection fees shall be based on the Fee Schedule. The fee shall be separate from all other categories.
2. **Bond Amount:** The bond amount for stormwater conveyance systems shall be 110% of the estimated cost of construction.
3. **Cost Estimate:** The construction cost estimate shall be based on the Unit Prices for Fee Establishment and Security Amounts. Storm drainage for public facilities shall be broken out separate from the private facilities within the cost estimate.
4. **Bonding of Open Conveyance Systems** - If a stormwater conveyance system such as an open ditch serves a dual purpose (swm and drainage) the bonding for practice shall be included in the swm bond only.
5. **Approved Software Packages:** The following is a list of approved software packages to use in culvert, storm drain or hydraulic gradient calculations. The format of the information generated by the appropriate software shall replicate the appropriate MdSHA form.
 - a. Hydraflow Storm Sewers 2005
 - b. HY-8

6. **Plans:** Storm Drainage plans shall include the following:
 - a. Storm Drain Schedule shall include the following:
 1. Structure number
 2. Structure type
 3. Road station or location
 4. Detail Reference Number (e.g. Cog-15, MD-374.64, Standard Drop Manhole, MD 383.11, etc.)
 5. Other information not placed on profiles.
 - b. Ditch Schedule shall include the following:
 1. Beginning and ending road stations (i.e. 100+00L-150+00L) or location
 2. Right and left side slope (i.e. 3:1R/4:1L)
 3. Base width (ft)
 4. Manning Roughness Coefficient (n)
 5. Design depth (ft)
 6. Slope (%)
 7. Design V
 8. 100-year storm depth (ft)
 9. Lining type (i.e. seed & mulch, sod, soil stabilization matting (specify type), etc.)
 10. Lining depth (rounded to nearest ½ foot)
 11. Critical Depth
 12. Froude Number
 - c. Pipe Schedule for storm drains shall contain the following:
 1. Number
 2. Size
 3. Type
 4. Length
 5. Design Q (discharge)
 6. Design V (velocity)
 7. Design S (slope)
 8. Manning Roughness Coefficient (n)
 - d. Culvert Schedule shall contain the following
 1. Number
 2. Size
 3. Type
 4. Manning Roughness Coefficient
 5. Length
 6. Design Storm
 7. Design Q (discharge)
 8. Design V (velocity)
 9. Design S (slope)
7. **Plan View of Stormwater Conveyance Systems** shall include the following:
 - a. Structure number for all structures including, inlets, manholes storm drains, etc.;
 - b. Pipe diameter and type (CMP, RCP, HDPE, etc.) for all stormwater pipes;
 - c. Drainage easement widths see Section II.M.7;
 - d. Direction of water flow; and
 - e. Any other information as requested by the County Engineer

8. **Storm Drain and Ditch Profiles** shall include the following where applicable:
 - a. Scale;
 - b. Elevation versus station plot (proposed and future grade);
 - c. Structure number;
 - d. Invert-In and Invert-Out elevations;
 - e. Pipe diameter size/type/class;
 - f. Percent of grade;
 - g. Plot of 10-year hgl (local), 25-year hgl (collector) 50-year (arterial);
 - h. Ten year discharge, Q_{10} ;
 - i. Ten year velocity, V_{10} ;
 - j. All utility crossings, especially water and sewer crossings;
 - k. 100-year water surface elevations and backwaters where applicable;
 - l. Horizontal elevation lines and vertical station lines; and
 - m. Any other information as requested by Charles County

9. **Details** (give scale) are required for the following:
 - a. Inlets (modified inlets, show channelization);
 - b. Pipe (field connection joints);
 - c. Channels/ditches (stabilization/side slopes/percent grade/dimensions);

10. **Computations** shall be contained in a report sealed and signed by the responsible Professional Engineer or Professional Land Surveyor registered in the State of Maryland and contains the following (separate from the stormwater management reports):
 - a. Nomographs for inlet capacity;
 - b. Nomographs for gutter capacity;
 - c. Computations for storm drain capacity;
 - d. Rational formula shall used for all systems and culverts receiving 50 acres or less drainage area
 - e. Rational formula shall be used for all storm drain system design
 - f. Hydraulic gradient computations;
 - g. Computations for open channel flow;
 - h. Computations for energy dissipaters;
 - i. Culvert analysis;
 - j. Engineer's cost estimate;
 - k. Hydraulic jump (if applicable);
 - l. Adequate outfall calculations; and
 - m. Any other calculation as requested by Charles County

11. **Storm Drain Design and Calculations Methods** shall be per the MdSHA Drainage Manual and/or Storm Drainage ordinance and on MdSHA forms (SHA-61.1-492) or in a form which replicates all of the information and format found on the referenced form. If storm drain calculations are prepared using a Charles County approved software package then the spreadsheet shall clearly identify the software. Storm drain calculations shall at a minimum contain the minimum information:
 - a. Project Name
 - b. Title (Storm Drain Calculations)
 - c. Design Storm Frequency
 - d. Structure # From
 - e. Structure # To
 - f. Drainage Area #
 - g. Area in acres (A)
 - h. Runoff Coefficient (C)

- i. Product of Runoff Coefficient x Area (CA)
- j. Sum of Area in acres ($\sum A$)
- k. Sum of Runoff Coefficient x Area ($\sum CA$)
- l. Time of Concentration minutes (T_c)
- m. Rainfall Intensity x Rainfall Factor* in/hr (i_i)
- n. Design Discharge in cfs ($Q_{10/25/50/100}$)
- o. Size in inches
- p. Type
- q. Mannings Roughness Coefficient (n)
- r. Design Slope in % (S_o)
- s. Length (ft.)
- t. Design Velocity in ft/s (V_o)
- u. Velocity (Full Flow V_{full})
- v. Capacity (Q_f) in cfs
- w. Remarks

* The rainfall intensity factor shall be 1.02 for T_c or 10 minutes or less (See MdSHA Drainage Manual Chart SHA 61.1-403.1). For T_c values of greater than 10 minutes to 40 minutes the rainfall intensity factor shall be between 1.025 – 1.05 (see See MdSHA Drainage Manual Chart SHA 61.1-403.2). For T_c values of greater than 40 minutes to 150 minutes the rainfall intensity factor shall be between 1.00 - 1.02 (See MdSHA Drainage Manual Chart SHA 61.1-403.3).

12. **Hydraulic Gradient Calculations** shall be per the MdSHA Drainage Manual and on MdSHA forms (SHA-61.1-493) or on spreadsheets which replicate all of the information and format found on the referenced form. If hydraulic gradient drain calculations are prepared using a Charles County approved software package then the spreadsheet shall clearly identify the software. Hydraulic gradient calculations shall include the headloss due to friction and the elevation associated with the headloss, the headloss due type of structure and the angle between the incoming and outgoing pipes. Also if two pipes feed into one structure calculations shall be provided to determine the controlling angle (See MdSHA Drainage Manual I-4-C-11). Hydraulic Gradient calculations shall at a minimum contain the minimum information:

- a. Project Name
- b. Title (Hydraulic Gradient Calculations)
- c. Design Storm Frequency
- d. Structure # From
- e. Structure # To
- f. Sum of $C * A$ ($\sum CA$)
- g. Time of Concentration in minutes (T_c)
- h. Rainfall Intensity x Rainfall Factor* in in/hr
- i. Design Discharge in cfs (Q_d)
- j. Pipe Size in inches
- k. Mannings Roughness Coefficient (n)
- l. Design Slope in % (S_o)
- m. Friction Slope in % (S_f)
- n. Friction Velocity in ft/s (V_f)
- o. Length in ft
- p. Normal depth (D_n)
- q. Bend Loss Coefficient (K_b)
- r. Description of Loss*
- s. Elevation in ft

*The hydraulic gradient calculations shall include the calculations for the headloss due to friction in the pipe ($H_f=S_fL$) and should use methods outlined on page I-4-C-1 of the MdSHA Drainage Manual. The hydraulic gradient calculations shall include the calculations for headloss due to the structure as outlined on page I-4-C-2 of the MdSHA Drainage Manual, headloss due to the structure and/or bend loss ($K_b \times (V^2/2g)$) and the hydraulic gradient elevation associated with the

bend loss.

13. **Culvert Analysis** shall be per the MdSHA Drainage Manual and on MdSHA forms (SHA-61.1-490) or on spreadsheets which replicate all of the information and format found on the referenced form. If culvert analysis is prepared using a Charles County approved software package then the spreadsheet shall clearly identify the software. Culvert Calculations shall be per MdSHA Drainage Manual I-2-B-11 thru I-2-B-13 and shall contain the following information:

- a. Project Name
- b. Title (Culvert Analysis)
- c. Culvert #
- d. Road and station
- e. Hydrologic Information (SCS or Rational)
- f. Design Storm Analysis (10-year, 100-year)
- g. SCS Method
 1. Acres
 2. RCN
 3. Tc (min)
 4. Q cfs
- h. Rational Method
 1. Area
 2. Cw
 3. Tc
 4. iif (rainfall x intensity factor)
 5. Q cfs
- i. Sump pavement edge elevation
- j. AHW depth (ft)
- k. Culvert invert-in elevation (ft)
- l. Culvert invert-out elevation (ft)
- m. Culvert slope (So) %
- n. Length (ft)
- o. Culvert Dimensions
- p. Culvert Type
- q. Entrance Type
- r. Inlet Control
 1. HW/D
 2. HW
- s. Outlet Control
- t. Ke (Entrance control coefficient)
- u. D_c (critical depth)
- v. (D_c+D)/2
- w. Tw (with calculation or fixed depth)
- x. ho
- y. S_iL
- z. V_f
- aa. V_f²/2g (velocity head)
- bb. H
- cc. LSo
- dd. HW
- ee. Controlling HW

1. Depth
2. Surface elevation

- ff. Comments
gg. V_o

14. Spread

- a. Local Roads - the lesser of 8' on a 2-year storm or $\frac{1}{2}$ the travel lane
- b. Collector streets - the lesser of 8' on a 2-year storm or $\frac{1}{2}$ the travel lane
- c. Arterial streets - the lesser of 8' on a 2-year storm or $\frac{1}{4}$ the travel lane

I. DRAINAGE AREA MAPS (Stormwater Conveyance Systems)

Drainage area maps (existing and proposed conditions are to be separate) with a scale of at least 1"=200' may be incorporated as part of the plan assembly or provided in the storm drainage report (preferred) and must contain the following:

- a. Subareas for each structure or portion of drainage system;
- b. Time of concentration paths - show each reach length;
- c. Land uses - existing and proposed showing RCN's;
- d. Show TR-20 cross-sections, structures, reaches, etc;
- e. Show point of investigation;
- f. Analysis shall extend downstream to limits of impact; and
- g. Show soil types and hydrologic soil groups.

Note: Drainage area maps for storm drainage shall be separate from the stormwater management drainage area maps.

J. WATER AND SEWER: In accordance with the Charles County Water and Sewer Ordinance.

1. **Review and Inspection Fees:** A review fee based on the Charles County Fee Schedule is required. This review fee shall be submitted with the initial submission of plan and the Inspection Fee shall be submitted prior to the issuance of a DS Permit. The fees are to be made payable to the Commissioners of Charles County. If the final review fee is less than the initial amount previously paid, a credit of the overpayment will be given toward the required Inspection Fee.
2. **Bond Amount:** The bond amount for water and sewer construction shall be 110% of the total estimated construction cost estimate. The estimated cost of construction shall be based on the latest "Unit Price List for Development Agreement Security Amounts and Plan Review Fees".
3. **Cost Estimate:** A construction cost estimate for water and sewer is required. Cost estimates shall be based on the latest Charles County "Unit Prices for Fee Establishment and Security Amounts".
4. **General Requirements**
 - a. A reference table to a County approved detail shall be shown for each major item on the cover sheet. The table shall include the detail number and name.
 - b. Deed book references for each property (each occurrence) shall be provided.
 - c. Utility crossing depicted in plan view shall be located correctly in profiles.
 - d. Plan view scale shall match profile view scale in each occurrence.
 - e. Service line shall be shown to each lot with clean-out, curb stop/box, or meter crock.
 - f. Each line shall be labeled uniquely and stationed continuously
 - g. State plane coordinates shall be indicated on each plan view.
 - h. Legend shall be provided.

- i. Size, type, class and length of pipe shall be specified for each section.
- j. Provide a signed, dated construction cost estimate broken down for water and sewer with totals for each.
- k. Adequacy of off-site facilities shall be addressed if capacities are questionable, documentation shall be provided. This documentation shall be stamped and signed by a Maryland Registered Professional Engineer.
- l. Each lot/unit shall be labeled uniquely.
- m. Water and Sewer notes shall be provided (Note #1 states scope of work).
- n. Allocation forms shall be submitted to Resource and Infrastructure Management Division.
- o. Clear distinction shall be made for phases.
- p. Indicate location of any gasoline or chemical storage facilities within 200' in any direction of a water or sewer line.
- q. Easements for off-site lines are required.
- r. Provide an overall composite map showing utilities (lines, valves, hydrants and manholes), street names, and sheet reference on which plan view can be found.
- s. PGM #'s and/or deed book referenced for existing lines and easements are required.
- t. Any specific water and/or sewer details not currently in the Detail Manual.

5. Ancillary Permits Required:

- a. Maryland State Highway Administration Utility permit: required when any work is to be done in the right-of-way of any State road. This permit is issued in the name of the Charles County Department of Planning and Growth Management or Charles County Government. The developer submits three (3) completed applications, three (3) sets of site plan/profile (stamped and signed by a Maryland Professional Engineer) folded to 8 ½" x 11" along with three (3) 8-½"x11" vicinity maps. The proposed work in the right-of-way should be highlighted with pink for water; yellow for sewer, and green for fire hydrants, with a written description of specific location and type of work being performed. The County Water and Sewer Engineer will review, stamp for MSHA Review and sign the application. Codes, Permits & Inspection Services Division (CPIS) will then forward the permit to MSHA for processing.
- b. Maryland Department of the Environment Utility Construction Permit; is required for:
 - 1. Any water or gravity sewer mains sixteen inch (16") or greater in size.
 - 2. Any size force mains.
 - 3. Construction of any water booster pumping stations, wells, other water treatment facilities, storage towers or other storage facilities, sewer pumping stations and any sewer treatment facilities.

Application for this permit is made by the Developer to the State of Maryland, Department of the Environment, Division of Engineering & Permits, 2500 Broening Highway, Baltimore, MD 21224. This permit is issued by MDE only after the Charles County Water and Sewer Engineer has stamped the drawings "Approved/MDE Review". The County Water and Sewer Engineer must also sign the "Financial Management Plan" section of the prepared application, if the water and sewer facilities are to be dedicated to the County. This package will be returned back to the Developer for their submission to MDE. It should be noted that the water and sewer construction cannot start until the County has been furnished a copy of the issued MDE Permit. It is the responsibility of the Developer to abide by all conditions of the issued MDE Permit.

- c. Other permits such as Wetlands, Critical areas, Army Corps of Engineers, etc. may be required. It is the Developers responsibility to address these concerns.

6. Requirements Specific to Water Plan View:

- a. Indicate what previous project (PGM #) new lines tie into and provide book/page number of dedication to County if applicable.
- b. Lines shall be labeled uniquely and stationed continuously.
- c. Water plans submitted for review and approval to the County will not be required to include the

standard Details. The plans, however, must include a table on the cover sheet listing by detail number and name all of the water details which are applicable to the set of plans. In cases where the County has no adopted standard detail for a specific construction method, the Engineer must submit a special detail to the County's Water and Sewer Engineer for review and approval. Once approved, the special detail shall be placed within the plans with notes referring to the special detail on all applicable sheets.

- d. Service line shall be shown to each lot with a curb stop (or notation explaining why not). Note that for single family service line and water meter crock shall be shown on each lot.
- e. Specify size, type, class and length of pipe for each section (12" - Class 52 - CL DIP, etc.).
- f. Plot private wells for each lot (if applicable) or indicate none.
- g. Provide concrete encasement for protection of water supply per State Health Standards and MDE requirements.
- h. Bends shall be labeled and plotted.
- i. Indicate water meter size and plot location.
- j. Provide meter sizing computations, using COMAR 09.20.11.13, for demands, and AWWA M22, for meter sizing for non-single family and non townhouse uses.
- k. Indicate required permits on cover sheet - MDE, MSHA, etc.

7. Requirements Specific to Water Profile:

- a. Specify size, type, class and length of pipe for each section (12"- Class 52 - CL DIP, etc.).
- b. Specify depth of bury and "bury line" elevation on profile for each hydrant.
- c. Each line shall be labeled uniquely and stationed continuously.
- d. Original ground shall be plotted.
- e. Finished grade shall be plotted.
- f. Each line profiles shall have a vertical and horizontal scale.
- g. Bends shall be labeled and plotted.

8. Requirements Specific to Sewer Plan View:

- a. Indicate what previous project (PGM #) new lines tie into and provide book/page number of dedication to County if applicable.
- b. Service line shall be shown to each lot with a clean-out, at the ROW/Property line, (or notation explaining why not).
- c. Kor-n-Seal or County approved equal, shall be specified and indicated on the plans for tie-in to existing manhole/pump station.
- d. Computations shall be shown on plans in accordance with Chapter 2, 1.J, Technical Bulletin: M-DHMH-EHA-S-001 Edition "Design Guidelines for Sewer Facilities", State of Maryland.
- e. Specify size, type, class, slope and length of pipe for each section from manhole to manhole.
- f. Plot septic areas for each lot (if applicable) or indicate none.
- g. Indicate required permits - on cover sheet, MDE, MSHA, etc.
- h. Provide first floor elevations for each lot.
- i. Sewer service line shall serve all lots to a mid-point of lot at a 2% minimum slope.
- j. Slope greater than 15%: Specify proper County Detail.

9. Requirements Specific to Sewer Profile:

- a. Specify size, type, class, slope and length of pipe for each section from manhole to manhole.
- b. Each line shall be labeled uniquely and stationed continuously.
- c. Original ground shall be plotted.
- d. Finished grade shall be plotted.
- e. Each line profile shall have a vertical and horizontal scale.

10. Requirements Specific to Water and wastewater Pumping Stations, Well Houses and Water Tower design:

- a. Engineering report and technical specifications shall be submitted with the plan.

- b. The report shall include the description of design criteria to be utilized, preliminary flow computations, design calculations, calculated system curves and surge protection analysis/recommendation.
- c. Provide design for all disciplines including civil, mechanical, electrical, structural and architectural plans.

K. FLOODPLAIN STUDIES

1. **Calculated Floodplain Studies** are required for low areas in a development draining fifty (50) acres or more to establish flood limits and elevations.
2. **Floodplain Limits and Elevations** shall be shown on the plans.
3. **Approximate Floodplain Development** - Developments with approximate floodplains (within the project limits) as shown on the Digital Flood Insurance Rate Maps (DFIRM) require detailed calculations to establish flood elevations per procedures establish in the Floodplain Management Ordinance.
4. **Floodplain Studies** - For floodplain studies the Mannings roughness coefficient "n" will be determined using "Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains" United States Geological Survey Water-Supply Paper 2339.
5. **Water Surface Elevations** shall be determined using the US Army Corps of Engineers (USCOE) Hydrologic Engineering Centers - River Analysis System (HEC-RAS).
6. **Electronic Documents** - The County may ask for electronic copies of plans, elevation certificates, declaration of land restrictions or any other document submitted for projects/houses located within the regulatory floodplain.
7. **Runoff Data** shall be those found in latest edition of "Point Precipitation Frequency Estimates" from NOAA Atlas 14 for the site location.

L. SHA ENTRANCE PERMIT

1. A review is required by the State Highway Administration for entrances onto a State Road. Engineers are responsible to submit required information to State Highway Administration at 707 N. Calvert St. Baltimore, MD 21203.

M. PLANNING AND ZONING

1. Planning and Zoning review is conducted to assure that construction drawings are in compliance with Planning Commission and/or the Board of Appeals approval. Planning and Zoning final approval is required prior to the issuance of permits.

N. DEDICATION/CONVEYANCE DOCUMENTS

The items listed below must be submitted to the CPIS Right-of-Way Agent for review concurrently with the record plat or prior to the issuance of the Development Services Permit (DS Permit).

Note: All dedication forms are available at the Charles County website. Copies of these forms can be downloaded at (www.charlescountymd.gov). Only use these forms when preparing your dedication documents, as they are approved by the County Attorney. Complete all blanks where applicable and have the documents signed and notarized.

1. **Easement Agreements:** Water and sewer, public or private slope and drainage, drainage, and/or stormwater management, public sight distance, public pedestrian travel way; are intended to convey necessary rights to the "County Commissioners of Charles County, Maryland" to insure ingress and egress, and the ability to install, construct, reconstruct, operate, maintain, repair and inspect the above referenced facilities. Easements must be labeled to illustrate the intended use and therefore the term "utility" easement may not be used to identify an easement that will be conveyed to the County. The easements must agree with the approved construction plans for construction outside of the County right-of-way and include the printed name and signature of the

owner(s). A signature line must be provided for the Director for Planning and Growth Management as shown below. All lienholders are required to execute the easement agreement to demonstrate their consent or execute a separate consent agreement.

APPROVED FOR ACCEPTANCE:

Director
Planning and Growth Management

- a. Drainage Easements: These easements shall be provided when a development plan directs the discharge of water through the project. Drainage easements shall be provided for open or closed systems located outside of the County right-of-way. These easements shall be provided for all manmade systems or natural systems that have undergone improvements which will require monitoring and maintenance. A natural water course, channel, stream, creek, low, gully, etc. where no improvements have been made or no improvements or maintenance will be required shall not have drainage easements provided.

All Drainage Easements shall be conveyed to the County and shall be located outside the limits of any proposed subdivision lot unless allowed by Ordinance. There are several categories of easements to include the following:

1. A "Public Drainage Easement" shall be a drainage easement extending from an existing or future County or State right-of-way, carrying water from said right-of-way, conveying water through a residential subdivision (single family or townhouse). The easement shall extend for the length of the improvements to an adequate natural water course or stormwater management facility. These easements shall be maintained by the County. Easements in a residential subdivision draining to a County right-of-way not conveying "public" water shall be specified as a "Private Drainage Easement" unless otherwise specified by the County.
 2. A "Private Drainage Easement" shall be a drainage easement extending from an existing or future County or State right-of-way through an industrial, commercial or institutional development. "Private Drainage Easements" shall also be provided where drainage improvements have been made and the easements do not convey public waters (waters from a County or State right-of-way). The easements shall also be provided as determined by the County. These easements shall be privately (not County) maintained.
- b. Stormwater Management Easements and Agreements: Stormwater management easements shall be conveyed to the County and shall be required for the inspection, operation, access and maintenance of stormwater management facilities, nonstructural swm devices, ESD devices and/or natural areas as required.
1. A "Public Stormwater Management Easement" (Appendix 13) shall be conveyed to the County and shall be for all SWM facilities which the County has determined would be maintained by the County.
 2. A "Private Stormwater Management Easement" (Appendix 13) shall be conveyed to the County and shall be for all SWM facilities which will not be maintained by the County but shall be maintained by a private entity.
 3. A "Private Stormwater Management Natural Area Conservation Easements" (Appendix 13) shall be conveyed to the County and shall be for areas where the areas must remain natural. These easements are not maintained by the County.
 4. A "Private Inspection and Maintenance Agreement" (Appendix 13) shall be conveyed to the County and is used to allow the inspection of private swm systems usually located on a private commercial or industrial site. This agreement may be allowed for use in other applications as allowed by the County.
- c. Public Slope Easement: these easements shall be provided for fill slopes supporting a County road system and are County maintained.

- d. Public Slope and Drainage Easement: these easements are similar to “public” drainage easements except that they include road fill slopes that support a County road system.
 - e. Private Slope Easement: these easements shall be provided for fill slopes supporting a County road system. These easements are privately maintained.
 - f. Private Slope and Drainage Easement: these easements are similar to “private” drainage easement except that they include fill slopes that support a County road system. These easements are privately maintained.
 - g. Public Sight Distance Easements: These privately maintained easements are for ensuring a clear line of sight for stopping or intersection sight distance.
 - h. Public Pedestrian Travel Way Easement: These easements are necessary for allowing public access along a pedestrian travel way that is parallel to a County roadway but extends partly or completely outside the County road right-of-way.
 - i. Private Temporary Grading Easements: These easements are for temporary grading on offsite properties when no continual maintenance is needed.
2. **Deeds and Conveyances**: deeds which convey fee simple ownership of road rights-of-way, public use lots (pump station lot, lift station lot, etc.) to the "County Commissioners of Charles County, Maryland" must include the printed name and signature of the owner(s), a reference to the record plats and the name of all streets to be conveyed. A signature line must be provided for the Director for Planning and Growth Management as noted in Section II.M.1.
 - a. County Road Inventory Report (CRIR) – see Appendix 18: The Road Inventory Report will be required with the initial submission of the project. The report shall be updated by the applicant’s engineer if it changes during the project review cycle. The final CRIR must be submitted with the approved as-builts.
 3. **Deed of Partial Release**: it is the intent of this document to separate the real property that will be conveyed to the County from the remainder of the project. This is accomplished by having the lien holder(s) relinquish their interest in the subject real property by fully releasing and discharging the developer from the lien, operation and effects of the trust in the subject area.
 4. **Preliminary Title Report**: must be prepared by an attorney licensed to practice law in the State of Maryland. It is intended to identify persons or entities with an interest in, and disclose any encumbrances that would affect title to, the real property / easements that are to be conveyed to the County.
 5. **Dedication Agreement**: is a standard form and is intended to convey title to the water and/or sewer facilities to the County. This agreement references the Development Agreement and signatures must match those found on the Development Agreement.
 6. **Document Exhibit**: Submit four (4) original copies on 8½” x 14” (legal size) paper of exhibit intended to be attached to and recorded with various documents (ex. water and sewer easement agreement, private drainage easement agreement, public drainage easement agreement, etc.). The exhibit must show all easements to be conveyed, include a north arrow, a vicinity map, the metes & bounds for each easement, the square footage and acreage of each easement, and be signed and sealed by the applicant’s licensed professional. All easements must agree with the approved construction plans.
 7. **Easement Widths**: The following minimum widths apply:

RECOMMENDED WATER OR SEWER

Minimum:	20'	perpetual				
8" to	15"	pipe	20'	perpetual	30'	temporary
18" to	27"	pipe	25'	perpetual	30'	temporary
30" to	48"	pipe	30'	perpetual	40'	temporary
54" to	66"	pipe	40'	perpetual	40'	temporary

Note: easement widths may vary based on depth & size of the pipe.

For depths greater than 5' (five foot) the minimum easement width shall be 2x depth + diameter of the pipe+2 rounded up to the nearest 5' (five foot). For example a 5' diameter pipe at 7' deep shall have an easement width of $14'(2 \times 7') + 5'(\text{diameter of pipe}) + 2' = 21'$ specify a 25' water and sewer Easement.

STORM DRAINS AND CULVERTS

15" to	48" pipe:	20' perpetual	30' temporary
greater than	48" pipe	see below	

The minimum 20' (twenty foot) easement widths for the 15" to 48" storm drains and stormwater management pipes shall only apply for pipe at a depth of 5' (five foot or less). For larger size pipes and greater depths the minimum easement width shall be 2x depth + diameter of the pipe + 20' rounded up to the nearest 5' (five foot). For example a 5' diameter pipe at 7' deep shall have an easement width of $14'(2 \times 7') + 5'(\text{diameter of pipe}) + 2' = 21'$ specify a 25' Drainage Easement.

OPEN CHANNEL

20' (twenty foot) minimum width

Drainage Easements widths for open channels shall be a minimum of that specified above. The width of these easements shall increase to encompass the 100 (one hundred) year storm as necessary.

NOTE: If multiple pipes are located within the same easement the required width will be determined on a case by case basis.

PRIVATE SIGHT DISTANCE EASEMENT

The easement area is between the County right-of-way line and 2' outside the line of sight.

PUBLIC PEDESTRIAN TRAVEL WAY EASEMENT

The easement area is between the County right-of-way line and 2' outside the edge of pedestrian travel way.

O. BONDS

1. Bond amounts are set by the respective reviewers. When all applicable bond amounts have been set, they are forwarded to the Development & Bonding Specialist who then informs the Developer and/or Engineering Firm of the amounts and bonding procedures.
2. No DS Permits are issued without a bond approved by the Charles County Commissioners.
3. Bonding shall be as established in the latest version of the Charles County Zoning Ordinance or Subdivision Regulations.

P. ORDINANCES

1. All projects are to be designed and constructed in accordance with all applicable county ordinances. Following are ordinances/regulations which may be purchased at the Charles County Department of Planning and Growth Management, Permits Counter Charles County Government Building, La Plata, Maryland. Fees shall be based on the latest Charles County Fee Schedule (attached).
 - a. Road Ordinance
 - b. Grading Ordinance
 - c. Stormwater Management
 - d. Storm Drainage Ordinance
 - e. Floodplain Management Ordinance
 - f. Water and Sewer Ordinance
 - g. Subdivision Regulations
 - h. Forest Conservation Ordinance
 - i. Zoning Ordinance
 - j. Standard Details Manual
 - k. Standard and Specifications for Construction Manual

Q. REVIEWS

1. Upon review of the plans, comments are compiled and sent to the submitting licensed professional responsible for the design with a copy to the Developer.
2. All review comments are to be addressed prior to re-submission of plans.
3. All review comments shall be addressed individually in writing by the licensed professional responsible for the design and will accompany revised plans.
4. Revised plans are submitted to the PGM Permits Counter, Charles County Government Building, La Plata, Maryland for subsequent reviews.
5. All subsequent re-submissions and review will follow in accordance with the above procedures.
6. If requested by the submitting Engineering Firm, "marked-up" plans will accompany the review letter. The re-submittal of the revised plans and package MUST include the "marked-up" plans. Failure to return the "marked-up" plans will result in a return of the revised package to the submitting engineer as an "Incomplete re-submittal".
7. Time for review: It is anticipated that all initial submissions will be reviewed and returned in comment form to the submitting Engineering Firm within 3 (three) weeks of being placed on the review list. All subsequent reviews are anticipated to be returned within 2 (two) weeks of being placed on the review list. Charles County reserves the right to reject any package it feels is incomplete. Additional review time may be necessary due to incomplete submissions, workload or other circumstances. Abbreviated reviews may be sent to the engineer to meet internally imposed review deadlines. The County reserves the right to add or modify comments at any time during the review cycle.
8. Phasing and Sectioning: Phasing and sectioning of projects need to comply with the Zoning and Subdivision Ordinances. Cluster developments may be phased with sections as a subset to the phase. In all other developments each new plan shall be a new section. There are no subsets of the section. Post DS Permit phasing is not allowed without approval.
9. Two full set of plans, all studies, reports, forms, specifications will be required at the time of plan approval on separate compact discs (CD). Plans shall be in "TIFF" (or any other format dictated by the County). All Studies, Reports, Forms, and Specifications shall be in Portable Document Format (pdf) or any other format dictated by the County. Paper plan sets will be required two (2) weeks prior to the DS Permit issuance as follows:

- a. Grading, SWM and/or drainage only - four (4) paper plan sets are required
- b. Water and Sewer only - four (4) paper plan sets are required
- c. Road construction or entrance only - three (3) paper plan sets are required
- d. Any additional copies as required by the CPIS Division

All electronic files shall be named according to the following criteria:

For Construction Plans:

PGM number-Sheet Number-Sheet title.file extension
(i.e. 05-0055-7-Water Profiles.tif) for tiff files

For As-Built Plans:

PGM number-Sheet Number-Sheet title-ASB.file extension
(i.e. 05-0055-10-Water Profiles-ASB.tif) for tiff files

For Studies, Reports, Forms, and/or Specifications:

PGM number-report title.extension
(i.e. 05-0055-Stormwater Management Report.pdf)

All compact discs shall be provided in "Slim Line Jewel CD Case" and have a printed cd label with the following minimum information:

1. PGM Number (i.e. PGM# VR05-0105)
 2. Project Name
 3. Design Firm Name
 4. Construction Drawings or As-Built Drawings (as applicable)
 5. Date
10. Two compact discs (properly labeled as required) of Autocad layers provided in DWG format for the following:
- a. Water and sewer lines
 - b. Storm drainage (culverts, inlets, manholes, storm drains, etc.)
 - c. Stormwater management devices
 - d. Impervious areas (roads, buildings, parking areas, sidewalks, etc.)
 - e. Drainage areas to storm drainage structures
 - f. Drainage areas to the stormwater management devices
 - g. Floodplains
 - h. Conservation Easements Areas
 - i. Forest Conservation Easements Areas
 - j. Wetlands, resource protection zones or other environmental features
 - k. Any other information requested by the County
11. Revised Plans to issued permits: Revisions to issued permits will follow the same procedures as those established above. A letter shall be submitted with the plans describing the requested changes and providing reasons for the changes. Construction plan revisions will only be considered for changes to existing approved construction and will not apply to redevelopment of the existing site, expanding paving, expanding parking, expanding water and sewer, expanding stormwater management, expanding storm drainage, expanding grading operations, or expanding clearing operations unless such expansion is necessary to the operation of the original plans. Construction plan revisions shall not be used to expedite a review or circumvent changes to local, state or federal codes. Acceptance for processing the review shall be at the discretion of Charles County.

Only sheets with revisions shall be submitted for review. Revision clouds shall be placed around the changes on each plan. A revision number in a triangle shall be provided beside each revision cloud. A description of the revision shall be provided in the revision block.

Approved revisions must be issued within two weeks of the approval. Failure to "pick up" the approved revision could result in a voiding of the project and/or the issuance of "Stop Work Orders" if construction is undertaken within the limits of the revisions.

R. AS-BUILT PLAN REQUIREMENTS

1. Submittal/Approval

- a. One (1) set of blue-line progress prints of the as-built construction plans shall be submitted for water and sewer to the County prior to substantial inspections for water and sewer to include drainage, and roads for the purpose of obtaining an approval for the water and sewer substantial inspection. Applicable storm drainage, stormwater management, water and sewer and roads need to be completed prior to a request for substantial and/or a partial substantial. Only one partial substantial will be considered for a project.
- b. One (1) set of blue line check prints of the as-built construction plans shall be submitted for roads, storm drainage, grading and stormwater management prior to those pre-final inspections. Additionally, one (1) final set of water and sewer as-built will also be submitted at this time.
- c. If revision or additional information is required, the owner and the engineering firm will be notified in writing by CPIS. Responses to comments and the revised as-builts are to be resubmitted to the CPIS for review and/or approval. Written responses to technical review comments shall be prepared by and/or endorsed by the responsible professional and contain the signature, seal and any State required certification.
- d. Upon acceptance, the owner and the engineering firm will be notified and requested to submit one (1) complete set of plans on a compact disc (CD) in "tif" format and one (1) set of blue line prints for water and sewer and one (1) set of blue line prints for roads, drainage, grading and stormwater management with the as-built plans.

2. General Requirements for As-Built Plans:

- a. All data/information shall be on a copy of the approved construction drawings.
- b. Good drafting practices shall be exercised in the preparation of all drawings, as outlined in section II.C. of this package.
- c. All as-built information that differs from the original (including line, location, elevation, material, size, etc.) shall be boxed-in, and a line marked through the original information, not to conflict with other data. As-built information may be shown in tabular form if conflicts cannot be avoided.
- d. All as-built information that is identical to the original shall be indicated as such by placing a bold check mark adjacent to the original information, not to conflict with other data.
- e. The cover sheet shall be labeled "AS-BUILTS" in bold lettering on the lower right-hand and upper right-hand corner of the plans (see Appendix 7). All remaining sheets shall be labeled "Roads, Grading, Storm Drainage & Stormwater Management or Water & Sewer As-Builts" as appropriate. The cover sheet shall include an index of as-built sheets identifying the category.
- f. All approved construction sheets shall be included within the as-built drawings. Each sheet shall continue to reflect the construction sheet number, but also reflect the as-built sheet number.
- g. All drawings must be signed and sealed by a Maryland Registered Professional Engineer or Professional Land Surveyor as appropriate with the date and the words "As-Builts" written adjacent to the seal.
- h. The County may require additional information over and above that noted below for unique circumstances.

3. Minimum Requirements for Roads:

- a. The roads as-built plans shall show the following:
 - 1. Road stationing
 - 2. Pavement width.
 - 3. Sidewalk width.
 - 4. Guardrail endpoint stations and end types.
 - 5. Traffic Signals: Note field changes to poles, cabinet and handholes.
- b. Closed Section Roads (curb & gutter):
 - 1. As-built elevations shall be provided at the centerline of all PVC's, PVT's, PC's, PT's, other breaks in grades and at the PC or PT of fillets for all intersections with exact elevations for all roads and shall be shown on the profile view.
 - 2. Indicate front corners of USPS Cluster Box Units (CBUs) installed within right-of-way.
- c. Open Section Roads:
 - 1. As-built elevations shall be provided at the centerline of all PVC's, PVT's, PC's, PT's, other breaks in grades and at the PC or PT of fillets for all intersections with exact elevations for all roads and shall be shown on the profile view.
 - 2. As-built elevations shall be provided at 50' intervals at the center-line of the ditches (both sides) and shown on the plan view of the plan & profile sheets.

4. Minimum Requirements for Water and Sanitary Sewer:

- a. Provide at least two physical ties/measurements from approved above ground reference points to all valves, curb-boxes, cleanouts, manholes, vaults, meter and/or sewer crocks/pits, blow-offs, hydrants and any other water and/or sewer utility structure. Approved reference points are hydrants, sanitary sewer manholes, storm drain manholes/inlets, corners of buildings and corners of street curbs. If no approved reference points exist, submit a proposal to the County's Water and Sewer Engineer for alternative reference point approval.
- b. Plan view shall include all other utilities which come in contact within 10' of the public storm drains, water and/or sanitary sewer utilities or within the same easement. This may require Miss Utility or specific utility companies to locate all other utilities, incorporate information from the contractor or gathering of other information from the construction drawings prior to the survey crew making a site visit to gather as-built data.
- c. Elevation information shall be field verified and recorded onto the as-built drawings at each main line and hydrant valve for all water and/or sanitary sewer force mains. The as-built information shall include elevations of the top of all valve stem/rod extensions.
- d. As-built drawings shall also include contractor and all subcontractor names, addresses and phone numbers.
- e. For booster and pump stations, an accurate as-built shall be submitted which reflects all interior and yard piping, vaults, valves, pits/crocks, manholes/wet wells, building information, electrical information, grading/paving information, easements, fencing and any other additional information requested by the County.
- f. Reflect all new or relocated easements.

5. Minimum Requirements for Drainage, Stormwater Management, and Grading:

GRADING

As-Built Certifications shall be as found in Appendix 10
Minimum information:

- a. Sufficient spot shots to determine grades and slopes of all graded or constructed areas.

SWM/INFILTRATION FACILITIES

As-Built Certifications and As-Built Data Sheets shall be as found in Appendix 17

Minimum information for line and grade:

- a. Size and types of materials.
- b. Dimensions, location, and elevation.
- c. Size, material, and invert elevation of observation well.
- d. Pipe diameter, length, slope, material, and elevation.
- e. Structure type, size, material, and elevation.
- f. As-Built Data Sheets.

SWM/PONDS/BASINS

As-Built Certifications and As-Built Data Sheets shall be as found in Appendix 17

Minimum information for line and grade:

- a. A profile of the top of the dam.
- b. A profile along the centerline of the emergency spillway.
- c. A cross-section of the emergency spillway at the control section.
- d. Cross-section of the embankment at the principal spillway.
- e. Elevation of the principal spillway crest.
- f. The diameter, length, slope, invert (inlet and outlet), and type of material of the principal spillway conduit.
- g. Principal spillway structure footing size, elevation, and type of material.
- h. Size, type, and material of principal spillway structure.
- i. Elevation and size of weir opening of principal spillway structure.
- j. Size, elevation, and type of material of low flow orifice or drain pipe.
- k. Riser and base dimensions, elevations, and type of materials.
- l. The size, type, and elevation of anti-vortex and trash rack device.
- m. The number, size, and locations of the anti-seep collars.
- n. Core trench limits and elevation of bottom of cut off trench.
- o. Cross-section of pond indicating length, width, depth, and contours to verify the design volume.
- p. Cross-section of forebay indicating type, length, width, depth, elevation, and type of material.
- q. Cross-section of outfall protection indicating type, length, width, depth, elevation, and type of material.
- r. Statement on vegetation stabilization.
- s. Fencing details.
- t. As-Built Data Sheets.

SWM/OTHER

As-Built Certifications and As-Built Data Sheets shall be as found in Appendix 17
Any information as needed or as required by the County.

STORM DRAIN SYSTEM/CULVERTS

As-Built Certifications shall be as found in Appendix 10

Minimum information:

- a. Diameter, and class of all pipe.
- b. Invert elevations of pipes.
- c. Slope of pipe.
- d. Pipe lengths.
- e. Types of material.
- f. Location of all pipe and structures horizontally on the plan.
- g. Length, width and depth of all rip rap and other outfall protection as specified.
- h. Elevation of rip rap at outfall and at changes in grade.

- i. Top and bottom elevations of all inlets, manholes and junction boxes.
- j. Top and bottom elevation of any footings.
- k. Type of inlet or manhole with dimensions.
- l. Length of any throat opening.
- m. Dimensions of slots for slotted inlets.
- n. Location and line.
- o. Any other information required by PGM.

DITCHES

As-Built Certifications shall be as found in Appendix 10

Any information as needed or as required by the County.

S. BRIDGE INSPECTION REPORT AND CERTIFICATION

- 1. Information pertaining to the Federal Highway Administration Bridge Technology can accessed at www.fhwa.dot.gov/bridge.
- 2. Bridge Inspection Report - A bridge inspection report shall be required for all structures categorized as a "bridge" according to the definition contained in Section GP.1 of the Charles County Standards and Specifications for Construction Manual. The bridge report shall be signed by a Registered Professional Engineer currently licensed in Maryland and qualified to practice highway bridge inspections by the Federal Highway Administration through the Bridge Safety Inspection Evaluation course. This report shall, at a minimum, include the following:
 - a. Location map
 - b. Bridge sketches
 - c. Report summary
 - 1. Description
 - 2. Condition summary
 - 3. Scour potential rating
 - 4. Load ratings summary
 - 5. Inspection access note
 - 6. Repair recommendations and estimates
 - d. Color photographs
 - e. Structure inventory and appraisal (SI&A) report
 - f. Inspection report
 - g. Sounding sheet
 - h. Load rating calculations (H15, HS20, Maryland Legal Load Type 3, and Type 3S2)
- 2. Certification of Compliance - Certification shall be provided to the County Engineer that materials and installation were in compliance with the Contract Documents. This certification shall be made by a professional engineer currently licensed in Maryland and qualified to practice highway bridge inspections by the Federal Highway Administration through the Bridge Safety Inspection Evaluation course.

T. VOIDING DEVELOPMENT SERVICES PERMIT APPLICATIONS

- 1. A DS Permit application will be considered void if a response to the comments contained in the review letter has not been received within ninety (90) days of the date of the receipt of a written request if that request is received prior to the expiration date.

APPENDIX 1

DEVELOPMENT SERVICES PERMIT APPLICATION

Charles County Government
200 Baltimore Street * La Plata, MD 20646

Permit Number: _____ VSC Number: _____ VSS Number: _____ XPN/SDP Number: _____

DEVELOPMENT SERVICES PERMIT APPLICATION

PROJECT INFORMATION:

Project Name: _____ Section No.: _____ Phase No.: _____
 Commercial (VC) _____ Residential (VR) _____ Industrial (VI) _____ Blanket (VB) _____ Capital Improvement (VCI) _____
 Property ID(s): _____ Tax Map _____ Grid _____ Parcel(s) _____
 Project Address/Location (be specific): _____ ADC Map Coordinates: _____
 Post Office: _____ Election District: _____
 Intended Use: _____ Total Disturbed Area: _____

APPLICANT INFORMATION:

Applicant's Name: _____ Fax No.: _____ Phone No: _____
 Applicant's Address: _____
 Consultant's Name: _____ Fax No.: _____ Phone No: _____
 Consultant's Address: _____

FEE CALCULATION:

	Yes	No			
Grading:	___	___	Construction Cost Estimate	_____	Review Fee _____
SWM:	___	___	Construction Cost Estimate	_____	Review Fee _____
Storm Drainage:	___	___	Construction Cost Estimate	_____	Review Fee _____
Water:	___	___	Construction Cost Estimate	_____	
Sewer:	___	___	Construction Cost Estimate	_____	
Water House Conn	___	___	Subtotal:	_____	Review fee _____
Sewer House Conn	___	___			
County Roads:	___	___	Construction Cost Estimate	_____	Review Fee _____
SHA	___	___	N/A	_____	N/A _____
Entrance	___	___	Construction Cost Estimate	_____	Review Fee _____
Critical Area	___	___	N/A	___	N/A _____
Forest Conserv	___	___	N/A	___	N/A _____
			Total Const. Cost Estimate	_____	Total Fee _____

Make Checks Payable To: **Charles County Commissioners**

Telephone: (301) 645-0618 or 870-3935 x2618

- It shall be the duty of every DS Permit holder to give verbal or written notification to the County Inspector prior to start of construction and at least forty-eight (48) hours prior to the time when such site will be ready for inspections. Construction shall not cease for more than thirty (30) days.
- Execution of this application constitutes binding agreement between the applicant and Charles County, Maryland. The applicant will indemnify and save harmless Charles County from any work performed under this DS Permit.
- The DS Permit holder shall begin construction within six (6) months of the issued date and shall fully perform and complete all of the work within two (2) years of the date of the DS Permit. The DS Permit holder will perform no work on the above property not specifically described in this application. Any requests for extensions to the above time frames should be made in writing within thirty (30) days of the expiration and be addressed to the Chief of Codes, Permits & Inspection Services Division.
- I have carefully examined and read the entire application and know that the same is true and correct, and that, in doing this work, all provisions of Charles County Ordinances and state laws will be complied with, whether herein specified or not.

Applicant's signature _____

_____ Date

APPENDIX 2
STANDARD SYMBOLS

- COUNTY BOUNDARY
- PROP. LINES (OTHER THAN ST. OR LOT)
- STREET OR LOT LINES
- FENCES - (WOOD)
- CHAIN LINK (WIRE, BARB OR SMOOTH) (IRON)
- (HEDGE)
- (STONE, BRICK OR CONC.) & WALLS
- DIRT CURB, SLOPE INTERSECTIONS OR EARTH
- MARKINGS, DITCHES UNLESS HAVING AN APPRECIABLE WIDTH
- CURB & SIDEWALK LINES (EXCEPT EARTH)
- MISC. DRAINS, CULVERTS, ETC. EXISTING
- GAS MAINS
- GAS METER
- OVERHEAD - (POLES & TOWERS) (ELECTRIC)
- UNDER - (TELEPHONE)
- GROUND (TELEP. & TELEG. LINES) (BURIED CABLE)
- TREES
- EARTH, SAND, GRAVEL, SHELL, & BROKEN STONE ROAD.
- WATER, BOUND, OIL, MACADAM, CONC, BRICK, ETC. ROADS.
- COMBINATION ROADS
- RAILROADS

- MARSH
- SIGN POST
- EXCAVATION OR CUT
- EMBANKMENT OR FILL
- SINK HOLES, POTHOLE, ETC.
- PROP. & BOUNDARY STONE
- TRIANG STA. U.S.
- CONTROL STA. W.S.S.C.
- STAKE WITH TACK CENTER
- STAKE WITHOUT TACK CENTER
- IRON PIPE WITH CENTER
- IRON PIPE
- BENCH MARK
- NAIL, SPIKE OR IRON ROD
- DESCRIBED TURNING POINT
- VITRIFIED CLAY PIPE-STANDARD STRENGTH
- VITRIFIED CLAY PIPE-EXTRA STRENGTH
- CAST IRON PIPE
- WROUGHT IRON PIPE
- CORRUGATED METAL PIPE
- CONCRETE SEWER PIPE-EXTRA STRENGTH
- REINFORCED CONCRETE PIPE CLASS I, II, III & ETC.
- ASBESTOS CEMENT PIPE
- POLYVINYL CHLORIDE
- TERRA COTTA
- EXCAVATION
- FIRST FLOOR
- FOOTING
- CELLAR
- RIGHT-OF-WAY

EXISTING WORK

- (EX.)
- EXISTING SEWERS
- STORM WATER DRAINS
- SEWER TERMINAL M.H.
- RECTANGULAR M.H. INLETS
- MANHOLES (SEWER)
- MANHOLES (S.D.)
- LAMPHOLES
- WATER MAINS
- MANHOLES (WATER)
- VALVES
- VALVES (AIR)
- TEES
- CROSSES
- REDUCER
- BENDS
- BLOWS-OFFS
- FIRE HYDRANTS
- METER BOXES
- PART OF WATER SYSTEM-ELEVATED TANK
- STAND PIPE
- CROWN INVERT

PROPOSED WORK

- SEWERS (S)
- STORM WATER DRAINS (SD)
- MANHOLES (M.H.)
- CONNECTION (M.H.)
- SEWER LAMPHOLES
- Y BRANCH (Y BR.)
- HOUSE CONNECTION (H.C.)
- DROP HOUSE CONNECTION (D.H.C.)
- WATER MAINS (W)
- VALVES (V)
- VALVES (AIR)
- TEES (T)
- CROSSES (C)
- REDUCER (R)
- BENDS (B)
- FIRE HYDRANTS (F.H.)
- BLOWS-OFFS
- HOUSE SERVICE & METER BOX
- WATER HOUSE CONNECTION
- TAPPING SLEEVE & VALVE-C.I.P. (T.S. & V)
- TAPPING ASSEMBLY & VALVE-CONC. (T.A. & V.)
- PLUG (P.)
- TOP OF FROST CASE (T.F.C.)
- DUCTILE IRON PIPE

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING & GROWTH MANAGEMENT

APPROVED: _____
DIRECTOR OF DEVELOPMENT SERVICES DATE

WATER / SEWER ENGINEER DATE

STANDARD DETAIL
CONVENTIONAL SIGNS

REVISIONS:

M
1.00

APPENDIX 3

STORMWATER MANAGEMENT SUMMARY SHEET

Structural Practices

- P-1 micropool extended detention pond (Figure 3.1)
- P-2 wet pond (Figure 3.2)
- P-3 wet extended detention pond (Figure 3.3)
- P-4 multiple pond system (Figure 3.4)
- P-5 pocket pond
- W-1 shallow wetland (Figure 3.6)
- W-2 ED shallow wetland (Figure 3.7)
- W-3 pond/wetland system (Figure 3.8)
- W-4 pocket wetland (Figure 3.9)
- I-1 infiltration trench (Figure 3.10)
- I-2 infiltration basin (Figure 3.11)
- A-1. Green Roofs
- A-2. Permeable Pavements
- A-3. Reinforced Turf

Nonstructural Practices include:

- N-1. Disconnection of Rooftop Runoff
- N-2. Disconnection of Non-Rooftop Runoff
- N-3. Sheetflow to Conservation Areas

Supplement 1

Micro-scale practice variants include:

- M-1. Rainwater Harvesting
- M-2. Submerged Gravel Wetlands
- M-3. Landscape Infiltration
- M-4. Infiltration Berms
- M-5. Dry Wells
- M-6. Micro-Bioretenion
- M-7. Rain Gardens
- M-8. Swales
- M-9. Enhanced Filters

CAREFULLY READ THE FOLLOWING

1. This form must be completed by the professional responsible for the design.
2. Waivers shall be supported by calculations.
3. All waivers or exemptions should reference ordinance section.
4. Forms shall be completed for each facility and/or design point.

ADDITIONAL INSTRUCTIONS

1. Use the Maryland Grid Coordinates based on the 1927 Datum. If the 1983 Datum is used then note this fact on the forms and the plans.
2. Locate the structure/facility in the latest version of the ADC map for Charles County. The coordinates should be written as map number, column and row. For example 04A03.
3. The State Watershed Designations are found in the Appendices.
4. The Maryland Office of Planning Land use Codes can be found in the appendices.

Provide any additional information here:

The person completing this form shall provide the following	
name:	title:
signature:	date:
license number:	phone:
seal:	for office use only:

APPENDIX 4

INITIAL SUBMISSION CHECKLIST

Charles County Government
 Department of Planning & Growth Management
 Codes, Permits & Inspection Services Division
INITIAL SUBMISSION CHECKLIST

Project Name:			
Location:			
tax map:	grid:	parcels:	
applicant name:		phone:	fax:
consultant name:		phone:	fax:
number of lots if residential		ADC Map No.	

	Items	Applicant	County Use
1.	Transmittal Sheet from Engineer listing submittal items		
2.	Four (4) sets of sealed and signed project plans (five (5) if pump station, water tower or well house)		
3.	Three (3) sets of separate pump station computations, studies and reports for pump stations, water tower or well house		
4.	Three (3) sets of separate drainage computations, studies and reports		
5.	Three (3) sets of separate swm computations, studies and reports		
6.	Forest Conservation Plans		
7.	Four (4) sets of Construction Cost Estimates (see note b.)		
8.	Completed Development Services Permit Application		
9.	Copy of SWM Administrative Waiver		
10.	Preliminary Plan or Site Plan Approval Number		
11.	Soil Conservation Approval Number		
12.	Review Fees (based on the latest Charles County Fees and Charges Schedule)		
13.	Asset Summary Reports (ASRS)		
14.	County Roads Inventory Report (CRIR)		

- Notes:
- a. Enter the following: X= included, NA=not applicable, O=outstanding (with explanation)
 - b. Construction cost estimates shall be based on the latest Charles County Unit Prices for Security Amounts and Review Fees.
 - c. CDs with copies of the approved plans will be required at the time of plan approval.
 - d. Prior to issuance of the DS Permit additional sets of construction drawings are required or as indicated in the Plan Preparation Package (section II.Q.9.).
 - e. Additional information may be requested by Charles County.

Printed Name	Signature	date signed
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APPENDIX 5

APPROVAL/REVISION BLOCKS

Approval Block for Major Construction Projects
(Must be at least 6" x 6")

Charles County Approvals					Remarks or Conditions
Grading		Construction		as-builts	
Roads		Construction		as-builts	
Storm Drainage		Construction		as-builts	
Stormwater Management		Construction		as-builts	
Water		Construction		as-builts	
Sewer		Construction		as-builts	
Other		Construction		as-builts	This Permit Expires on:
		date:			date:

Approval Block for Minor Construction Projects
(Must be 2½" x 2½")

Charles County Approval	
PERMIT NO.	
signed	
date	
expires on	
remarks or conditions:	

Revision Block
(Must be 2" x 6")

Revision Number	Construction Revision	Revision Date
1		
2		

APPENDIX 6

TELEPHONE NUMBERS FOR KEY PERSONNEL

FREQUENTLY REQUESTED TELEPHONE NUMBERS

Charles County Government Department of Planning & Growth Management		
ADMINISTRATION		
Director	Deborah A. Carpenter, AICP	301-645-0693
Codes, Permits & Inspection Services Division (Permitting and Inspections)		
Chief	Raymond N. Shumaker	301-396-5842
Assistant to the Chief	Gina Markovich	301-638-0806
Program Manager	Hamendra K. Mathur	301-645-0623
Dev. Services Permit Specialist	Mary “Virginia” Cooper	301-645-0618
Drainage, Grading, SWM & Floodplains	Randy Crowder, P.E.	301-885-1305
Roads	Donna Daugherty, P.E.	301-645-0596
Water & Sewer	Mehari M. Abera	301-645-0719
Site Plan Review for Building Permits	Jamila Gallman	301-638-0406
Right of Way & Bonding Specialist	Audrey Marshall	301-645-0634
Inspections		
Inspections Superintendent	Paul Zielinski	301-645-0519
Planning Division		
Director	Jason Groth	301-396-5814
Public Works Department		
Director	Bill Shreve	301-609-5601
Outside Agencies		
Charles Soil Conservation District	Luis Diegueiz	301-934-9588
Maryland Department of the Environment		1-800-633-6101

APPENDIX 7

PGM NUMBER/TITLE BLOCK PLACEMENT

PGM Number Placement – Construction Plans

PGM# VC03-0171	<h1>FRONT</h1>	PGM# VC03-0171	Project Name	Revision Block	Title Block
				PGM# VC03-0171	

PGM Number Placement – As-Built Plans

AS-BUILTS PGM#VC03-0171	<h1>FRONT</h1>	AS-BUILTS PGM#VC03-0171	Project Name	Revision Block	Title Block
				AS-BUILTS PGM#VC03-0171	

APPENDIX 8

MARYLAND OFFICE OF PLANNING LANDUSE CODES

Maryland Office of Planning Land Use Codes

CATEGORY		SUBCATEGORY	
10	URBAN BUILD-UP	11	LOW DENSITY RESIDENTIAL (0.2-2 DU/AC)
		12	MEDIUM DENSITY RESIDENTIAL (>2-8 DU/AC)
		13	HIGH DENSITY (>8 DU/AC)
		14	COMMERCIAL
		15	INDUSTRIAL
		16	INSTITUTIONAL
		17	EXTRACTIVE
		18	OPEN URBAN LAND
		191	LARGE LOT SUBDIVISION (AGRICULTURAL)
		192	LARGE LOT SUBDIVISION (FOREST)
20	AGRICULTURE	21	CROP LAND
		22	PASTURE
		23	ORCHARDS
		24	FEEDING OPERATIONS
		241	FEEDING OPERATIONS
		242	AGRICULTURAL FACILITIES
		25	ROW AND GARDEN CROPS
40	FOREST	41	DECIDUOUS FOREST
		42	EVERGREEN
		43	MIXED FOREST
		44	BRUSH
50	WATER		
60	WETLANDS		
70	BARREN LAND	71	BEACHES
		72	BARE EXPOSED ROCK
		73	BARE GROUND

APPENDIX 9

STATE WATERSHED DESIGNATIONS

State Watershed Designations
Stormwater Management
(Charles County)

Designation	Watershed
02131101	Patuxent River Lower
02140106	Wicomico River
02140107	Gilbert Swamp
02140108	Zekiah Swamp
02140109	Port Tobacco River
02140110	Nanjemoy Creek
02140111	Mattawoman Creek
02140101	Potomac River Lower Tidal (from south edge of Pomonkey Creek watershed to Cobb Island)
02140102	Potomac River Middle Tidal (northwest county line south to and including Pomonkey Creek watershed)

APPENDIX 10

CERTIFICATIONS

Certifications

OWNER'S/DEVELOPER'S CERTIFICATION

I/We hereby certify that all construction including and not limited drainage, grading, stormwater management, roads, and water & sewer will be done pursuant to this plan, all local, state and federal codes and requirements, Charles County Standards and Specifications for Construction Manual, Charles County Details, approved site and/or preliminary plans, other PGM ordinances & regulations and any other requirements imposed by Charles County. I/We hereby authorize a right-of-entry to any Charles County, local, state or federal personnel for the purpose of inspection evaluation, or observation of any construction activity related to the project.

Signed _____ Date _____

Title _____

LICENSED PROFESSIONAL'S CERTIFICATION STATEMENT

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, other PGM ordinances and regulations and any conditions imposed by Charles County.

_____ Date: _____

Maryland Registered Professional Engineer
Maryland Registered Professional Land Surveyor

License Number _____

STORMWATER CONVEYANCE SYSTEM (PIPES/ CULVERTS, DITCHES)
AS-BUILT” CERTIFICATION

I hereby certify that the stormwater conveyance system (systems) shown on the plans and individually identified below has (have) been constructed in accordance with the plans issued by Charles County, PGM Number# V _____ except as noted in red on the “AS BUILT” drawings. If required by Charles County the engineer or the engineer of record has and/or will certify that the red-noted exceptions do not adversely affect the intended performance of the system (systems).

System Identification (Identify Each System Individually)

Printed Name	Signature
Maryland Registration Number	Date

“Certify” means to state or declare a professional opinion based on sufficient and appropriate onsite measurements, observations and inspections.

STORMWATER MANAGEMENT FACILITY

I hereby certify that the stormwater management facility (facilities) shown on the plans and individually identified below has (have) been constructed in accordance with the plans issued under the Charles County PGM Number# V _____ except as noted in red on the “AS BUILT” drawings. If required by Charles County the licensed professional or the licensed professional of record has and/or will certify that the red-noted exceptions do not adversely affect the intended performance of the facility (facilities).

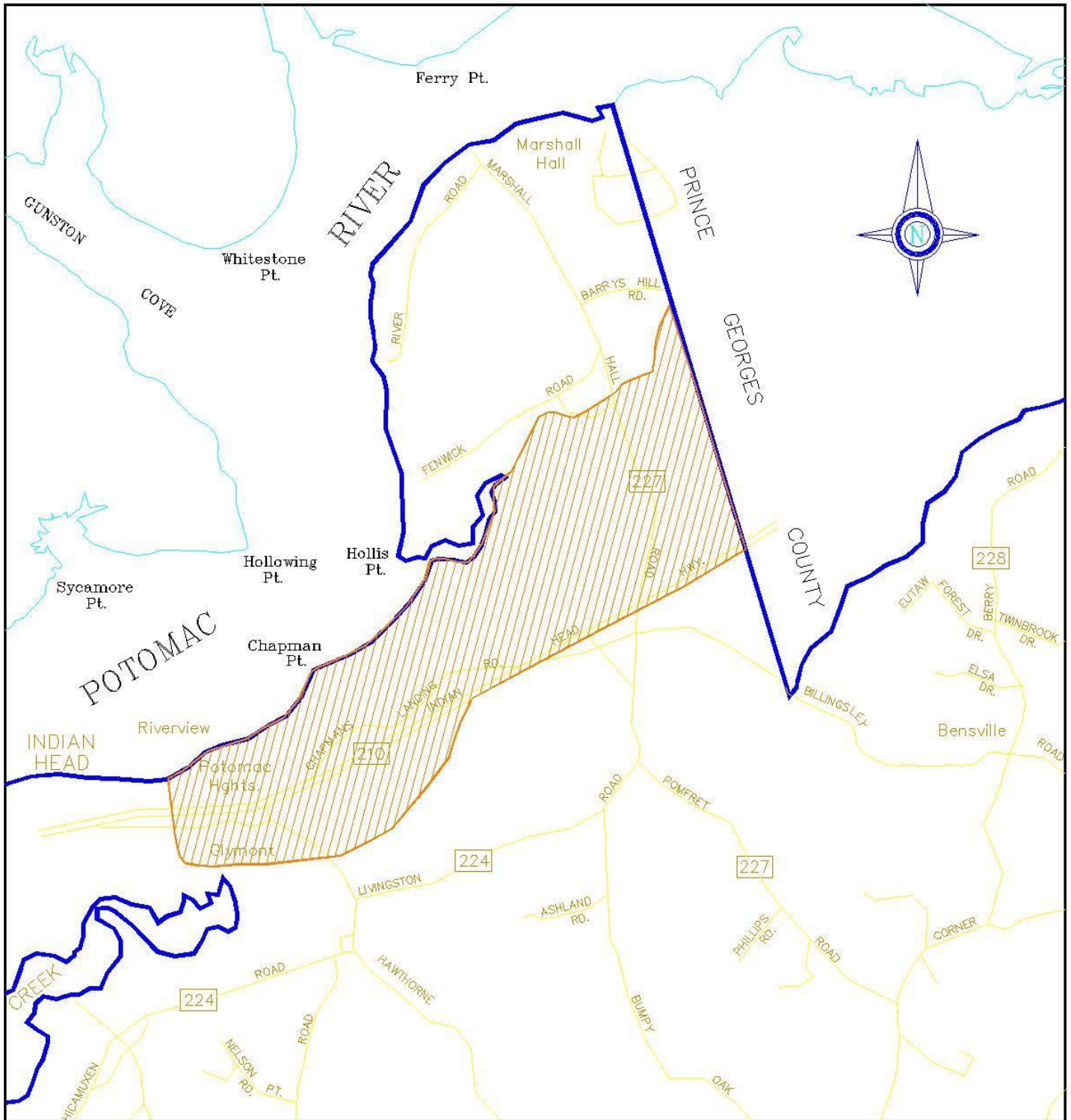
System Identification (Identify Each Facility Individually)

Printed Name	Signature
Maryland Registration Number	Date

“Certify” means to state or declare a professional opinion based on sufficient review, evaluation and/or inspections.

APPENDIX 11

AREA OF SPECIAL GEOTECHNICAL CONSIDERATIONS



AREA OF SPECIAL
GEOTECHNICAL CONCERNS

CHARLES COUNTY, MARYLAND

APPENDIX 12

ASSET SUMMARY REPORTS

Charles County, Maryland

Codes, Permits & Inspection Services Division



Asset Summary Reports Public Improvements Instructions

1. Asset summary reports shall be provided for all “public” improvements for both County and private developments.
2. Separate Asset Summary Reports (ASRS) shall be provided for each category:
 - A. Drainage
 - B. Pump Stations
 - C. Roads
 - D. Sewer
 - E. Stormwater Management
 - F. Water
 - G. Water Storage Facilities
 - H. Miscellaneous
3. All public improvements shall be summarized in the appropriate category. Those not fitting in a particular category shall be listed on a “Miscellaneous Asset Summary Report”.
4. The values for all public improvements shall be those found in the latest “Unit Prices for Development Agreement Security Amounts and Plan Review Fees” (Unit Prices).
5. All items not listed in the Unit Prices should be estimated based on current market values. The following list of items not found in the Unit Prices should be included on the ASRS. This list is not necessarily inclusive of all items not found in the Unit Prices.
 - A. Hiker/Biker Paths (within County right-of-ways)
 - B. Bridges (include length, width and type)
 - C. All improvements in “public easements”
6. The ASRS will be required with the initial submittal of the project. The reports shall be updated by the applicant’s engineer if the scope of the project changes during the project review cycle.
7. For roadways the asset summary should include the widths and total lengths of all various road sections and pavement widening for existing roads. However, the values shall be based upon the volume quantities of the full depth pavement sections. Description shall include type of road surface.
8. Traffic signals must include intersection names and type of traffic lights (i.e. hung- wire, poles, etc.).
9. After the completion of all the infrastructure improvements, the ASRS shall be verified and updated by the applicant’s engineer if necessary. Final ASRS must be submitted with the approved as-builts.

Asset Summary Report

Page # _____

PGM# _____

<i>LENGTH/QUANTITY</i>	<i>SIZE</i>	<i>DESCRIPTION</i>	<i>VALUE</i>
<i>TOTAL:</i>			\$

Note: Include all public structures such as culverts, storm drain pipes, water and sewer facilities, stormwater management facilities lengths and widths of roads, etc.

Charles County Government

Codes, Permits & Inspection Services Division



Asset Summary Report

Public Pump Station

(See instructions -Form ASRINS06)

<u>for office use only</u> do not complete this section		<u>for office use only</u> do not complete this section	
TO:	Accounting, Utilities	Date:	_____
SUBJECT:	ASSET SUMMARY REPORT	By:	_____
FROM:	PGM# _____ Codes, Permits & Inspection Services Division		
Project:		Tax Map:	
Applicant:		Parcel(s) No:	
Applicant address:		applicant tel. no:	
Engineer:		engineer tel. no:	
Engineer address:		date:	
DESCRIPTION		VALUE	
TOTAL:		\$	
<i>Notes</i>			

<i>DESCRIPTION</i>	<i>LENGTH AND/OR QUANTITY¹</i>	<i>SIZE¹</i>	<i>VALUE</i>
TOTAL:			\$

1. For road quantities please provide the length of road for each appropriate width of road section.
 2. Use extra sheets as necessary

Charles County Government

Codes, Permits & Inspection Services Division



Asset Summary Report Public Water Storage Facilities (See instructions -Form ASRINS06)

<p style="text-align: center;"><u>for office use only</u> do not complete this section</p> <p>TO: Accounting, Utilities SUBJECT: ASSET SUMMARY REPORT PGM# _____ FROM: Codes, Permits & Inspection Services Division</p>	<p style="text-align: center;"><u>for office use only</u> do not complete this section</p> <p>Date: _____ By: _____</p>
Project:	Tax Map:
Applicant:	Parcel(s) No:
Applicant address:	applicant tel. no.:
Engineer:	engineer tel. no.:
Engineer address:	date:
<i>DESCRIPTION</i>	<i>VALUE</i>
TOTAL:	\$
<i>Notes</i>	

APPENDIX 13
EASEMENTS & AGREEMENTS

INSPECTION AND MAINTENANCE
OF PRIVATE ON-SITE STORMWATER MANAGEMENT FACILITY AGREEMENT
DECLARATION OF COVENANTS

This Declaration and Agreement made this _____ day of _____, 20__, by and between _____, hereinafter referred to as the "Covenantor(s)", owner(s) of the property located at:

hereinafter referred to as the "subject property", and the County Commissioners of Charles County, Maryland, a public body corporate and politic, organized under the laws of the State of Maryland, hereinafter referred to as the "County":

WITNESSETH:

WHEREAS, the Covenantor(s) desire(s) to develop or redevelop all or portions of the subject property; and

WHEREAS, prior to said developing or redeveloping, the Covenantor(s) is/are required by the Charles County Stormwater Management Ordinance to provide for certain stormwater management and to obtain a Development Services Permit, hereinafter alternatively referred to as "Permit"; and

WHEREAS, the Covenantor(s) has/have applied for permit for land disturbing activity at the subject property and desire(s) to utilize a privately owned and operated stormwater management facility located on the subject property (alternatively referred to hereinafter as the "on-site facility" or the "facility"); and

WHEREAS, the Charles County Stormwater Management Ordinance requires that as a condition of the issuance of a Permit for development or redevelopment of properties to be served by a privately owned and operated stormwater management facility, an inspection and maintenance agreement be executed by the applicant(s) for a Permit prior to release of bonds covering stormwater management; and

WHEREAS, Covenantor(s) has/have full authority to execute this Declaration and Agreement so as to bind the subject property and all its current and future owners, successors and assigns.

NOW, THEREFORE, in consideration of the issuance by the County of Development Services Permit No. _____, and in accordance with the requirements of the Charles County Stormwater Management Ordinance, the Covenantor(s) does/do hereby covenant and agree(s) as follows:

1. The Covenantor(s) shall construct and/or provide for the maintenance of the on-site facility to insure that said facility is and remains in proper working condition in accordance with approved design standards and with applicable laws, rules and regulations. If necessary, the Covenantor(s) shall levy regular or special assessments against any and all present or subsequent owners of other property served by the facility to insure that the facility is properly maintained.
2. The County shall inspect the facility. If, after reasonable notice by the County, the Covenantor(s) shall fail to construct, repair, maintain or operate the facility within a reasonable period of time (30 days maximum) in accordance with the approved design standards and with the law and all applicable rules and regulations, the County is obligated to enter onto the facility and perform all necessary construction, repair, maintenance and operating work, and may assess the Covenantor(s) for the cost of said work. Said

assessment shall be a lien against the subject property and may be placed on the property tax bill of said property and collected as ordinary taxes by the County. The County at its option may use any other measure approved by the Board of Commissioners to collect the cost of the repairs to include any associated administrative costs. If property other than the subject property is also served by the facility and is the subject of a similar Inspections and Maintenance Agreement with the County, the owner(s) of all such properties shall be jointly and severally liable for the cost of any and all work performed by the County pursuant to this paragraph, and all said properties are jointly and severally subject to the imposition of liens pursuant to the provisions of this paragraph.

3. The Covenantor(s) does/do hereby grant and shall continue to grant the County, its successors, agents and contractor(s) the right of entry to the facility for the purpose of inspecting, and, if necessary, operating, installing, constructing, reconstructing, maintaining, or repairing the facility, and shall provide and maintain perpetual access from public rights-of-way to the facility for the County its successors, agent(s) and contractor(s) for said purposes. The Covenantor(s) shall also grant to the County easements and rights-of-way necessary for the foregoing purposes.

4. The Grantor acknowledges that the County may exercise its emergency authority provided for by Law.

5. The Covenantor(s) shall indemnify and save the County harmless from any and all claims for damages to persons or property arising from the installation, construction, failure, reconstruction, maintenance, repair, operation and use of the facility.

6. The Covenantor(s) shall notify the County of the legal and/or equitable transfer of any of the Covenantor(s) responsibilities for the facility within thirty (30) days of such transfer and shall supply the County with a copy of any documents of transfer, executed by both parties.

7. This Declaration of Covenants and Agreement in no way relieves the Covenantor(s) of responsibility for providing stormwater drainage, in addition to the on-site stormwater management facility, as it may be deemed necessary by the County or other appropriate agency.

8. This Agreement and the covenants contained herein shall run with the land and shall bind the Covenantor(s) and the Covenantor(s) heirs, executors, administrators, successors and assigns, and shall bind all present and subsequent owners of the subject property.

9. The Covenantor(s) shall record this Declaration and Agreement in the Land Records of Charles County, Maryland and shall provide the County with documentary proof of that recordation within ten (10) days of said recordation.

IN WITNESS WHEREOF, the Covenantor(s) have executed this Declaration of Covenants and Agreement as of this _____day of _____, 20__.

WITNESS DATE SEAL

WITNESS DATE SEAL

PRIVATE SLOPE EASEMENT
PRIVATE DRAINAGE EASEMENT
PRIVATE STORMWATER MANAGEMENT EASEMENT
INSPECTION AND MAINTENANCE AGREEMENT

This agreement is made this _____ day of _____, 20____, by and Between _____(Grantor), and the County Commissioners of Charles County, Maryland, a body corporate and politic, (County).

Witnesseth, that in consideration of the sum of one dollar (\$10.00), the receipt of which is hereby acknowledged, the Grantor does hereby grant and convey to County a perpetual easement to inspect (and operate or maintain as necessary only as described herein) a private slope consisting of a fill slope for public roads, private stormwater conveyance system consisting of ditches, swales, channels, culverts, storm drains and other appurtenant facilities for the purpose of depositing water within the boundary of the permanent easement(s) and/or private stormwater management facilities, consisting of ponds, basins, trenches, drywells, buffers, separators, shallow marshes, ditches, filters or any other approved stormwater device and/or other approved appurtenant facilities for the purpose of providing quantity and/or quality stormwater management within the easement(s) as more particularly described and indicated as

in the subdivision _____
as shown on a plat recorded among the land records of Charles County, Maryland in plat book _____,
page(s)_____.

And the Grantor covenants and agrees with the County as follows: **First:** All public road fill slopes, drainage improvements, all stormwater management facilities or devices, all access drives and appurtenant facilities which will be installed in the easement(s) shall remain the property of Grantor. **Second:** At no time shall Grantor charge the County for the use of the property occupied by the County or for the privilege of exercising the rights granted under this agreement. **Third:** County, its agents, and employees shall have the right of access from a public road to the easement(s) over the property of Grantor. **Fourth:** County shall have such rights and privileges as may be reasonable for the full enjoyment or use of the easement(s) herein granted. **Fifth:** Grantor reserves the right to make use of the easement(s) herein granted in a manner which is not inconsistent with the rights herein conveyed, or which does not interfere with the use of the easement(s) by County for the purposes of this agreement. However, Grantor shall not erect any building, fence or other structure on the easement(s) without obtaining the prior written approval of the County.

Grantor further covenants and agrees that it shall be responsible for and agrees to perform the necessary maintenance to repair fill slopes, to perform the necessary maintenance to allow the proper and efficient flow of water through the system within the easement(s) and to perform the necessary maintenance to allow access and proper operation of the stormwater management facilities and/or devices within the easement(s). Should Grantor fail to construct, repair or maintain the fill slope, system, stormwater management facility or device, or should the system within the easement(s) become blocked so that the water will not flow in an efficient manner, or the access become impassable or the stormwater management facility or device fail to function as designed, or the fill slope fail, the Grantor shall make necessary repairs or maintenance to allow the proper and efficient flow of water, or to allow access to the stormwater management facility, or to allow the stormwater management facility or device to function as designed, or repair any slope failures associated with the fill slope. If, after reasonable notice by the

County, the Grantor shall fail to construct, repair, maintain or operate the stormwater management facility or device within a reasonable period of time in accordance with the approved design standards and with the law and all applicable rules and regulations, the County is obligated to enter onto the facility or device and perform all necessary construction, repair, maintenance and operating work, and may assess the Grantor for the cost of said work. The assessment shall be a lien against all property subject to and benefitted by the systems, stormwater management devices and/or facilities described in this agreement. Such costs shall be assessed, levied, collected and enforced as County real estate taxes are now, or may hereafter be, by law levied and collected, and shall have the same priority rights, bear the same interest and penalties, constitute a lien upon the real property so assessed, be placed upon the property tax bill and in every respect be treated the same as County real estate taxes. Such costs shall also be personal obligations of the owners of the property at the time the costs are incurred, and may be collected accordingly.

Grantor warrants that it is seized of the property subject to the easement(s) and has the right to convey the easement(s); that there are no encumbrances; that County shall have quiet enjoyment; and that Grantor shall execute such further assurances as may be required.

This agreement and the covenants contained herein shall run with the land and shall bind the Grantor and the Grantor's heirs, executors, administrators, successors and assigns, and shall bind all present and subsequent owners of the subject property.

Lienholders join herein for the purpose of releasing any deeds of trust, mortgages or other liens as to the easement(s). The liens as to the remainder of the property will not be affected. The parties, date of instrument, and recordation information for the instrument being partially released are as follows:

Witness our hands and seals:

ATTEST:

GRANTOR:

_____ (Seal)

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the state and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial seal.

Notary Public

My commission expires: _____

LIENHOLDER:

Witness: _____ (Seal)

Witness: _____ (Seal)

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the state and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial seal.

Notary Public

My commission expires: _____

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the state and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

APPROVED FOR ACCEPTANCE:

APPROVED AS TO LEGAL SUFFICIENCY:

Director
Planning and Growth Management

County Attorney

ATTEST:

COUNTY COMMISSIONERS
OF CHARLES COUNTY, MARYLAND

Clerk

President

PUBLIC SLOPE EASEMENT
PUBLIC DRAINAGE EASEMENT
PUBLIC STORMWATER MANAGEMENT EASEMENT

This agreement is made this _____ day of _____, 20____, by and between _____ (Grantor), and the County Commissioners of Charles County, Maryland, a body corporate and politic, (County).

Witnesseth, that in consideration of the sum of one dollar (\$10.00), the receipt of which is hereby acknowledged, the Grantor does hereby grant and convey to the County a perpetual easement to inspect, operate and maintain a public slope consisting of fill slopes for public roads, and/or stormwater conveyance system consisting of ditches, swales, channels, culverts, storm drains and other appurtenant facilities for the purpose of depositing water within the boundary of the permanent easement(s) and/or public stormwater management facilities, consisting of ponds, basins, trenches, drywells, buffers, separators, shallow marshes, ditches, filters or any other approved stormwater management device and/or appurtenant facilities for the purpose of providing quantity and/or quality stormwater management within the easement(s).or more particularly described and indicated as

in the Subdivision _____ as shown on a plat recorded among the land records of Charles County, Maryland in plat book _____, page(s) _____.

And the Grantor covenants and agrees with the County as follows: **First:** All drainage improvements, all stormwater management facilities, all access drives, all public road fill slopes and appurtenant facilities which will be installed in the easement(s) shall remain the property of Grantor. **Second:** At no time shall Grantor charge County for the use of the property occupied by County or for the privilege of exercising the rights granted under this agreement. **Third:** County, its agents, and employees shall have the right of access from a public road to the easement(s) over the property of Grantor. **Fourth:** County shall have such rights and privileges as may be reasonable for the full enjoyment or use of the easement(s) herein granted. **Fifth:** Grantor reserves the right to make use of the easement(s) herein granted in a manner which is not inconsistent with the rights herein conveyed, or which does not interfere with the use of the easement(s) by County for the purposes of this agreement. However, Grantor shall not make or erect any improvements whatsoever, including buildings, fences or other structures on the easement(s) without obtaining the prior written approval of County. **Sixth:** After final approval of construction of the systems facilities or devices, County agrees to perform the necessary maintenance of all public road fill slopes, to perform the necessary maintenance of the stormwater conveyance systems to allow the proper and efficient flow of water through the system, the necessary maintenance of the stormwater management facilities or devices to assure that such facilities or devices function as designed within the easement.

Grantor warrants that it is seized of the property subject to the easements(s) and has the right to convey the easement(s); that there are no encumbrances; that County shall have quiet enjoyment; and that Grantor shall execute such further assurances as may be required.

This agreement and the covenants contained herein shall run with the land and shall bind the Grantor and the Grantor's heirs, executors, administrators, successors and assigns, and shall bind all present and subsequent owners of the subject property.

Lienholders join herein for the purpose of releasing any deeds of trust, mortgages or other liens as to the easement(s). The liens as to the remainder of the property will not be affected. The parties, date of instrument, and recordation information for the instrument being partially released are as follows:

Witness our hands and seals:

ATTEST:

GRANTOR:

_____ (seal)

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial seal.

Notary Public

My commission expires: _____

LIENHOLDER:

Witness: _____ (seal)

Witness: _____ (seal)

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the state and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

State of Maryland, Charles County, to wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the subscriber, a notary public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

APPROVED FOR ACCEPTANCE:

APPROVED AS TO LEGAL SUFFICIENCY:

Director
Planning and Growth Management

County Attorney

ATTEST:

County Commissioners of Charles County, Maryland

Clerk

President

PRIVATE STORMWATER MANAGEMENT NATURAL AREA CONSERVATION EASEMENT
INSPECTION AND MAINTENANCE COVENANTS AND AGREEMENT

This Stormwater Management Conservation Area Easement Inspection and Maintenance Agreement is made this ____ day of _____, 20____, by and between _____, hereinafter referred to as the "Grantor", owner(s) of the property located at:

hereinafter referred to as the "Subject Property", and the County Commissioners of Charles County, Maryland, a public body corporate and politic, organized under the laws of the State of Maryland, hereinafter referred to as the "County":

WITNESSETH:

WHEREAS, Grantor is the sole owner in fee simple of certain real property in Charles County, Maryland, more particularly described in Exhibit A attached hereto (Subject Property); and

WHEREAS, Grantor desires to establish the Subject Property as a Stormwater Management Natural Area Conservation Easement to conserve and protect the natural area thereby retaining the pre development hydrologic characteristics in order to manage the quality of stormwater runoff draining to the area;

WHEREAS, Grantor desires this Stormwater Management Natural Area Conservation Easement to run with the Subject Property in perpetuity and bind future owners thereof;

WHEREAS, Grantor desires and intends to convey to the County the right to preserve and protect the natural, forestry, environmental, rural, woodland, wetland, hydrologic, stormwater management values of the Subject Property in perpetuity.

NOW, THEREFORE, in consideration of the above recitals and mutual covenants, terms, conditions, and restrictions contained herein, Grantor hereby grants and conveys to the County a Stormwater Management Natural Area Conservation Easement in perpetuity over the Subject Property, of the nature and character to the extent set forth ("Easement").

1. The Grantor, their successors, heirs and assigns, covenant and agree to preserve the Subject property in its natural state and agree to protect the natural, forestry, environmental, rural, woodland, wetland, hydrologic, stormwater management values of the Subject Property, thus providing for all required maintenance and protection of the Subject Property, in perpetuity.
2. It is the objective and over-riding concern of the Grantor and the County to allow the Subject Property to remain in its natural state, thereby protecting the natural, forestry, environmental, rural, woodland, wetland, hydrologic, stormwater management values of the Subject Property. Removal, destruction and harvesting of trees, shrubs or other naturally occurring vegetation are prohibited except for:
 - a. Removal, destruction, or harvesting of non-native invasive species.
 - b. Removal of diseased or infested trees, only if a State Forester certifies, and the County agrees, that these trees pose a substantial threat to the integrity of the forest as a whole;

- c. Removal of hazardous trees or limbs to prevent personal injury or property damage; and
- d. Silvicultural practices that will enhance forest health and wildlife habitat, with the approval of the County and in consultation with a Qualified Professional.

The Grantor shall notify the County in writing prior to the removal, destruction and harvesting of trees, shrubs or other vegetation and comply with the requirements herein. Fertilizer, pesticides, herbicides or other chemicals cannot be used within the Subject Property without prior written approval from the County. Any removal, destruction and harvesting of trees, shrubs or other vegetation shall only occur with prior written approval and concurrence of the County, in the County's sole discretion and at no expense to the County.

"Harvesting" is hereby defined as the severing of the tree from its stump.

- 3. Posting of advertisement, including signs and or billboards, is not permissible.
- 4. Disposal of waste materials, manmade or otherwise, is not permissible.
- 5. The property shall not be used, without prior written approval from the County, as a site for any major public utility installation, including but not solely limited to electric generating stations, electric transmission lines, gas generating plants, gas storage tanks, radio or microwave relay stations, or telephone exchanges.
- 6. No right of access by the general public to any portion of the Subject Property is conveyed by this easement. The easement neither restricts nor enlarges access to the general public in common open space held under community or homeowner association control, beyond any access rights specific to the applicable community or homeowner association covenants and bylaws.
- 7. The County is conveyed the right to preserve and protect the conservation values of the Subject property, the right to enter upon the Subject Property for the purpose of monitoring compliance with and otherwise enforce the terms of this Easement , and the right to prevent any activity on or use of the Subject Property that is inconsistent with the terms of this Easement and to require through whatever means the County deems appropriate the restoration of the Subject property that may be damaged by any inconsistent activity or use.
- 8. Upon receipt of notice from the County that the Grantor is in violation of any terms of this Easement or that a violation is threatened, the County shall give written notice to the Grantor of such violation and demand corrective action sufficient to remedy the violation. However, if the County, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the conservation values of the Subject Property, the County may pursue its remedies under this paragraph without prior notice to the Grantor. Otherwise the Grantor shall remedy the violation to the satisfaction of the County within thirty (30) days of the notice or any reasonable time as determined by the County. If adequate remedy is not attained within any specified time period the County is granted discretion to perform all necessary work to remedy such that the terms of this Easement are satisfied, and the Grantor shall be assessed for the cost of the work plus any inspection, administrative or other costs incurred by the County. If not paid within thirty (30) days, the assessment shall create a lien on the Subject Property and may be included in the tax bill for the Subject property, and collected as taxes by the County. The County shall retain the option to bring an

action at law or in equity in a court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation, ex parte as necessary, by injunction, to recover any damages to which it may be entitled for violation of the terms of this Easement or injury to any conservation values of the Subject Property. Grantor agrees to pay for Court costs and attorneys' fees if the County prevails any judicial proceedings. No delay or omission by the County in the exercise of any right or remedy upon any breach by the Grantor shall impair such right or remedy or be construed as a waiver. The Grantor hereby waives any defense of laches, estoppels, or prescription.

9. The Grantor shall indemnify and save the County from any and all claims for damages to persons or property arising from the construction, maintenance, inspection, monitoring and use of the Subject Property. The Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Property including, without limitation, the payment of taxes on the Subject Property.
10. The Grantor agrees to incorporate the terms of this Easement in any deed or other legal instrument by which they divest themselves of any interest in all or any portion of the Subject Property, including without limitation, a leasehold interest no fewer than twenty (20) days prior to the date of such transfer. The failure of the Grantor to perform any act required by this paragraph shall not impair the validity of this Easement or limit its ability to enforce in any way.
11. The General provisions of this Easement are as follows:
 - a. Controlling Law. The interpretation and performance of this Easement shall be governed by the laws of the State of Maryland.
 - b. Liberal Construction. Any general rule of the construction, contrary of, and notwithstanding this Easement, shall be liberally construed in favor of the grant to affect the purpose of the Easement. If any provision of this instrument if found ambiguous, an interpretation consistent with the purpose of this Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.
 - c. Severability. If any provision of this Easement, or the application thereof to any person or circumstance, if found to be invalid, the remainder of the provisions of this Easement, or the application of such provision to persons or circumstances other than those to which it is found invalid, as the case may be, shall not be affected thereby.
 - d. Entire Agreement. This instrument sets forth the entire agreement of then parties with respect to the Easement.
 - e. Successors. The covenants, terms, conditions, and restrictions of this Easement shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall continue as a servitude running in perpetuity with the Subject Property.

TO HAVE AND TO HOLD unto the County, its successors, and assigns forever.

IN WITNESS WHEREOF, the Grantor and the County have hereunto set their hands and seals the day and year above written.

GRANTOR:

Witness

By: _____(Seal)

Witness

By: _____(Seal)

State of Maryland, _____ County, To Wit:

I HEREBY CERTIFY, that on this _____ day of _____, 20____, before me the subscriber, a Notary Public in and for the State and County aforesaid, personally appeared _____ known to me (or satisfactory proven) to be a Grantor of the foregoing Deed of Conservation Easement and acknowledged that he executed the same for the purposes therein contained and in my presence and sealed the same.

WITNESS my hand and Notarial Seal. _____(Seal)
Notary Public

My Commission Expires: _____

ACCEPTED BY CHARLES COUNTY:

Attest:

COUNTY COMMISSIONERS OF
CHARLES COUNTY

By: _____(Seal)
, President

State of Maryland, Charles County, To Wit:

I HEREBY CERTIFY, that on this _____ day of _____, 20____, before me the subscriber, a Notary Public in and for the State and County aforesaid, personally appeared _____ known to me (or satisfactory proven) to be a Grantor of the foregoing Deed of Conservation Easement and acknowledged that he executed the same for the purposes therein contained and in my presence and sealed the same.

WITNESS my hand and Notarial Seal. _____(Seal)
Notary Public

My Commission Expires: _____

PRIVATE PEDESTRIAN TRAVEL WAY EASEMENT

THIS AGREEMENT is made this _____ day of _____, 20__, by and between _____ (Grantor), and the County Commissioners of Charles County, Maryland, a body corporate and politic, (County).

WITNESSETH, that in consideration of the sum of one dollar (\$10.00), the receipt of which is hereby acknowledged, the Grantor does hereby grant and convey to County a perpetual easement through and across the Property of Grantor particularly described and indicated as _____

_____ in the Subdivision _____ as shown on a plat recorded among the land records of Charles County, Maryland in plat book _____, page(s) _____; for the purpose of operating and maintaining a pedestrian travel way within the boundary of the permanent easement(s).

AND the Grantor covenants and agrees with County as follows: **First:** All access drives and appurtenant facilities and any pedestrian travel way related improvements which will be installed in the easement(s) shall remain the property of the Grantor. **Second:** At no time shall Grantor charge County for the use of the property occupied by County or for the privilege of exercising the rights granted under this agreement. **Third:** County, its agents, and employees shall have the right of access from a public road to the easement(s) over the property of Grantor. **Fourth:** County shall have such rights and privileges as may be reasonable for the full enjoyment or use of the easement(s) herein granted. **Fifth:** Grantor reserves the right to make use of the easement(s) herein granted in a manner which is not inconsistent with the rights herein conveyed, or which does not interfere with the use of the easement(s) by County for the purposes of this agreement. However, Grantor shall not make or erect any improvements whatsoever, including buildings, fences, walls or other structures on the easement(s) without obtaining the prior written approval of County. **Sixth:** After final approval of clearing and grading of the easement area(s), Grantor agrees to perform the necessary routine maintenance such as mowing of the grass, maintenance of vegetation, and removal of trash and other objects in the easement(s). Grantor agrees to perform the necessary maintenance to allow the proper and safe use of any pedestrian travel way improvements and any other related improvements within the easement(s). **Seventh:** If, after reasonable notice by County, Grantor shall fail to construct, repair, maintain or operate the pedestrian travel way within a reasonable period of time in accordance with the approved design standards and with the law and all applicable rules and regulations, the County may, but is not obligated to, enter onto the facility and perform all necessary construction, repair, maintenance and operating work, and may assess the Grantor for the cost of said work. The assessment shall be a lien against all property subject to and benefitted by the pedestrian travel way described in this agreement. Such costs shall be assessed, levied, collected and enforced as County real estate taxes are now, or may hereafter be, by law levied and collected, and shall have the same priority rights, bear the same interest and penalties, constitute a lien upon the real property so assessed, be placed upon the property tax bill and in every respect be treated the same as County real estate taxes. Such costs shall also be personal obligations of the owners of the property at the time the costs are incurred, and may be collected accordingly.

Grantor warrants that it is seized of the property subject to the easements(s) and has the right to convey the easement(s); that there are no encumbrances; that the County shall have quiet enjoyment; and that Grantor shall execute such further assurances as may be required.

This Agreement and the covenants contained herein shall run with the land and shall bind the Grantor and the Grantor's heirs, executors, administrators, successors and assigns, and shall bind all present and

subsequent owners of the subject property.

Lienholders join herein for the purpose of releasing any deeds of trust, mortgages or other liens as to the easement(s). The liens as to the remainder of the property will not be affected. The parties, date of instrument, and recordation information for the instrument being partially released are as follows:

WITNESS our hands and seals:

ATTEST:

GRANTOR:

_____ (SEAL)

_____ (SEAL)

State of Maryland, Charles County, to Wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the Subscriber, a Notary Public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

LIENHOLDER:

WITNESS: _____ (SEAL)

WITNESS: _____ (SEAL)

State of Maryland, Charles County, to Wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the Subscriber, a Notary Public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

State of Maryland, Charles County, to Wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the Subscriber, a Notary Public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

Approved for Acceptance:

Approved as to Legal Sufficiency:

Director
Planning and Growth Management

County Attorney

ATTEST:

COUNTY COMMISSIONERS OF
CHARLES COUNTY, MARYLAND

Clerk

President

PUBLIC SIGHT DISTANCE EASEMENT

THIS AGREEMENT is made this _____ day of _____, 20__, by and between _____ (Grantor), and the County Commissioners of Charles County, Maryland, a body corporate and politic, (County).

WITNESSETH, that in consideration of the sum of one dollar (\$1.00), the receipt of which is hereby acknowledged, the Grantor does hereby grant and convey to County a perpetual easement through and across the Property of Grantor particularly described and indicated as _____

in the Subdivision _____ as shown on a plat recorded among the land records of Charles County, Maryland in plat book _____, page(s) _____; for the purpose of providing unobstructed views across the easement(s) for traffic safety.

AND the Grantor covenants and agrees with County as follows: **First:** All improvements, access drives and appurtenant facilities which will be installed in the easement(s) shall remain the property of Grantor. **Second:** At no time shall Grantor charge County for the use of the property occupied by County or for the privilege of exercising the rights granted under this agreement. **Third:** County, its agents, and employees shall have the right of access from a public road to the easement(s) over the property of Grantor. **Fourth:** County shall have such rights and privileges as may be reasonable for the full enjoyment or use of the easement(s) herein granted. **Fifth:** Grantor reserves the right to make use of the easement(s) herein granted in a manner which is not inconsistent with the rights herein conveyed, or which does not interfere with the use of the easement(s) by County for the purposes of this agreement. However, Grantor shall not make or erect any improvements whatsoever, including buildings, fences, walls or other structures on the easement(s) without obtaining the prior written approval of County. **Sixth:** Grantor shall not place any structure, plant or object within the easement(s) between an elevation of 18 inches and 96 inches in height. The preceding sentence does not apply to poles or trees that the County determines do not adversely affect traffic visibility. **Seventh:** After final approval of clearing and grading of the easement area(s), Grantor agrees to perform the necessary routine maintenance such as mowing of the grass, maintenance of vegetation to meet the height limits of the sixth item above, and removal of trash and other objects to allow clear sight through the easement from the public roadway(s). **Eighth:** County shall at all times have the right to trim, cut and keep clear all hedges, shrubbery, trees, limbs and other obstructions within the easement.

Grantor warrants that it is seized of the property subject to the easements(s) and has the right to convey the easement(s); that there are no encumbrances; that the County shall have quiet enjoyment; and that Grantor shall execute such further assurances as may be required.

This Agreement and the covenants contained herein shall run with the land and shall bind the Grantor and the Grantor's heirs, executors, administrators, successors and assigns, and shall bind all present and subsequent owners of the subject property.

Lienholders join herein for the purpose of releasing any deeds of trust, mortgages or other liens as to the easement(s). The liens as to the remainder of the property will not be affected. The parties, date of instrument, and recordation information for the instrument being partially released are as follows:

WITNESS our hands and seals:

ATTEST:

GRANTOR:

_____ (SEAL)

_____ (SEAL)

State of Maryland, Charles County, to Wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the Subscriber, a Notary Public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

LIENHOLDER:

WITNESS: _____ (SEAL)

WITNESS: _____ (SEAL)

State of Maryland, Charles County, to Wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the Subscriber, a Notary Public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

State of Maryland, Charles County, to Wit:

I hereby certify, that on this _____ day of _____, 20____, before me, the Subscriber, a Notary Public of the State and County aforesaid, personally appeared _____ and acknowledged the foregoing easement to be his/her _____ duly authorized act.

As witness my hand and Notarial Seal.

Notary Public

My commission expires: _____

Approved for Acceptance:

Approved as to Legal Sufficiency:

Director
Planning and Growth Management

County Attorney

ATTEST:
CHARLES COUNTY, MARYLAND

COUNTY COMMISSIONERS OF

Clerk

President

APPENDIX 14

3-Step SWM Plan Review Procedures

A. PLANS REQUIRING PRELIMINARY PLANS AND PLANNING COMMISSION APPROVAL

Step 1: Concept Stormwater Management Plans

- a. A completed Concept Stormwater Management Plan Application (attached), the minimum review fee and four (4) sets of the Concept Stormwater Management Plans must be submitted to the Planning & Growth Management/Planning Division with the Preliminary Plan.
- b. The information required on the Concept Stormwater Management Plan is outlined in the Stormwater Management Ordinance.
- c. Concept Stormwater Management Plans must be approved by all agencies and divisions and the Preliminary Plan must receive Planning Commission approval prior to submission of the Site Stormwater Management Plans.

Step 2: Site Stormwater Management Plans

- a. A completed Stormwater Management Site Plan Application (attached), the minimum review fee, four (4) sets of the Site Stormwater Management Plans and four copies of the approved preliminary plan must be submitted to the Planning & Growth Management/Codes, Permits & Inspection Services Division.
- b. The information required on the Site Stormwater Management Plan is outlined in the Stormwater Management Ordinance.
- c. Site Stormwater Management Plans must be approved by all agencies and divisions before the submission of the Final Stormwater Management Plans.

Step 3: Final Stormwater Management Plans

- a. Final Stormwater Management Plans are submitted with the Development Services Permit application according to current procedures.

B. COMMERCIAL, INDUSTRIAL PLANS AND PLANS REQUIRING A ZONING SITE DEVELOPMENT PLAN

Step 1: Concept Stormwater Management Plans

- a. A completed Concept Stormwater Management Plan Application (attached), the minimum review fee and four (4) sets of the Concept Stormwater Management Plans must be submitted to the Planning & Growth Management/Codes, Permits & Inspection Services Division.
- b. The information required on the Concept Stormwater Management Plans is outlined in the Stormwater Management Ordinance.
- c. Concept Stormwater Management Plans must receive approval for all agencies and divisions prior to submission of the Site Stormwater Management Plans.

Step 2: Site Stormwater Management Plans

- a. A completed Site Stormwater Management Plan Application (attached), the minimum review fee and four (4) sets of the Site Stormwater Management Plans must be

submitted to the Planning & Growth Management/Planning Division with the Zoning Site Development Plan.

- b. The information required on the Site Stormwater Management Plan is outlined in the Stormwater Management Ordinance.
- c. Site Stormwater Management Plans must be approved by the all agencies and divisions before the submission of the Final Stormwater Management Plans.

Step 3: Final Stormwater Management Plans

- a. Final Stormwater Management Plans are submitted with the Development Services Permit application according to current procedures.

C. MULTIFAMILY DEVELOPMENT (TOWNHOUSE) REQUIRING A PRELIMINARY PLAN & A SITE DEVELOPMENT PLAN

Step 1: Concept Stormwater Management Plans

- a. A completed Concept Stormwater Management Plan Application (attached), the minimum review fee and four (4) sets of the Concept Stormwater Management Plans must be submitted to the Planning & Growth Management/Planning Division with the Preliminary Plan.
- b. The information required on the Concept Stormwater Management Plan is outlined in the Stormwater Management Ordinance.
- c. Concept Stormwater Management Plans must receive stormwater management approval from all agencies and divisions and the Preliminary Plan must receive Planning Commission approval prior to submission of the Site Stormwater Management Plans.

Step 2: Site Stormwater Management Plans

- a. A completed Site Stormwater Management Plan Application (attached), the minimum review fee, four (4) sets of the Site Stormwater Management Plans and four copies of the approved preliminary plan must be submitted to the Planning & Growth Management/Planning Division with the Zoning Site Development Plan.
- b. The information required on the Site Stormwater Management Plan is outlined in the Stormwater Management Ordinance.
- c. Site Stormwater Management Plans must be approved by all agencies and divisions and either receives Planning Commission approval and/or Planning Director approval before the submission of the Final Stormwater Management Plans.

Step 3: Final Stormwater Management Plans

- a. Final Stormwater Management Plans are submitted with the Development Services Permit application according to current procedures.

D. ALL OTHER PLANS WHICH DO NOT REQUIRE PLANNING COMMISSION OR ZONING SITE DEVELOPMENT PLAN APPROVAL

Step 1: Concept Stormwater Management Plans

- a. A completed Concept Stormwater Management Plan Application (attached), the minimum fee and four (4) sets of the Concept Stormwater Management Plans shall be

submitted to the Planning & Growth Management/Codes, Permits & Inspection Services Division.

- b. The information required on the Concept Stormwater Management Plans is outlined in the Stormwater Management Ordinance.
- c. Concept Stormwater Management Plans must receive approval from all agencies and divisions prior to the submission of the Site Stormwater Management Plans.

Step 2: Site Stormwater Management Plans

- a. A completed Site Stormwater Management Plan Application (attached), the minimum review fee and four (4) sets of the Site Stormwater Management Plans must be submitted to the Planning & Growth Management/Codes, Permits & Inspection Services Division.
- b. The information required on the Site Stormwater Management Plan is outlined in the Stormwater Management Ordinance.
- c. Site Stormwater Management Plans must be approved by all agencies and divisions prior to the submission of the Final Stormwater Management Plans.

Step 3: Final Stormwater Management Plans

- a. Final Stormwater Management Plans are submitted with the Development Services Permit application according to current procedures.

E. SUBDIVISION WHICH DO NOT REQUIRE A PRELIMINARY PLAN OR ZONING SITE DEVELOPMENT BUT DO REQUIRE PLATS TO BE RECORDED OR HAVE RECORDED PLATS

1. If a plat of subdivision was recorded prior to May 4, 2010 and the plat contains a common access driveway to be constructed then the swm plans for the common access driveway may occur with the first building permit. The swm for the common access driveway as well as the lots must adhere to the current SWM Ordinance and address swm using ESD to the MEP techniques. The swm does not follow the 3 step swm plan review process.
2. If a plat of subdivision is proposed containing a common access driveway the swm plan for the common access driveway must comply with the following procedures:

Step 1: Concept Stormwater Management Plans

- a. A completed Concept Stormwater Management Plan Application (attached), the minimum fee and four (4) sets of the Concept Stormwater Management Plans shall be submitted to the Planning & Growth Management/Codes, Permits & Inspection Services Division.
- b. The information required on the Concept Stormwater Management Plans is outlined in the Stormwater Management Ordinance.
- c. Concept Stormwater Management Plans must receive approval from all agencies and divisions prior to the submission of the Site Stormwater Management Plans.

Step 2: Site Stormwater Management Plans

- a. A completed Site Stormwater Management Plan Application (attached), the minimum review fee and four (4) sets of the Site Stormwater Management Plans must be submitted to the Planning & Growth Management/Codes, Permits & Inspection Services Division.

- b. The information required on the Site Stormwater Management Plan is outlined in the Stormwater Management Ordinance.
- c. Site Stormwater Management Plans must be approved by all agencies and divisions prior to the submission of the Final Stormwater Management Plans.
- d. The CPIS Division will determine how the final swm plans will proceed whether it be with a Development Service Permit or the first Building Permit.
- e. The CPIS Division may determine at this point if a plat may be recorded or may not recommend approval of the plat until completion of the Final SWM Plans.

Step 3: Final Stormwater Management Plans

- a. Final Stormwater Management Plans which are allowed to proceed under a Building Permit then the submittal must follow the Building Permit Procedures. The County reserves the right to require review fees, inspection fees, bond, easements agreements or any other information normally required as part of the process.
- b. Final Stormwater Management Plans which are not allowed to proceed under a Building permit then the Final Stormwater Management Plans are submitted with the Development Services Permit application according to current procedures.

F. ANY OTHER PLAN THE COUNTY DETERMINES SWM IS NECESSARY

The CPIS Division will at its discretion determine how the swm plan will be processed.

Charles County Government
Department of Planning & Growth Management
P.O. Box 2150 P La Plata, MD 20646

Concept Stormwater Management Plan
Site Stormwater Management Plan
Application

PROJECT INFORMATION:

Project Name: _____
Section No.: _____ Phase No.: _____
Stormwater Management Concept Plan (VSC) _____
Stormwater Management Site Plan (VSS) _____
Property ID(s): _____
Tax Map _____ Grid _____ Parcel(s) _____
Project Address/Location (be specific): _____
ADC Map Coordinates: _____ Total Disturbed Area (sf): _____
Intended Use: _____

For Office Use Only
Application No. _____
Entered By _____
Date Entered _____
Prelim Plan # _____
VSC# _____
VSS# _____

APPLICANT INFORMATION:

Applicant's Name: _____
Applicant's Address: _____
Fax No.: _____ Phone No: _____ email address: _____

CONSULTANT INFORMATION:

Consultant Name: _____
Consultant's Address: _____
Fax No.: _____ Phone No: _____ email address: _____

FEE CALCULATION:

Submission Fee: _____
Concept Stormwater Management Plan Application Fees = Approved Fees & Charges
Site Stormwater Management Plan Application Fee = Approved Fees & Charges

Make Checks Payable To: **Charles County Commissioners** Telephone: (301) 645-0618 or 870-3935 x2618

Applicant's signature: _____ Date: _____

cc: file, applicant

APPENDIX 15

ESD SCREENING

Charles County, Maryland

Codes, Permits & Inspection Services Division

ESD SCREENING SUMMARY SHEET

(all projects including single family lot development)

Project: _____ Total Site Area: _____
 Date: _____ Total Impervious Area: _____
 By: _____ Drainage Area: _____

ESD PRACTICE	APPLICABILITY TO PROJECT	COMPUTATIONAL METHOD	VOLUME CALCULATED	VOLUME PROVIDED
A-1 Green Roof				
A-2 Permeable Pavement				
A-3 Reinforcing Turf				
N-1 Rooftop Disconnection				
N-2 Non-Rooftop Disconnection				
N-3 Sheetflow to Conservation				
M-1 Rainwater Harvesting				
M-2 Submerged Gravel Wetland				
M-3 Landscape Infiltration				
M-4 Infiltration Berms				
M-5 Drywells				
M-6 Micro-bioretenion				
M-7 Rain Garden				
M-8 Swales				
M-9 Enhanced Filters				
Site Totals				

Comments:

APPENDIX 16

MDE CODES

BMP	Code	Notes	Practice Type
Artificial Wetlands	SM	See Shallow Marsh Structures	Wet Pond & Wetlands
Attenuation swale or dry swale	AS	Open drainage channel designed to detain and promote the filtration of stormwater runoff through underlying fabricated soil media (see Grassed Swale or SW)	Filtering Practice
Bio-retention	BIO or BR	Landscape designed such that stormwater runoff collects in shallow depressions before filtering through fabricated planting soil media	Filtering Practice
Check Dam	CD	A small dam constructed in a gully or other small waterway to decrease flow velocity (by reducing the channel gradient), minimize scour, & promote deposition of sediment	Filtering Practice
Detention Structure (Dry Pond)	DP	Designed to store runoff without a permanent pool	Dry Detention Ponds & Hydrodynamic Structure
Dry Well	DW	An infiltration trench variant designed to exclusively accommodate rooftop runoff	Infiltration Practice
Exemption	EXEMPT	Land development activities that are not subject to the stormwater management requirements	Not a SWM BMP
Extended Detention Structure (Two types): 1) Extended Detention Structure, Dry 2) Extended Detention Structure, Wet	ED EDSD EDSW	Designed to temporarily detain a portion of runoff for 24 hrs after a storm using a fixed orifice to regulate outflow at a specific rate, allowing solids & associated time to settle out Designed for the temporary storage of runoff associated with at least a 24 hr 1-year storm without creating a permanent pool of water Designed for the storage of runoff associated with at least a 24 hr 1-year storm. The detained water drains partially & the remaining portion creates a permanent pool	Dry Extended Detention Pond Dry Extended Detention Pond Depending upon structure design, this could be classified as a Dry Extended Detention Ponds or Wet Pond & Wetlands
Filter Strip	FS	Vegetated land designed to intercept sheet flow	Filtering Practice

		from upstream development	
Flow Splitter	FISp	Hydraulic structure designed either to divert a portion of stream flow to a BMP located away from a channel, direct stormwater to a parallel pipe system or bypass a portion of base flow around a pond	
Flood Management Area	FLOOD	10 year storm overbank flood protection	Not a WQ BMP
Forebay	FOREBAY	Storage structure adjoining a SWM BMP inlet designed to trap coarse sediments and thereby lessen their accumulation in the main treatment area *	Dry Detention Ponds & Hydrodynamic Structure
Gabion	GABION	A large rectangular box made of heavy gauze wire mesh which holds cobbles and boulders for changing stream flow patterns, bank stabilization, and erosion control.	Filtering Practice
Grass Swale	SW	Open vegetated channel used to convey runoff and provide treatment by filtering pollutants and sediment	Filtering Practice
Hydrodynamic Structure aka: 1) Oil grit separator 2) Bay Saver© 3) Stormceptor©	OGS BS SC	An engineered structure used to separate sediments and oils from stormwater runoff using gravitational separation and/or hydraulic flow	Dry Detention Ponds & Hydrodynamic Structure
Infiltration Basin	IB	Designed to allow stormwater to infiltrate into permeable soils. It differs from a retention structure in that it may include a back-up underdrain pipe to ensure eventual removal of standing water	Infiltration Practice
Infiltration Trench (Three types): 1) Complete Exfiltration 2) Partial Exfiltration 3) Water Quality Exfiltration	IT ITCE ITPE ITWQE	An excavated trench that has been backfilled with exposed or unexposed stones to form an underground reservoir (Also see Dry Well) Runoff can only exit the trench by exfiltrating through the stone reservoir into the underlying soils Runoff exits the trench by exfiltrating a) through the stone reservoir into the underlying soil, and b) via a perforated underdrain at the bottom of the trench that diverts	Infiltration Practice

		runoff to a central outlet Storage volume is set to receive only the first flush from an impervious area of the watershed	
Landscape	LANDSCAPE	Impervious area reduction	Filtering Practice
Level Spreader	LS	A device for distributing stormwater uniformly over the ground surface as sheet flow to prevent concentrated, erosive flow and promote infiltration	Not a SWM BMP – Level Spreader
Micropool	MP	A smaller permanent pool used in stormwater pond to mitigate the thermal impacts of a larger pond, impacts on existing wetlands, or compensate for lack of topographic relief	Wet Pond & Wetlands
Observation well	OBS_WELL	A test well installed in an infiltration trench to monitor draining time after installation	Not a SWM BMP – Observation Well
Other	OTR	Self-explanatory. Describe	Variable
Porous Pavement	PP	A porous asphalt surface designed to have bearing strength similar to conventional asphalt but provides a rapid conduit for runoff to reach a subsurface stone reservoir	
Sand Filter	SF	A bed of sand to which the first flush of runoff is diverted. Water leaving the filter is collected in underground pipes & returned to a waterway. A layer of peat, limestone, and/topsoil may be added to improve removal efficiency	Filtering Practice
Shallow Marsh	SM	A structure with a permanent shallow pool planted with wetland vegetation often designed to provide extended detention	Wet Pond & Wetlands
Underground Storage	UGS	Vault like structure designed for the temporary storage of storm flow	Dry Detention Ponds & Hydrodynamic Structure
Variance	VARIANCE	A modification of the minimum stormwater management requirement if site conditions are such that strict adherence to	Not a SWM BMP

		the Guidelines would impose unnecessary hardship on the applicant without fulfilling the intent of the Guidelines	
Vegetated Buffer	VB	A vegetated protective zone of variable width located along both sides of a waterway	Filtering Practice
Waiver	WAIVER	Exemption from stormwater management requirements granted to an applicant for a specific project based a review by MDE	Not a SWM BMP
Water Quality Inlet	OGS	See Hydrodynamic Structure - Oil Grit Separator	Dry Detention Ponds & Hydrodynamic Structure
Wet Pond	WP	A structure with a permanent pool of water for treating incoming storm runoff	Wet Pond & Wetlands

APPENDIX 17

SWM & STORM DRAINAGE “AS-BUILT” CERTIFICATIONS AND “AS-BUILT” TABLES

STORMWATER MANAGEMENT “AS-BUILT” CERTIFICATION

I hereby certify that the stormwater management device (devices) shown on the plans and individually identified below has (have) been constructed in accordance with the plans issued by Charles County, PGM Number# V _____ except as noted in red on the “AS BUILT” drawings. If required by Charles County the Licensed Professional or the Licensed Professional of record has and/or will certify that the red-noted exceptions do not adversely affect the intended performance of the device (devices).

Device Identification (Identify Each Device Individually)

Printed Name	Signature
Maryland Registration Number	Date

“Certify” means to state or declare a professional opinion based on sufficient and appropriate onsite measurements, observations and inspections.

STORMWATER MANAGEMENT “AS-BUILT” CERTIFICATION BY THE LICENSED PROFESSIONAL

I hereby certify that the stormwater management device (devices) shown on the plans and individually identified below has (have) been constructed in accordance with the plans issued under the Charles County PGM Number# V _____ as noted on the “AS BUILT” drawings. I also certify that the red-noted exceptions shown on the As-Built Plans do not adversely affect the intended performance of the device (devices).

Device Identification (Identify Each Device Individually)

Printed Name	Signature
Maryland Registration Number	Date

“Certify” means to state or declare a professional opinion based on sufficient review, evaluation and/or inspections.

STORMWATER MANAGEMENT
A-1 GREEN ROOF CERTIFICATION REQUIREMENTS

Project Name: _____
Project Number: _____

The Developer shall acknowledge and provide copies of those certifications for the following:

1. Roof Load Bearing Capacity: _____ date of certification: _____
2. Water Tightness of waterproofing membrane: _____ date of certification: _____
(prior to the placement of planting media and stock)

The Developer shall acknowledge and provide copies of inspections from qualified individuals for the following stages of construction:

1. During the placement of the water proofing membrane.
2. During the placement of the drainage system.
3. During the placement of the plant material.
4. Upon installation of the plant material.

The Developer shall acknowledge that a Registered Landscape Architect will be obtained to inspect and certify that adequate vegetation has survived during the second growing season and that certifications will be provided to Charles County.

I hereby acknowledge that I have read and will comply with those requirements as established herewith:

_____ printed name
_____ signature
_____ title
_____ date

AS - BUILT DATA FOR PONDS / WETLANDS		
PROJECT NAME:		PGM#
SWM #:	MDE Designation:	Date:
TYPE OF FACILITY:	DESIGN	AS-BUILT
WQ _v Storage Volume		
Cp _v Storage Volume		
2-yr Storage Volume		
10-yr Storage Volume		
100-yr Storage Volume		
WQ _v Storage Elevation		
Cp _v Storage Elevation		
2-yr Storage Elevation		
10-yr Storage Elevation		
100-yr Storage Elevation		
Cp _v Discharge (cfs)		
2-yr Discharge (cfs)		
10-yr Discharge (cfs)		
100-yr Discharge (cfs)		
Cp _v Control Opening/Elevation		
2-yr Control Opening/Elevation		
10-yr Control Opening/Elevation		
Principal Spillway: Elev-out /Diam /Grade		
Emergency Spillway: Width /Length /Elev		
Outlet Protection: Length/Width/Stone Size		

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:
 Include top of the riser elevation
 Include length of spillway pipe
 Any other data required for the specific BMP

AS - BUILT DATA FOR INFILTRATION TRENCHES		
PROJECT NAME:		PGM#
SWM#	MDE Designation:	Date:
TYPE OF FACILITY:	DESIGN	AS-BUILT
Bottom Elevation		
Surface Elevation		
Surface Dimensions		
Bottom Dimensions		
Storage Volume		

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:
 Any other data required for specific BMP.

**AS - BUILT DATA FOR FILTERS
(SAND FILTERS, BIORETENTION, ETC.)**

PROJECT NAME: _____ **PGM#** _____

FACILITY TYPE: _____

SWM# _____ **MDE Designation:** _____ **Date:** _____

ITEMS	DESIGN	AS-BUILT
Filter Bed Area (LxW)		
Filter Bed Surface Elevation		
Filter Inlet Pipe Size / Elevation		
Outlet Pipe (Underdrain) size/elevation		

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name
 _____ Signature

ADDITIONAL CONSIDERATIONS:

- Include forebay/pretreatment area and volume
- Include verification of bioretention plantings (species composition/#'s/health of vegetation)
- Include composition of filter media or certification from the supplier.
- Include thickness of the filter media.
- Include check-off for proper placement of geotextile (i.e. placed on sides only, and no horizontal layers)
- Any other data required for the specific BMP.

AS - BUILT DATA FOR FLOW SPLITTERS		
PROJECT NAME		PGM#
FACILITY TYPE:		
SWM#	MDE Designation:	Date:
ITEMS	DESIGN	AS-BUILT
WQ Diversion Opening Size		
WQ Diversion Opening Elevation		
Bypass Weir Length		
Bypass Weir Elevation		
Bypass Opening Size		
Bypass Opening Elevation		

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:

Any other data required for the specific BMP.

AS - BUILT DATA FOR OPEN CHANNELS (DRY/WET SWALES)		
PROJECT NAME:		PGM#
FACILITY TYPE:		
SWM#	MDE Designation:	Date:
ITEMS	DESIGN	AS-BUILT
Bottom Width		
Total Length		
Average Side Slopes		
Average slope		
WQ Volume		
Number of Check Dams		
Number of Weirs		
2-year freeboard		
10-year freeboard		

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:

- Underdrain pipe size
- Filter Media Composition
- Thickness of Filter Media
- Composition of Filter Media

Any other data required for the specific BMP.

AS - BUILT DATA FOR ALTERNATIVE SURFACES

PROJECT NAME:		PGM#
FACILITY TYPE:		
SWM#	MDE Designation:	Date:
ITEMS	DESIGN	AS-BUILT

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:

- Underdrain pipe size
 - Filter Media Composition
 - Thickness of Filter Media
 - Composition of Filter Media
- Any other data required for the specific BMP.

AS - BUILT DATA FOR STORM DRAINS

PROJECT NAME: _____ **PGM#** _____

Str. No.	Size	Type	Design Invert –in Elev.	Design Invert-out Elev.	As-Built Invert-in Elev.	As-Built Invert-out Elev.	Design Length	As-Built Length	Design Slope %	As-Built Slope %

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name
 _____ Signature

ADDITIONAL CONSIDERATIONS:

Any other data as required.

AS - BUILT DATA FOR INLETS

PROJECT NAME: _____

PGM# _____

Str. No.	Type	Design Throat Length	As-Built Throat Length	Design Top Elev.	As-Built Top Elev.	Design Bottom Elev.	As-Built Bottom Elev.

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:

Any other data as required.

AS-BUILT DATA FOR ESD PRACTICE M-8

To be completed by the certifying licensed professional

Type of facility:	Design	As-Built
Filter Bed Length	feet	feet
Filter Bed Width	feet	feet
Filter Bed Surface Area	sf	sf
Filter Bed Surface Elevation		
Filter Bed Planting Media Minimum Thickness	inches	inches
Filter Bed Pea Gravel Thickness	inches	inches
#57 Stone Bottom Elevation		
Filter Bed Under-drain Pipe Size	inches	inches
Filter Bed Under-drain Pipe Invert Elevation At Inlet		
Ground Cover		
Turf Reinforcement Mat		
Geotextile at Sides		

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:

Any other data as required.

AS-BUILT DATA FOR ESD PRACTICE _____

To be completed by the certifying licensed professional

Type of facility:	Design	As-Built

DATE AS-BUILT ACCEPTED: _____

AS-BUILT ACCEPTED BY: _____ Printed Name

_____ Signature

ADDITIONAL CONSIDERATIONS:

Any other data as required.

APPENDIX 18

ROAD INVENTORY REPORT

COUNTY ROAD INVENTORY REPORT

Charles County Department of Planning & Growth Management

Page 1 of 1

Date:

PROJECT INFORMATION

Project:		PGM #:	
		Election District #	
Location:		ADC#	
Developer:		Address:	
Contractor:		Engineer:	

ROAD INFORMATION

Road Name:		R/W Width:	
Begins / Ends At			
Station:		Length:	
		Mile (s):	
		Acreage:	
Paved Section:		Width:	
Shoulder Section:		Width:	
Curb/Gutter:	SIZE & TYPE	Bridge:	Yes/No

ROAD INFORMATION

Road Name:		R/W Width:	
Begins / Ends At			
Station:		Length:	
		Mile(s):	
		Acreage:	
Paved Section:		Width:	
Shoulder Section:		Width:	
Curb/Gutter:	SIZE & TYPE	Bridge:	Yes/No

ROAD INFORMATION

Road Name:		R/W Width:	
Begins / Ends At			
Station:		Length:	
		Mile(s):	
		Acreage:	
Paved Section:		Width:	
Shoulder Section:		Width:	
Curb/Gutter:	SIZE & TYPE	Bridge:	Yes/No

Remarks:	

Charles County PGM/CPIS OFFICE USE ONLY:				ADMIN FILE #:
INSPECTION INFORMATION				
CPIS-Road Inspector:	Name	Date		
Inspection Superintendent:	Name	Date		
Public Facilities Inspector:	Name	Date		
<p><i>This certifies that the roads listed above have been constructed in accordance with the Charles County Road Ordinance and the approved engineering drawings. These roads are ready to be accepted into the County road system once the proper documentation has been received from the developer.</i></p>				
Cartograph Updated:	ACCEPTED INTO COUNTY MAINTENANCE:		DATE:	
				Liber/Folio
				Record Date
	<i>Plat Reference</i>			
			Road Deed	
			Dedication Agreement	
			Water & Sewer Easement Agreement	
			Public Drainage Easement/SWM	
			Private Drainage Easement/SWM/IM	
<p><i>CC: via email - PGM = Peter Aluotto, Frank Ward, Ham Mathur, Donna Daughtery, Ray Shumaker, Judy Michael. PW-ROADS = Steve Staples, April Knott, PW-UTILITIES = Sam Walter, EMS = Tony Rose, Kathy Lewis, CCBOE = Wes Wesolowski, FAS = Bill Deatley/Keith Sherald</i></p>				

APPENDIX 19

SWM NOCC INVENTORY AND FORMS

CHARLES COUNTY, MARYLAND

Codes, Permits & Inspection Services Division

NOTICE OF CONSTRUCTION COMPLETION FORM

To: Charles Soil Conservation District

Jurisdiction: Charles County, MD

Structure/Project Name:	
Structure/Project Address:	

Location:

Northing (1991 State Plane Coordinate System):	
Easting (1991 State Plane Coordinate System):	
ADC Map Coordinates (ex. 05K12):	
State Watershed Designation:	

Structure Drainage Area:

Facility Drainage Area (acres)		Total Project Area (acres)	
Landuse Code		Proposed Runoff Curve Number	

Structure Description:

Structure Type (Check One) MDE Designation:

Detention (dry pond)		Permeable Pavement		Other (Describe in detail):
Extended Detention		Bio-Swale		
Infiltration Basin		Wet Swale		
WQ Inlet (pretreatment)		Submerged Gravel Wetland		
Retention (Wet)		Enhance Filter		
Shallow Marsh		Bioretention		
Drywell		Micro Bioretention		
Extended Detention		Rain Garden		
Infiltration Trench		Landscape Infiltration		
Green Roof		Buffers		

Facility Site Location (onsite)		Facility Site Location (offsite)	
Permit Approval Date:		Permit Number	
Construction Completion Date:		SCD Number	
Inventory Number		Structure Number	
378 Pond		As-Built (yes or no)	

General Comments:

Person completing this form should provide the following information

Name		Date:	
Title		Phone:	
Name of Firm			

To be sent to SCD within 45 days of the completion of construction

ADDITIONAL INSTRUCTIONS

1. USE THE MARYLAND GRID COORDINATES BASED ON THE 1927 DATUM. IF THE 1983 DATUM IS USED PLEASE NOTE THIS FACT ON THE FORM AND THE PLANS.
2. LOCATE THE STRUCTURE IN THE LATEST VERSION OF THE ADC MAP FOR CHARLES COUNTY. THE COORDINATES SHOULD BE WRITTEN AS MAP NUMBER, COLUMN AND ROW. FOR EXAMPLE, FOR A BMP LOCATED ON MAP 9, COLUMN C AND ROW 10, THE CORRECT COORDINATE IS 09C10. IT IS IMPORTANT TO BE CONSISTENT WITH THE CODE THAT IS USED FOR THE ADC MAP COORDINATE, AND THE USE OF FOUR NUMERALS AND A LETTER IS ACCEPTED CONVENTION. IN ADDITION, NOTE THAT THE MAP NUMBER IS NOT NECESSARILY THE SAME AS THE PAGE NUMBER THAT IS ON THE MAP.
3. THE STATE WATERSHED DESIGNATION CORRESPONDS TO MARYLAND'S 8-DIGIT WATERSHED DESIGNATION NUMBER. A COPY OF THE WATERSHEDS IN THE CURRENT DESIGNATION SYSTEM IS AVAILABLE FROM MDE. IF THIS VALUE IS NOT READILY AVAILABLE, LEAVE IT BLANK AND MDE WILL GENERATE WATERSHED DESIGNATION USING LOCATION COORDINATES.
4. THE LAND USE CODES SHOULD CORRESPOND TO THE SYSTEM OF LAND USE / COVER USED BY THE MARYLAND OFFICE OF PLANNING AS SHOWN BELOW:

<u>CATEGORY</u>	<u>SUBCATEGORY</u>
10-URBAN BUILD-UP	11 LOW DENSITY RESIDENTIAL (0.2-2 DU/AC)
	12 MEDIUM DENSITY RESIDENTIAL (>2-8 DU/AC)
	13 HIGH DENSITY (>8 DU/AC)
	14 COMMERCIAL
	15 INDUSTRIAL
	16 INSTITUTIONAL
	17 EXTRACTIVE
	18 OPEN URBAN LAND
	191 LARGE LOT SUBDIVISION (AGRICULTURAL)
	192 LARGE LOT SUBDIVISION (FOREST)
20-AGRICULTURE	21 CROP LAND
	22 PASTURE
	23 ORCHARDS
	24 FEEDING OPERATIONS
	241 FEEDING OPERATIONS
	242 AGRICULTURAL FACILITIES
40-FOREST	41 DECIDUOUS FOREST
	42 EVERGREEN
	43 MIXED FOREST
	44 BRUSH
50-WATER	
60-WETLANDS	
70-BARREN LAND	71 BEACHES
	72 BARE EXPOSED ROCK
	73 BARE GROUND

Codes Permits & Inspection Services Division

SWM INVENTORY UPDATE SHEET

PGM#	Project Name		
Owner Name:		Phone #:	
Owner address:			
Contact Name:		Phone #	
Approval date:		Completion date:	
SWM I&M Agreement Date:		Book No.	Page No.
Number of devices:			

Number	type	MDE Designation	Drainage area served	Impervious area served	378 Pond	Misc
SWM-1						
SWM-2						
SWM-3						
SWM-4						
SWM-5						
SWM-6						
SWM-7						
SWM-8						
SWM-9						
SWM-10						
SWM-11						
SWM-12						
SWM-13						
SWM-14						
SWM-15						
SWM-16						
SWM-17						
SWM-18						
SWM-19						
SWM-20						
SWM-21						
SWM-22						
SWM-23						
SWM-24						
SWM-25						
SWM-26						
SWM-27						
SWM-28						
SWM-29						
SWM-30						

Signature	Date
Printed Name	
Firm	