



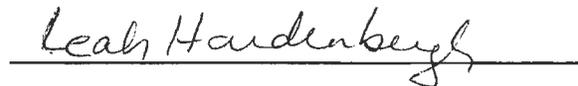
## CERTIFICATE OF AUTHENTICITY

THIS IS TO CERTIFY THAT THE FOLLOWING ELECTRONIC RECORDS ARE TRUE AND ACCURATE REPRODUCTIONS OF THE ORIGINAL RECORDS OF JAMES CITY COUNTY GENERAL SERVICES DEPARTMENT- STORMWATER DIVISION; WERE SCANNED IN THE REGULAR COURSE OF BUSINESS PURSUANT TO GUIDELINES ESTABLISHED BY THE LIBRARY OF VIRGINIA AND ARCHIVES; AND HAVE BEEN VERIFIED IN THE CUSTODY OF THE INDIVIDUAL LISTED BELOW.

**BMP NUMBER:** MC049

**DATE VERIFIED:** August 20, 2012

**QUALITY ASSURANCE TECHNICIAN:** Leah Hardenbergh

  
\_\_\_\_\_

**LOCATION:** WILLIAMSBURG, VIRGINIA



# Stormwater Division

## MEMORANDUM

Date: March 30, 2012  
To: Michael J. Gillis, Virginia Correctional Enterprises Document Management Services  
From: Leah Hardenbergh  
PO: 110426  
Re: Files Approved for Scanning

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**General File ID or BMP ID:** MC049  
**PIN:** 4810100018  
**Owner Name (if known):** OLD COLONY OFFICE PARK AND SHOPPING CENTER  
**Legal Property Description:** PARCEL C OLD COLONY  
**Site Address:** 1130 OLD COLONY LANE

*(For internal use only):*

**Box # 4**

**Agreements (in file as of scan date): N Book or Doc #:**

MC-049

**Contents for Stormwater Management Facilities As-built Files**

Each file is to contain:

- ① As-built plan
- ② Completed construction certification
3. Construction Plan
4. Design Calculations
5. Watershed Map
6. Maintenance Agreement
7. Correspondence with owners
- ⑧ Inspection Records
9. Enforcement Actions

**James City County, Virginia  
Environmental Division**

**Stormwater Management/BMP Facilities  
Record Drawing/Construction Certification  
Review Tracking Form**

County Plan No.: SP-17-01  
 Project Name: Old Colony Professional Building (from Morgan Dental)  
 Stormwater Management Facility: DUAL BIORETENTION CELLS  
 Phase:  I  II  III  
 Information Received. Date: June 21 02  
 Administrative Check.  
 Record Drawing Date: June 20 '02 AES  
 Construction Certification Date: June 27 '02 FES  
 RD/CC Standard Forms (Required after Feb 1<sup>st</sup> 2001 Only)  
 Insp/Maint Agreement Info: # 01001090 June 21 2001  
 BMP Maintenance Plan Location: DWB SET SHT 6  
 Other: \_\_\_\_\_  
 Standard E&SC Note on Approved Plan Requiring RD/CC or County comment in plan review file.  
 Yes  No Location: Sheet 10 Note #15, Note sheet 6, ENV DIV COMM #3 3/27/01  
 Assign County BMP ID Code Code: MC049  
 Log into Division's "As-Built" Tracking Log  
 Add Location to GIS Database Map. Obtain GIS site information (GPIN, Owner, Site Area, Address, etc.)  
 Preliminary Log into BMP Database (BMP ID #, Site Plan #, GPIN, Project Name)  
 Active Project File Review (correspondence, H&H, etc.)  
 Initial As-Built File setup (label, copy hydraulics, BMP information, etc.)  
 Inspector Check of RD/CC.  
 Pre-Inspection Drawing Review - Approved Plan (Quick look prior to field inspection).  
 Final Inspection (FI) Performed Date: 7/3/02  
 Record Drawing (RD) Review Date: 7/3/02  
 Construction Certification (CC) Review Date: 7/3/02  
 Actions:  
 No comments.  
 Comments. Letter Forwarded. Date: 7/3/02  
 Record Drawing (RD)  
 Construction Certification (CC)  
 Construction-Related (CR)  
 Site Issues (SI)  
 Other : \_\_\_\_\_  
 Second Submission: RD 5/03  
 Third Submission: \_\_\_\_\_  
 Acceptable for stormwater management facility purposes (RD/CC/CR/Other). Proceed with bond release.  
 Notify Darryl/Joan/Pat of acceptability using email (preferred), form or verbal. SURETY REQUEST FORM  
 Check/Clean active file of any remaining material and finish "As-Built" file.  
 Add to County BMP Inventory/Inspection schedule (Phase I, II or III).  
 Copy Final Inspection Report into County BMP Inspection Program file.  
 Digital Photographs obtained.  
 Add to JCC Hydrology & Hydraulic database (optional).

BMP Certification Information Acceptable

Plan Reviewer: [Signature]

Date: 5-23-03

DeCroy Mason's Office Colony

**Section 4 - Professional Certifications:**

Certifying Professionals: (Note: A Registered Professional Engineer or Certified Land Surveyor is responsible for preparation of a Record Drawing, sometimes referred to as an As-Built plan, for the drainage system for the project including any Stormwater Management/BMP Facilities. A Registered Professional Engineer is responsible for the inspection, monitoring and certification of Stormwater Management / BMP facilities during its construction.)

**Record Drawing and Construction Certifications for Stormwater Management / BMP Facilities**

Record Drawing Certification

Firm Name: AES CONSULTING ENGINEERS  
Mailing Address: 5245 OLDE TOWNE ROAD  
SUITE 1 WILLIAMSBURG, VA 23188  
Business Phone: 757-253-0040  
Fax: 757-220-8994

Name: MARK A. RICHARDSON, PE  
Title: Project Manager  
Signature: [Signature]  
Date: 6/20/02

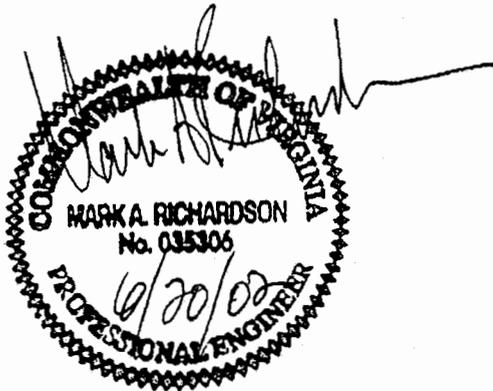
I hereby certify to the best of my knowledge and belief that this record drawing represents the actual condition of the Stormwater Management / BMP facility. The facility appears to conform with the provisions of the approved design plan, specifications and stormwater management plan, except as specifically noted.

Construction Certification

Firm Name: Foundation Engineering Science  
Mailing Address: 11843-B Cannon Blvd  
Newport News, VA 23606  
Business Phone: 757-873-4113  
Fax: 757-873-4114

Name: RAJA S. ELAWAR, P.E.  
Title: V.P. Principal Engineer  
Signature: [Signature]  
Date: 6/27/02

I hereby certify to the best of my knowledge and belief that this Stormwater Management/BMP facility was monitored and constructed in accordance with the provisions of the approved design plan, specifications and stormwater management plan, except as specifically noted.



( Seal )

( Seal )

Virginia Registered Professional Engineer  
or Certified Land Surveyor

Virginia Registered  
Professional Engineer



James City County, Virginia  
Environmental Division

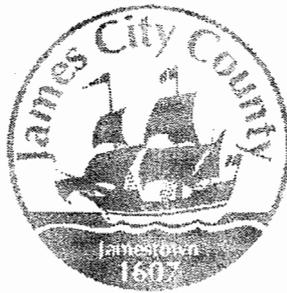
## Stormwater Management / BMP Facilities Record Drawing and Construction Certification

### *Standard Forms & Instructions*

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*Issue Date*  
*February 1, 2001*



James City County, Virginia  
Environmental Division

Stormwater Management / BMP Facilities  
Record Drawing and Construction Certification Forms

( Note: In accordance with the requirements of the Chesapeake Bay Preservation Ordinance, Chapter 23, Section 23-10(4), BMP's shall be designed and constructed in accordance with the manual entitled James City County Guidelines for Design and Construction of Stormwater Management BMP's. Erosion and sediment control policy and approved plans generally require that at the completion of the project and prior to release of surety, an "as-built" plan prepared by a registered Professional Engineer or Certified Land Surveyor must be provided for the drainage system for the project, including any Best Management Practice (BMP) facilities. In addition, for BMP facilities involving the construction of an impounding structure or dam embankment, certification is required by a Professional Engineer who has inspected the structure during its construction. Currently there are over 20 water quality type BMP's accepted by the County. )

Section 1 - Site Information:

Project Name: OLD COLONY PROFESSIONAL BUILDING  
Structure/BMP Name: DUAL BIORETENTION CELLS  
Project Location: 1130 OLD COLONY LANE  
BMP Location: WEST (BACK) SIDE OF BUILDING  
County Plan No.: SP - 017 - 01

Project Type:  Residential  Business  Commercial  Office  
 Institutional  Industrial  Public  Roadway  Other  
Tax Map/Parcel No.: (48-1)(1-18)  
BMP ID Code (if known): MC049  
Zoning District: B-1  
Land Use: \_\_\_\_\_  
Site Area (sf or acres): 1,283 ACRES

Brief Description of Stormwater Management/BMP Facility: BIORETENTION FILTER  
DUAL BIORETENTION CELLS WITH UNDERDRAIN, SOIL FILTER MEDIA,  
MULCH & LANDSCAPING. CELLS FILTER & DRAIN TO 15" OUTLET  
PIPE WHICH IS CONVEYED INTO 36" Ø BYPASS PIPE SYSTEM.

Nearest Visible Landmark to SWM/BMP Facility: \_\_\_\_\_

Nearest Vertical Ground Control ( if known ):  
 JCC Geodetic Ground Control  USGS  Temporary  Arbitrary  Other  
Station Number or Name: STA. NO. 319  
Datum or Reference Elevation: NGVD 29 ELEV: 101.31  
Control Description: DISK IN CONCRETE  
Control Location from Subject Facility: NW ± 0.6 mi

**Section 2 - Stormwater Management / BMP Facility Construction Information:**

PreConstruction Meeting Held for Construction of SWM/BMP Facility:  Yes  No  Unknown  
 Approx. Construction Start Date for SWM/BMP Facility: 7/10/01  
 Facility Monitored by County Representative during Construction:  Yes  No  Unknown  
 Name of Site Work Contractor Who Constructed Facility: H.B. HANKINS  
 Name of Professional Firm Who Routinely Monitored Construction: FES  
 Date of Completion for SWM/BMP Facility: 7/17/01  
 Date of Record Drawing/Construction Certification Submittal: 6/20/02

( Note: Record Drawing and Construction Certifications are required within thirty (30) days of the completion of Stormwater Management and/or BMP facility construction. Record Drawings and Construction Certifications must be reviewed and approved by the James City County Environmental Division prior to final inspection, acceptance and bond or surety release. )

**Section 3 - Owner / Designer / Contractor Information:**

Owner/Developer: (Note: Site Owner or Applicant responsible for development of the project.)

*ROWE BUILDING & DEV LLC  
 Town Point Center  
 150 Boush St  
 Suite 600  
 NORFOLK, VA 23510*

Name: ROWE & CO.  
 Mailing Address: 803 CYPRESS CHAPEL ROAD  
SUFFOLK, VA 23434  
 Business Phone: 757-986-3259 Fax: 622-9618  
 Contact Person: BRIAN ROWE Title: \_\_\_\_\_

Design Professional: (Note: Professional Engineer or Certified Land Surveyor responsible for the design and preparation of plans and specifications for the Stormwater Management / BMP facility.)

Firm Name: AES CONSULTING ENGINEERS  
 Mailing Address: 5248 OLDE TOWNE ROAD, SUITE 1  
WILLIAMSBURG, VA 23188  
 Business Phone: 757-253-0040  
 Fax: 757-220-8994  
 Responsible Plan Preparer: G. ARCHER MARSTON, III PE  
 Title: VICE PRESIDENT  
 Plan Name: OLD COLONY PROFESSIONAL BUILDING  
 Firm's Project No. 8980-1  
 Plan Date: 6/25/01  
 Sheet No.'s Applicable to SWM/BMP Facility: 4 | 5 | 6 | 7 | 1

(Note: Site Work Contractor directly responsible for construction of the Stormwater Management / BMP facility.)

Name: H.B. HANKINS, INC.  
 Mailing Address: 739 THIMBLE SHOALS BOULEVARD, SUITE 704  
NEWPORT NEWS, VIRGINIA 23606  
 Business Phone: 757-873-2196  
 Fax: 757-873-0943  
 Contact Person: HANK MULLINS  
 Site Foreman/Supervisor: \_\_\_\_\_  
 Specialty Subcontractors & Purpose (for BMP Construction Only): \_\_\_\_\_

STEVE ROWE  
 Project Manager

**ROWE BUILDING  
 & DEVELOPMENT, L.L.C.**

*Call Steve*

Phone: (757) 986-3259  
 Office Fax: (757) 622-8618  
 Home Fax: (757) 923-5169  
 Mobile: (757) 651-8015  
 E-mail: SRowe2499@aol.com

Town Point Center  
 150 Boush St., Suite 600  
 Norfolk, VA 23510

**Section 4 - Professional Certifications:**

Certifying Professionals: (Note: A Registered Professional Engineer or Certified Land Surveyor is responsible for preparation of a Record Drawing, sometimes referred to as an As-Built plan, for the drainage system for the project including any Stormwater Management/BMP Facilities. A Registered Professional Engineer is responsible for the inspection, monitoring and certification of Stormwater Management / BMP facilities during its construction.)

**Record Drawing and Construction Certifications for Stormwater Management / BMP Facilities**

**Record Drawing Certification**

Firm Name: AES CONSULTING ENGINEERS  
 Mailing Address: 5248 OLDE TOWNE ROAD  
SUITE 1, WILLIAMSBURG, VA 23188  
 Business Phone: 757-253-0040  
 Fax: 757-220-8994

Name: MARK A. RICHARDSON, PE  
 Title: Project Manager  
 Signature: *Mark Richardson*  
 Date: 6/20/02

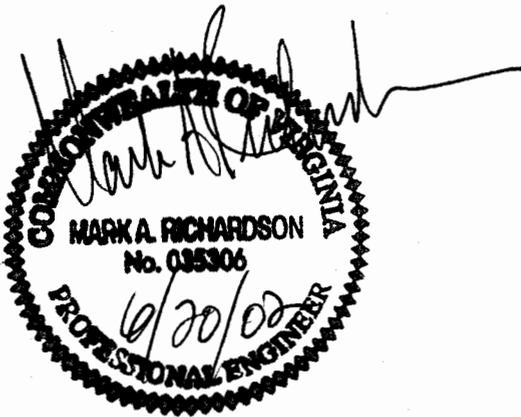
I hereby certify to the best of my knowledge and belief that this record drawing represents the actual condition of the Stormwater Management / BMP facility. The facility appears to conform with the provisions of the approved design plan, specifications and stormwater management plan, except as specifically noted.

**Construction Certification**

Firm Name: \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 Business Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_

Name: \_\_\_\_\_  
 Title: \_\_\_\_\_  
 Signature: \_\_\_\_\_  
 Date: \_\_\_\_\_

I hereby certify to the best of my knowledge and belief that this Stormwater Management/BMP facility was monitored and constructed in accordance with the provisions of the approved design plan, specifications and stormwater management plan, except as specifically noted.



SEE  
 CONST CERT BY  
 FES DATED 6/27/02.

\_\_\_\_\_ ( Seal )

Virginia Registered Professional Engineer  
 or Certified Land Surveyor

\_\_\_\_\_ ( Seal )

Virginia Registered  
 Professional Engineer

**Section 5 - Record Drawing and Construction Certification Requirements and Instructions:**

PreConstruction Meeting - Provides an opportunity to review SWM / BMP facility construction, maintenance and operation plans and address any questions regarding construction and/or monitoring of the structure. The design engineer, certifying professionals (if different), Owner/Applicant, Contractor and County representative(s) are encouraged to attend the preconstruction meeting. Advanced notice to the Environmental Division is requested. Usually, this requirement can be met simultaneously with Erosion and Sediment Control preconstruction meetings held for the project.

A fully completed ***STORMWATER MANAGEMENT / BMP FACILITIES, RECORD DRAWING and CONSTRUCTION CERTIFICATION FORM*** and ***RECORD DRAWING CHECKLIST***. All applicable sections shall be completed in their entirety and certification statements signed and sealed by the registered professional responsible for individual record drawing and/or construction certification.

The Record Drawing shall be prepared by a Registered Professional Engineer or Certified Land Surveyor for the drainage system of the project including any Best Management Practices.

Construction Certification. Construction of Stormwater Management / BMP facilities which contain impoundments, embankments and related engineered appurtenances including subgrade preparation, compacted soils, structural fills, liners, geosynthetics, filters, seepage controls, cutoffs, toe drains, hydraulic flow control structures, etc. shall be visually observed and monitored by a Registered Professional Engineer or his/her authorized representative. The Engineer must certify that the structure, embankment and associated appurtenances were built in accordance with the approved design plan, specifications and stormwater management plan and standard accepted construction practice and shall submit a written certification and/or drawings to the Environmental Division as required. Soil and compaction test reports, concrete test reports, inspection reports, logs and other required construction material or installation documentation may be required by the Environmental Division to substantiate the certification, if specifically requested. The Engineer shall have the authority and responsibility to make minor changes to the approved plan, in coordination with the assigned County inspector, in order to compensate for unsafe or unusual conditions encountered during construction such as those related to bedrock, soils, groundwater, topography, etc. as long as changes do not adversely affect the integrity of the structure(s). Major changes to the approved design plan or structure must be reviewed and approved by the original design professional and the James City County Environmental Division.

Record Drawing and Construction Certifications are required within **thirty (30) days** of the completion of Stormwater Management / BMP facility construction. Submittals must be reviewed and accepted by James City County Environmental Division prior to final inspection, acceptance and bond/surety release.

**Dual Purpose Facilities** - Completion of construction also includes an interim stage for Stormwater Management / BMP facilities which serve dual purpose as temporary sediment basins during construction and as permanent stormwater management / BMP facilities following construction, once development and stabilization are substantially complete. For these dual purpose facilities, construction certification is required once the temporary sediment basin phase of construction is complete. Final record drawing and construction certification of additional permanent components is required once permanent facility construction is complete.

*Interim Construction Certification* is required for those dual purpose embankment-type facilities that are generally ten (10) feet or greater in dam height (\*) and may not be converted, modified or begin function as a permanent SWM / BMP structure for a period generally ranging from six (6) to eighteen (18) months or more from issuance of a Land Disturbance permit for construction.

Interim or final record drawing and construction certifications are not required for temporary sediment basins which are designed and constructed in accordance with current minimum standards and specifications for temporary sediment basins per the Virginia Erosion and Sediment Control Handbook (VESCH); have a temporary service life of less than eighteen (18) months; and will be removed completely once associated disturbed areas are stabilized, unless a distinct hazard to the public's health, safety and welfare is determined by the Environmental Division due to the size or presence of the structure or due to evidence of improper construction.

(\*Note: Dam Height as referenced above is generally defined as the vertical distance from the natural bed of the stream or waterway at the downstream toe of the embankment to the top of the embankment structure in accordance with 4VAC50-20-30, Virginia Impoundment Structure Regulations and the Virginia Dam Safety Program.)

Record Drawings shall provide, at a minimum, all information as shown within these requirements and the attached **RECORD DRAWING CHECKLIST** specific to the type of SWM/BMP facility being constructed. Other additional record data may be formally requested by the James City County Environmental Division. *(Note: Refer to the current edition of the James City County Guidelines for Design and Construction of Stormwater Management BMP's manual for a complete list of acceptable BMP's. Currently there are over 20 acceptable water quality type BMP's accepted by the County.)*

Record Drawings shall consist of blue/black line prints and a reproducible (mylar, sepia, diazo, etc.) set of the approved stormwater management plan including applicable plan views, profiles, sections, details, maintenance plans, etc. as related to the subject SWM / BMP facility. The set shall indicate "**RECORD DRAWING**" in large text in the lower right hand corner of each sheet with record elevations, dimensions and data drawn in a clearly annotated format and/or boxed beside design values. Approved design plan values, dimensions and data shall not be removed or erased. Drawing sheet revision blocks shall be modified as required to indicate record drawing status. Elevations to the nearest 0.1' are sufficiently accurate except where higher accuracy is needed to show positive drainage. Certification statements as shown in Section 4 of the Record Drawing and Construction Certification Form, *or similar forms thereof*, and professional signatures and seals, with dates matching that of the record drawing status in the revision or title block, are also required on all associated record drawing plans, prints or reproducible.

Submission Requirements. Initial and subsequent submissions for review shall consist of a minimum of one (1) blue/black line set for record drawings and one copy of the construction certification documents with appropriate transmittal. Under certain circumstances, it is understood that the record drawing and construction certification submissions may be performed by different professional firms. Therefore, record drawing submission may be in advance of construction certification or vice versa. Upon approval and prior to release of bond/surety, final submission shall include one (1) reproducible set of the record drawings, one (1) blue/black line set of the record drawings and one (1) copy of the construction certification. Also for current and/or future incorporation into the County BMP database and GIS system, it is requested that the record drawings also be submitted to the Environmental Division on a diskette or CD-ROM in an acceptable electronic file format such as \*.dxf, \*.dwg, etc. or in a standard scanned and readable format. The electronic file requirement can be discussed and coordinated with Environmental Division staff at the time of final submission.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

( Key for Checklist is as follows: XX Acceptable    N/A Not Applicable    Inc Incomplete )

**I. Methods and Presentation: ( Required for all Stormwater Management / BMP facilities.)**

- 1. All constructed facilities meet approved design plans, unless otherwise shown. Record information or deviations from approved design plan shown in clearly annotated format and/or boxed beside design values.
- 2. Elevations to the nearest 0.1' unless higher accuracy is needed to show positive drainage.
- 3. All plan sheets labeled with "RECORD DRAWING" in large text in lower right hand corner (Approved County Plan Number and BMP ID Code can be included if known).
- 4. All plan sheet revision blocks modified to indicate date and record drawing status.
- 5. All plan sheets have certification statements and certifying professional's signature and seal.

**II. Minimum Standards: (Required for all Stormwater Management / BMP facilities, as applicable.)**

- 1. All requirements of Section I (Methods and Presentation) apply to this section.
- 2. Plan Views: Show general location, arrangement and dimensions. Location and alignment shall generally match approved design plans.
- 3. Profile or elevations along top or berm of the facility. At a minimum, elevations are required at each end, at intervals not to exceed 50 feet and where low spots may be present. Top of embankment or berm elevations must be no less than design elevation plus any settlement allowances.
- 4. Top widths, berm widths and embankment side slopes.
- 5. Show length, width and depth of facility or grading, contours or spot elevations as required to verify permanent pool and design storage volumes were met or were reasonably close to the approved design. Evaluation of as-built grading, contours, spot elevations, or cross-sections, may be necessary by the professional to ensure approved design configurations, depths and volumes were closely maintained. If grading or elevations are significantly different from the approved plan, the Environmental Division shall be contacted immediately to determine whether the variation is acceptable or whether further evidence will be required. Facilities which do not closely resemble approved plan grades, elevations or configurations may require regrading by the Contractor; check volumetric computations; and/or a check hydraulic routing to ensure approved design water surface elevations, discharges or freeboard were closely maintained.
- N/A 6. Cross-section of the embankment through the principal spillway or outlet barrel. Must extend at least 100 ft. downstream of the pipe outlet or to recorded site property line, whichever is closer. Proper correlation is required between principal spillway (control structure) crest, emergency spillway crest, orifice and weirs and the top of the dam or facility. All elevations and dimensions must reasonably match the design plan or be sequentially relative to each other and the facility must reflect the required design storage volume(s) and/or design depth.
- N/A 7. Profile or elevations along the entire centerline of the emergency spillway. Emergency spillway may be steeper, but no flatter or narrower than design.
- 8. Elevation of the principal spillway crest or outlet crest of the structure.

- ✓ 9. Primary control structure (riser) diameter or dimensions, height, type of material and base size. Indicate provisions for access that are present such as steps, ladders, etc.
- ✓ 10. Dimensions, locations and elevations of outlet orifices, weirs, slots and drains.
- N/A 11. Type and size of anti-vortex and trash rack device. Height, diameter, dimensions, bar spacings (if applicable) and elevations relative to the principal spillway crest. Indicate if lockable hatch is present or not.
- N/A 12. Type, location, size and number of anti-seep collars or documentation of other methods utilized for seepage control. **May need to obtain this information during construction.**
- N/A 13. Top of impervious core embankment, core trench limits and elevation of cut-off trench bottom. **May need to obtain this information during construction.**
- ✓ 14. Elevation of the principal spillway barrel (outlet pipe) inlet and outlet invert.
- ✓ 15. Outlet barrel diameter, length, slope, type and thickness class of material and type of flared end sections, headwall or endwall.
- N/A 16. Outfall protection dimension, type and depth of rock and if underlain filter fabric is present.
- ✓ 17. BMP interior and periphery landscaping zones conform with arrangements and requirements of the approved design plan.
- ✓ 18. Maintenance plan taken from approved design plan transposed onto record drawing set.
- N/A 19. Fencing location and type, if applicable to facility.
- ✓ 20. BMP vicinity properly cleaned of stockpiles and construction debris.
- ✓ 21. No visual signs of erosion or channel degradation immediately downstream of facility.
- ✓ 22. Any other information formally requested by the Environmental Division specific to the constructed SWM/BMP facility.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

( Key for Checklist is as follows: XX Acceptable    N/A Not Applicable    Inc Incomplete )

**III.    Group A - Wet Ponds ( Includes A-1 Small Wet Ponds; A-2 Wet Ponds; A-3 Wet Ext Det Ponds. )**

- A1.    All requirements of Section II, Minimum Standards, apply to Group A facilities.
- A2.    Principal spillway consists of reinforced concrete pipe with O-Ring gaskets for watertight joint construction.
- A3.    Sediment forebays or pretreatment devices provided at inlets to pond. Generally 4 to 6 ft. deep.
- A4.    Access for maintenance and equipment is provided to the forebay(s). Access corridors are at least 12 ft. wide, have a maximum slope of 15 percent and are adequately stabilized to withstand heavy equipment or vehicle use.
- A5.    Adequate fixed vertical sediment depth markers installed in the forebay(s) for future sediment monitoring purposes.
- A6.    Pond liner (if required) provided. Either clay liners, polyliners, bentonite liners or use of chemical soil additives based on requirements of the approved plan.
- A7.    Minimum 6 percent slope safety bench extending a minimum of 15 feet outward from normal pool edge and/or an aquatic bench extending a minimum of 10 feet inward from the normal shoreline with a maximum depth of 12 inches below the normal pool elevation, if applicable, per the approved design plans. (Note: Safety benches may be waived if pond side slopes are no steeper than 4H:1V).
- A8.    No trees are present within a zone 15 feet around the embankment toe and 25 feet from the principal spillway structure.
- A9.    Wet permanent pool, typically 3 to 6 feet deep, is provided and maintains level within facility.
- A10.    Low flow orifice has a non-clogging mechanism.
- A11.    A pond drain pipe with valve was provided.
- A12.    Pond side slopes are not steeper than 3H:1V, unless approved plan allowed for steeper slope.
- A13.    End walls above barrels (outlet pipe) greater than 48 inch in diameter are fenced to prevent a fall hazard.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

*( Key for Checklist is as follows: **XX** Acceptable    **N/A** Not Applicable    **Inc** Incomplete )*

**IV.    Group B - Wetlands**    *( Includes B-1 Shallow Marsh; B-2 Ext Det Shallow Wetlands; B-3 Pond Wetland System and B-4 Pocket Wetland )*

- B1.    Same requirements as Group A Wet Ponds.
- B2.    Minimum 2:1 length to width flow path provided across the facility.
- B3.    Micropool provided at or around outlet from BMP (generally 3 to 6 ft. deep).
- B4.    Wetland type landscaping provided in accordance with approved plan. Includes correct pondscaping zones, plant species, planting arrangements, wetland beds, etc. Wetland plants include 5 to 7 emergent wetland species. Individual plants at 18 inches on center in clumps.
- B5.    Adequate wetland buffer provided (Typically 25 ft. outward from maximum design water surface elevation and 15 ft. setback to structures).
- B6.    No more than one-half (½) of the wetland surface area is planted.
- B7.    Topsoil or wetland mulch provided to support vigorous growth of wetland plants.
- B8.    Planting zones staked or flagged in field and locations subsequently established by appropriate field surveying methods for record drawing presentation.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

( Key for Checklist is as follows: **XX** Acceptable    **N/A** Not Applicable    **Inc** Incomplete )

**V.    Group C - Infiltration Practices**                      ( Includes C-1 Infiltration Trench; C-2 Infiltration Trench;  
C-3 Infiltration Basin; and C-4 Infiltration Basin )

- \_\_\_\_\_ C1.    All requirements of Section II, Minimum Standards, apply to Group C facilities as applicable.
- \_\_\_\_\_ C2.    Facility is not located on fill slopes or on natural ground in excess of six (6) percent.
- \_\_\_\_\_ C3.    Pretreatment devices provided prior to entry into the infiltration facility. Acceptable pretreatment devices include sediment forebays, sediment basins, sediment traps, sump pits or inlets, grass channels, plunge pools or other acceptable measures.
- \_\_\_\_\_ C4.    Three (3) or more of the following pretreatment devices provided to protect long term integrity of structure: grass channel; grass filter strip; bottom sand layer; upper filter fabric layer; use of washed bank run gravel aggregate.
- \_\_\_\_\_ C5.    Sides of infiltration practice lined with filter fabric.
- \_\_\_\_\_ C6.    Facility was not used for erosion and sediment control purposes and sediment was prevented from entering the facility to the greatest extent possible during construction.
- \_\_\_\_\_ C7.    Stabilization and acceptable vegetative cover established over contributing drainage area prior to conveyance of stormwater to the facility.
- \_\_\_\_\_ C8.    Minimum one hundred (100) foot separation horizontally from any known water supply well and minimum one hundred (100) foot separation upslope from any building.
- \_\_\_\_\_ C9.    Minimum twenty-five (25) foot separation down gradient from any structure.
- \_\_\_\_\_ C10.    Stormwater outfalls provided for overflow associated with larger design storms.
- \_\_\_\_\_ C11.    No visual signs of erosion or channel degradation immediately downstream of facility.
- \_\_\_\_\_ C12.    Facility does not currently cause any apparent surface or subsurface water problems to downgrade properties.
- \_\_\_\_\_ C13.    Observation well provided.
- \_\_\_\_\_ C14.    Adequate, direct access provided to the facility for future maintenance, operation and inspection.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

( Key for Checklist is as follows: **XX** Acceptable    **N/A** Not Applicable    **Inc** Incomplete )

**VI.    Group D - Filtering Systems**    ( Includes D-1 Bioretention Cells; D-2 Surface Sand Filters; D-3 Underground Sand Filters; D-4 Perimeter Sand Filters; D-5 Organic Filters; and D-6 Pocket Sand Filters )

- D1.    All requirements of Section II, Minimum Standards, apply to Group D facilities.
- D2.    Sediment pretreatment devices provided.
- D3.    For D-1 BMPs (Bioretention Cells), pretreatment consisting of a grass filter strip below level spreader (deflector); a gravel diaphragm; and mulch and planting soil layers were provided.
- D4.    For D-1 BMPs (Bioretention Cells), plantings consist of native plant species; vegetation provided was based on zones of hydric tolerances; trees and understory of shrubs and herbaceous materials were provided; woody vegetation is absent from inflow locations; and trees are located around facility perimeter.
- D5.    Facility was not used for erosion and sediment control purposes and sediment was prevented from entering the facility to the greatest extent possible during construction.
- D6.    No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed .
- D7.    Filtering system is off-line from storm drainage conveyance system.
- D8.    Overflow outlet has adequate erosion protection.
- D9.    Deflector, diversion, flow splitter or regulator structure provided to divert the water quality volume to the filtering structure.
- D10.    Minimum four (4) inch perforated underdrain provided in a clean aggregate envelope layer beneath the facility.
- D11.    Minimum fifty (50) foot separation from any slope fifteen (15) percent or greater. Minimum one hundred (100) foot separation horizontally from any known water supply well. Minimum one hundred (100) foot separation upslope and twenty-five (25) foot separation downslope from any building.
- D12.    Stabilization and acceptable vegetative cover established over contributing drainage area prior to conveyance of stormwater to the facility.
- D13.    No visual signs of erosion or channel degradation immediately downstream of facility.
- D14.    Adequate, direct access provided to the pretreatment area and/or filter bed for future maintenance.

**STORMWATER MANAGEMENT / BMP FACILITIES  
AS-BUILT PLAN CHECKLIST**

( Key for Checklist is as follows: XX Acceptable    N/A Not Applicable    Inc Incomplete )

**VII.    Group E - Open Channel Systems    ( Includes E-1 Wet Swales (Check Dams); E-2 Dry Swales; and E-3 Biofilters )**

- \_\_\_\_\_ E1.    All requirements of Section II, Minimum Standards, apply to Group E facilities as applicable.
- \_\_\_\_\_ E2.    Open channel system has constructed longitudinal slope of less than four (4) percent.
- \_\_\_\_\_ E3.    No visual signs of erosion in the open channel system's soil and/or vegetative cover.
- \_\_\_\_\_ E4.    Open channel side slopes are no steeper than 2H:1V at any location. Preferred channel sideslope is 3H:1V or flatter.
- \_\_\_\_\_ E5.    No visual signs of ponding are present at any location in the open channel system, except at rock check dam locations for E-1 systems (Wet Swales).
- \_\_\_\_\_ E6.    For E-2 BMPs (Dry Swales), an underdrain system was provided.
- \_\_\_\_\_ E7.    Treated timber or rock check dams provided as pretreatment devices for the open channel system.
- \_\_\_\_\_ E8.    Gravel diaphragm provided in areas where lateral sheet flow from impervious surfaces are directly connected to the open channel system.
- \_\_\_\_\_ E9.    Grass cover/stabilization in the open channel system appears adaptable to the specific soils and hydric conditions for the site and along the channel system.
- \_\_\_\_\_ E10.    Open channel system areas with grass covers higher than four (4) to six (6) inches were properly mowed.
- \_\_\_\_\_ E11.    Facility was not used for erosion and sediment control purposes and sediment was prevented from entering the facility to the greatest extent possible during construction.
- \_\_\_\_\_ E12.    No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed and no adverse affects to the function of the facility are anticipated.
- \_\_\_\_\_ E13.    For E-3 BMPs (Biofilters), the bottom width is six (6) feet maximum at any location.
- \_\_\_\_\_ E14.    For E-3 BMPs (Biofilters), sideslopes are 3H:1V maximum at any location.
- \_\_\_\_\_ E15.    For E-3 BMPs (Biofilters), the constructed channel slope is less than or equal to three (3) percent at any location.
- \_\_\_\_\_ E16.    For E-3 BMPs (Biofilters), the constructed grass channel is approximately equivalent to the constructed roadway length.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

( Key for Checklist is as follows: XX Acceptable    N/A Not Applicable    Inc Incomplete )

**VIII. Group F - Extended Dry Detention**    ( Includes F-1 Timber Walls; and F-2 Dry Extended Detention with Forebay )

- \_\_\_\_\_ F1.    All requirements of Section II, Minimum Standards, apply to Group F facilities.
- \_\_\_\_\_ F2.    Basin bottom has positive slope and drainage from all basin inflow points to the riser (or outflow) location.
- \_\_\_\_\_ F3.    Timber wall BMP used in intermittent stream only. (ie. Prohibited in perennial streams.)
- \_\_\_\_\_ F4.    Forebay provided approximately 20 ft. upstream of the facility. Forebays generally 4 to 6 feet in depth.
- \_\_\_\_\_ F5.    A reverse slope pipe, vertical stand pipe or mini-barrel and riser was provided to prevent clogging.
- \_\_\_\_\_ F6.    Principal spillway and outlet barrel provided consisting of reinforced concrete pipe with O-Ring gaskets for watertight joint construction.
- \_\_\_\_\_ F7.    Mini-barrel and riser, if used, contains a removable trash rack to reduce clogging.
- \_\_\_\_\_ F8.    Low flow orifice, if used, has a minimum diameter of three (3) inches or two (2) inches if internal orifice control was utilized and a small, cage type external trash rack.
- \_\_\_\_\_ F9.    Timbers properly reinforced or concrete footing provided if soil conditions were prohibitive.
- \_\_\_\_\_ F10.    Timber wall cross members extended to a minimum depth of two (2) feet below ground elevation.
- \_\_\_\_\_ F11.    Protection against erosion and scour from the low flow orifice and weir-flow trajectory provided.
- \_\_\_\_\_ F12.    Stilling basin or standard outlet protection provided at principal spillway outlet.
- \_\_\_\_\_ F13.    Adequate, direct access provided to the facility. Access corridor to facility is at least ten (10) feet wide, slope is less than twenty (20) percent and appropriate stabilization provided for equipment and vehicle use. Access extends to forebay, standpipe and timber wall, as applicable.
- \_\_\_\_\_ F14.    No visual signs of undercutting of timber walls or clogging of the low orifice were present.
- \_\_\_\_\_ F15.    No visual signs of erosion or channel degradation immediately downstream of facility.
- \_\_\_\_\_ F16.    No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed and no adverse affects to the function of the facility are anticipated.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

( Key for Checklist is as follows: XX Acceptable    N/A Not Applicable    Inc Incomplete )

**IX.    Group G - Open Spaces**            ( Includes All Open Space Types G-1; G-2; and G-3 )

- G1.    All requirements of Section II, Minimum Standards, apply to Group G facilities as applicable.
- G2.    Constructed impervious areas appear to conform with locations indicated on the approved plan and appear less than sixty (60) percent impervious in accordance with the requirements of the James City County Chesapeake Bay Preservation Ordinance.
- G3.    Dedicated open space areas are in undisturbed common areas, conservation easements or are protected by other enforceable instruments that ensures perpetual protection.
- G4.    Provisions included to clearly specify how the natural vegetated areas utilized as dedicated open space will be managed and field identified (marked).
- G5.    Adequate protection measures were implemented during construction to protect the defined dedicated open space areas.
- G6.    Dedicated open space areas were not disturbed during construction (ie. cleared, grubbed or graded).

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

( Key for Checklist is as follows: XX Acceptable    N/A Not Applicable    Inc Incomplete )

**X.    Storm Drainage Systems (Associated with BMP's Only)**

*( Includes all incidental stormwater drainage conveyance systems associated with SWM/BMP facilities such as onsite or offsite storm drains, open channels, inlets, manholes, junctions, outlet protections, deflectors, etc. These facilities are external to the treatment function of, but are directly associated with drainage to and/or from a constructed SWM/BMP facility. The intent of this portion of the certification is to accurately identify the type and quantity of inflow or outflow points associated with the facility for future reference. The Professional may use his/her own discretion to determine inclusive facilities to meet the intent of this section. As a general rule, storm drainage systems would include incidental facilities to the nearest access structure upslope or downslope from the normal physical limits of the facility or 800 feet of storm drainage conveyance system length, whichever is less. )*

- \_\_\_\_\_ SD1.    All requirements of Section II, Minimum Standards, apply to Storm Drainage Systems.
- \_\_\_\_\_ SD2.    Horizontal location of all pipe and structures relative to the SWM/BMP facility.
- \_\_\_\_\_ SD3.    Type, top elevation and invert elevation of all access type structures (inlets, manholes, etc.).
- \_\_\_\_\_ SD4.    Material type, size or diameter, class, invert elevations, lengths and slopes for all pipe segments.
- \_\_\_\_\_ SD5.    Class, length, width and depth of riprap and outlet protections or dimensions of special energy dissipation structures.

**XII.    Other Systems**

*( Includes any non-typical, specialty, manufactured or innovative stormwater management/BMP practices or systems generally accepted for use as or in conjunction with other acceptable stormwater management / BMP practices. Requires evidence of prior satisfactory industry use and prior Environmental Division approval, waiver or exception .)*

- \_\_\_\_\_ O1.    All requirements of Section II, Minimum Standards, apply to this section.
- \_\_\_\_\_ O2.    Certification criteria to be determined on a case-by-case basis by the Environmental Division specific to the proposed SWM/BMP facility.

**STORMWATER MANAGEMENT / BMP FACILITIES  
RECORD DRAWING CHECKLIST**

**XIII. References**    *( The James City County Record Drawing and Construction Certification Forms and Checklists for Stormwater Management / BMP facilities were developed using the following sources and references. )*

- Baltimore County, Maryland Soil Conservation District, As-Built Stormwater Management Pond Checklist.
- James City County, Virginia, Guidelines for Design and Construction of Stormwater Management BMP's (October 1999).
- James City County, Virginia, Stormwater Detention/Retention Basin Design Checklist and Erosion and Sediment Control and Stormwater Management Design Plan Checklists.
- James City County Stormwater Policy Framework, Final Report of the James City County BMP Policy Project, October 1998, The Center for Watershed Protection.
- Prince Georges County, Maryland, As-Built Requirements Retention or Detention Pond/Basin.
- Prince William County, Virginia, Stormwater Management Fact Sheet.
- Stafford County, Virginia, As-Built Plan Checklist.
- Stormwater Management Design Manual, NRCS Maryland Code No. 378, Pond Standards and Specifications.
- USEPA/Watershed Management Institute, Stormwater Management Inspection Forms.
- Virginia Impounding Structure Regulations (Dam Safety), Department of Conservation & Recreation, 1997.
- Virginia Erosion and Sediment Control Handbook, Third Edition 1992, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation.
- Virginia Stormwater Management Handbook, 1999 edition, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation.

File: Shared\SWMPProg\BMP\Certif\RDCC.wpd

# FAX

Date \_\_\_\_\_  
Number of pages including cover sheet \_\_\_\_\_

TO: *Scott Thomas*  
  
Phone \_\_\_\_\_  
Fax Phone *259-4032*

FROM: **Hank Mullins**  
**H.B. Hankins, Inc.**  
**739 Thimble Shoals Blvd.**  
**Suite 704**  
**Newport News, VA 23606**  
  
Work Phone (757) 873-2196  
Fax Phone (757) 873-0943

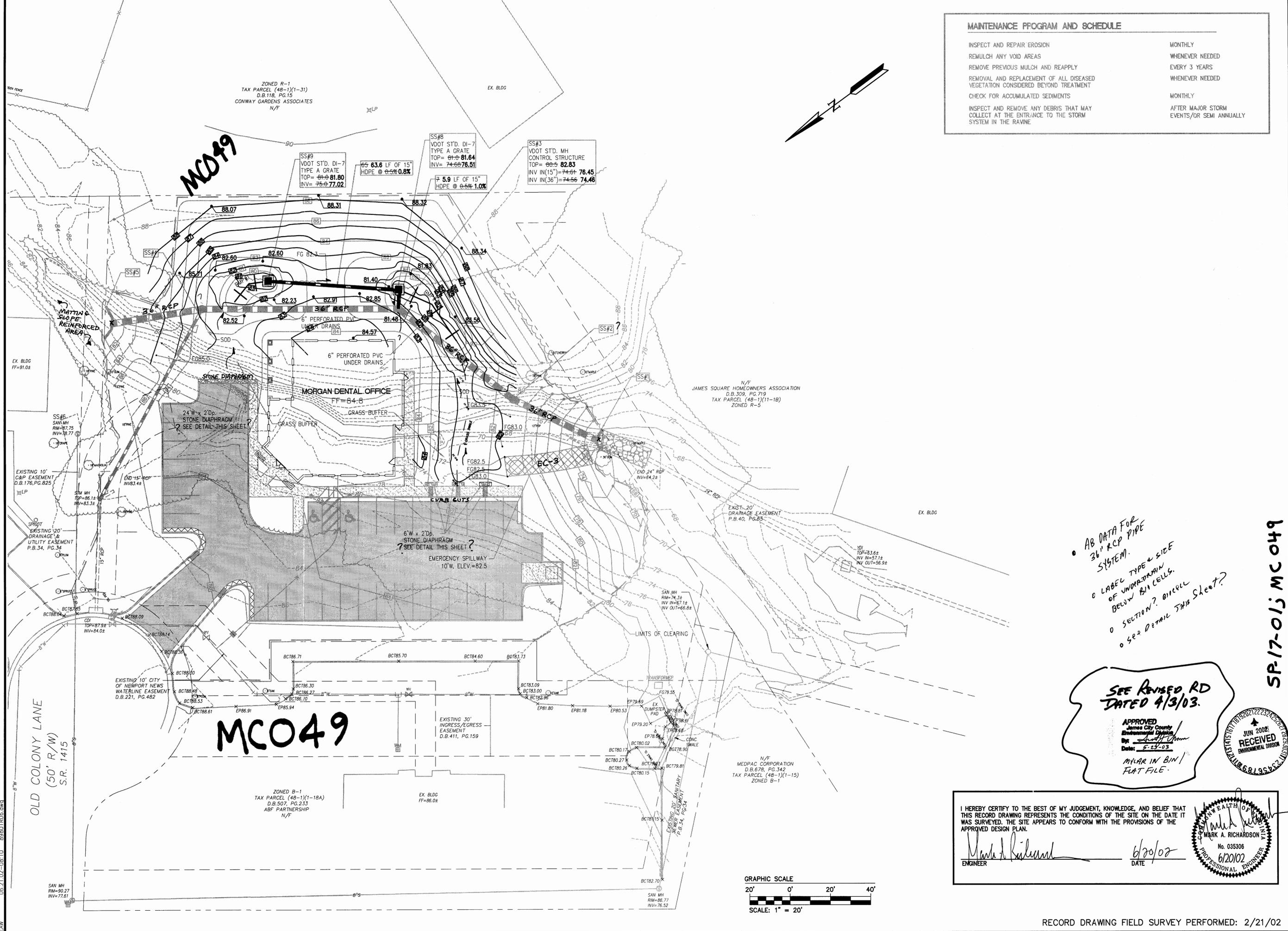
REMARKS:  Urgent  For your review  Reply ASAP  Please Comment

*Dear Scott,*  
*Please find a copy of F.E.S.'s letter certifying the material and installation of the B.M.P.s at Old Colony Professional Bld. Please call me if you have any questions.*

*Thanks,  
Hank Mullins*



*CONSTRUCTION CERT  
FOR BIORETENTION  
SOILS. NO FULL CC.  
OK *[Signature]*  
03-01-02*



**MAINTENANCE PROGRAM AND SCHEDULE**

INSPECT AND REPAIR EROSION	MONTHLY
REMULCH ANY VOID AREAS	WHENEVER NEEDED
REMOVE PREVIOUS MULCH AND REAPPLY	EVERY 3 YEARS
REMOVAL AND REPLACEMENT OF ALL DISEASED VEGETATION CONSIDERED BEYOND TREATMENT	WHENEVER NEEDED
CHECK FOR ACCUMULATED SEDIMENTS	MONTHLY
INSPECT AND REMOVE ANY DEBRIS THAT MAY COLLECT AT THE ENTRANCE TO THE STORM SYSTEM IN THE RAVINE	AFTER MAJOR STORM EVENTS/OR SEMI ANNUALLY

NO.	DATE	REVISION / COMMENT / NOTE
4	6/20/02	RECORD DRAWING
3	6/25/01	REVISED PER JCS COMMENTS
2	6/11/01	REVISED PER JAMES CITY COUNTY COMMENTS
1	5/03/01	REVISED PER JAMES CITY COUNTY COMMENTS
NO.		



5248 Old Towne Road, Suite 1  
 Williamsburg, Virginia 23188  
 (757) 253-0040  
 Fax (757) 220-8994



JAMESTOWN DISTRICT JAMES CITY COUNTY VIRGINIA

RECORD DRAWING  
 OLD COLONY PROFESSIONAL BUILDING

Designed MAR	Drawn RMK
Scale 1"=20'	Date 6/20/02
Project No. 8980-1	
Drawing No. 1 OF 1	

• AB DATA FOR 36" RCP PIPE SYSTEM.  
 • LABEL TYPE & SIZE OF UNDERDRAIN BELOW BI CELLS.  
 • SECTION? BRICELL  
 • SEE DETAIL THIS SHEET?

SEE REVISED RD DATED 4/3/03.

APPROVED  
 James City County Environmental Division  
 By: *[Signature]*  
 Date: 5-23-03  
 MLAR IN BIN / FLAT FILE.

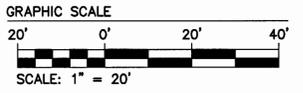


I HEREBY CERTIFY TO THE BEST OF MY JUDGEMENT, KNOWLEDGE, AND BELIEF THAT THIS RECORD DRAWING REPRESENTS THE CONDITIONS OF THE SITE ON THE DATE IT WAS SURVEYED. THE SITE APPEARS TO CONFORM WITH THE PROVISIONS OF THE APPROVED DESIGN PLAN.

*[Signature]*  
 ENGINEER

6/20/02  
 DATE

NO. 035306  
 6/20/02  
 PROFESSIONAL ENGINEER



RECORD DRAWING FIELD SURVEY PERFORMED: 2/21/02

06.21.02-08.10 89801.R06.dwg

**Record Drawing/Construction Certification Submittal for a BMP Facility**

✓ JOE  
6-26-02

Date: 6/25/02

- Inspector:
- Pat Menichino
  - Gerry Lewis
  - Beth Davis
  - Mike Woolson
  - Joe Buchite
  - Other: \_\_\_\_\_

Project: OLD COLONY PROFESSIONAL BLDG. (MORGAN DENTAL)  
BMP Facility: DUAL BIORETENTION CELLS  
Plan No. SP-17-01  
BMP ID Code: MC 049

I have received a transmittal for a  Record Drawing and  Construction Certification for the above referenced facility on June 21 '02. Prior to full engineering review of these items and a field inspection, I am first forwarding the items to you to cursory review in case any major field changes were performed that I should be aware of and/or to ensure the record drawing accurately portrays what you saw in the field. Please review the drawing and return to me promptly so I can proceed with the review for certification purposes.

During my review, I will look at issues related to the BMP and its primary inflow and outflow conveyance systems, and will make comment in the following areas: Record Drawing (RD), Construction Certification (CC) and Construction-Related (CR) punch list items. If you have any other related non-BMP site issues such as erosion, stabilization, removal of erosion & sediment controls, etc. that are not related to the BMP, I can easily add these items to any comment letter that I may forward to the Owner/Engineer. Let me know if any outstanding site issues remain.

If I don't hear from you I will ask you if any other outstanding issues remain before I forward any letters to the Owner/Engineer.

Scott

THIS IS ONLY COPY OF DWG  
RETURN TO ME.

SWMPProg\BMP\ConInsp\Insp.trans

**AES CONSULTING ENGINEERS**

Engineering, Surveying and Planning

5248 Olde Towne Road, Suite 1  
WILLIAMSBURG, VIRGINIA 23188

**LETTER OF TRANSMITTAL**

(757) 253-0040  
FAX (757) 220-8994

DATE 6/21/02	JOB NO. 8980-01
ATTENTION	
RE: OLD COLONY PROFESSIONAL BUILDING RECORD DRAWING	

TO JAMES CITY COUNTY  
ENVIRONMENTAL DIVISION

WE ARE SENDING YOU  Attached  Under separate cover via \_\_\_\_\_ the following \_\_\_\_\_

Shop drawings  Prints  Plans  Samples

Copy of letter  Change order  \_\_\_\_\_



COPIES	DATE	NO.	DESCRIPTION
1	6/20/02	1	RECORD DRAWING
1	6/20/02		JCC SWM/BMP RECORD DRAWING CERTIFICATION

SP-17-01; MC049

THESE ARE TRANSMITTED as checked below:

- For approval
- For your use
- As requested
- For review and comment
- FOR BIDS DUE \_\_\_\_\_
- Approved as submitted
- Approved as noted
- Returned for corrections
- \_\_\_\_\_
- Resubmit \_\_\_\_\_ copies for approval
- Submit \_\_\_\_\_ copies for distribution
- Return \_\_\_\_\_ corrected prints
- PRINTS RETURNED AFTER LOAN TO US

REMARKS 48101000/S  
1130 OLD COLONY LANE  
COASTAL COLONIAL DEV LLC  
329 COLONY TRAIL  
LANEXA, VA. 23089  
1.27AC.  
B1  
PARCEL C OLD COLONY

ilm # 01001090. 6/21/01

COPY TO BRIAN ROWE 1 COPY SIGNED: Robert D. Mary



**FOUNDATION ENGINEERING SCIENCE, INC.**

- Geotechnical Engineering [Drilling; Foundation, Retaining Wall & Pavement Design]
- Environmental Management [Phase I & II, Asbestos and Lead Paint Sampling]
- Construction Materials Testing & Inspection [Quality Control & Quality Assurance]
- Foundation & Pavement Problems Evaluations & Remediations
- Value Engineering During Design & Construction

Mr. Brian Rowe  
**Brian Rowe and Company**  
 803 Cypress Chapel Road  
 Suffolk, Virginia 23434



February 18, 2002

Re: Composite Soils Evaluation Report  
 Morgan Dental Building  
 James City County, Virginia  
 FES Report No. N277.023

Dear Mr. Rowe:

Pursuant to the request of Mr. Hank Mullins with H. B. Hankins, Inc. an experienced Professional Engineer with Foundation Engineering Science, Inc. (FES), visited the project site on February 6, 2002. The specific purpose of this visit was to observe and inspect the composite soils placed underneath the sawed grass and mulched hard wood at the rear portion of the building within the Storm Water Management area for Morgan Dental Building located in James City County, Virginia.

**1.0 SITE OBSERVATIONS**

Prior to our visit the contractor reported that approximately sixty (60) cubic yards of mixed soils were prepared and proposed to be placed underneath the sawed grass and mulched hard wood within the rear portion of the building at the Storm Water Management area. The contractor also reported that the prepared soils consisted of approximately fifty (50) percent washed sand (SP) or (SP-SM), thirty (30) percent composite soil and twenty (20) percent Topsoil. ← THIS MEETS PLAN SPECS. OK

One (1) sample was obtained for laboratory testing and classification. The bulk sample was received in our laboratory for classification and testing. The laboratory testing program consisted of performing natural moisture content determination [ASTM D-2216], and grain-size determination [Passing #200 Sieve, ASTM D-1140]. The laboratory testing program was performed in general accordance with ASTM and VTM test procedures. The laboratory test results are shown in tabular format below.

Sample NO.	APPROX DEPTH (FEET)	DESCRIPTION & CLASSIFICATION [USCS, ASTM D-2487]	NATURAL MOISTURE CONTENT (%)	PASSING # 200 SIEVE (%)
1	0.0	Dark gray to gray silty SAND (SM) with trace of fine roots and Topsoil	11.5	36.8

11843 B CANON BOULEVARD ► NEWPORT NEWS, VIRGINIA 23606 ► PHONE: 757-873-4113 FAX: 757-873-4114

Composite Soils Evaluation Report  
Morgan Dental Building  
James City County, Virginia  
FES Report No. N277.023

**FES**

During our site visit, it appeared that the landscape contractor covered the majority of the areas located at the rear portion of the building within the Storm Water Management area. The areas that remained partially uncovered with sawed grass were visually inspected.

## 2.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our site observations, professional opinion, and engineering judgment, we offer the following conclusions and recommendations.

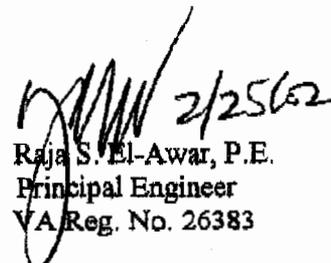
1. Based on the laboratory test results and our visual inspection, it appeared that the tested and observed mixture met the composite soils specified by the contractor for a mixture of clean sand (SP) and/or sand with trace silt (SP-SM), and topsoil.
2. The soils inspected within the partially uncovered areas and located at the rear portion of the building appeared to meet the soil sample that was previously obtained by FES.
3. The soil observed consisted of dark gray to gray silty sand (SM) with trace of fine roots and Topsoil.

FES appreciates the opportunity to be of service to **Brian Rowe and Company** on this important project and looks forward to its successful completion. Should you have any questions regarding this report, please do not hesitate to contact the undersigned.

Respectfully submitted,

**FOUNDATION ENGINEERING SCIENCE, INC.**

  
Mohammad Sharbazzery, P. E.  
Senior Project Engineer  
VA Reg. No. 34140

  
Raja S. El-Awar, P.E.  
Principal Engineer  
VA Reg. No. 26383

XCopies: (1) Client

C:\company\oldfile\2001\geotech\N277.023



# DEVELOPMENT MANAGEMENT

101-E MOUNTS BAY ROAD, P.O. BOX 8784, WILLIAMSBURG, VIRGINIA 23187-8784  
(757) 253-6671 Fax: (757) 253-6850 E-MAIL: devtman@james-city.va.us

CODE COMPLIANCE  
(757) 253-6626  
codecomp@james-city.va.us

ENVIRONMENTAL DIVISION  
(757) 253-6670  
environ@james-city.va.us

PLANNING  
(757) 253-6685  
planning@james-city.va.us

COUNTY ENGINEER  
(757) 253-6678  
INTEGRATED PEST MANAGEMENT  
(757) 253-2620

July 3, 2002

Mr. Steve Rowe  
Rowe Building & Development, LLC  
150 Boush St., Suite 600  
Norfolk, Va. 23510

*Reinspected several times for tour/photo purposes*

Re: Old Colony Professional Building (form. Morgan Dental)  
County Plan No. SP-17-01  
Bioretention Facilities  
County BMP ID Code: MC 049

Dear Mr. Rowe:

The Environmental Division has reviewed certification information as forwarded to our office for the stormwater management facility at the above referenced project. Certification information included a record drawing dated June 20<sup>th</sup> 2002 and a construction certification dated June 27<sup>th</sup> 2002 for two onsite bioretention cells situated at the back (west) of the main site building.

Based on our review of the project and a concurrent field inspection as performed on July 3<sup>rd</sup> 2002, the following items must be addressed prior to release of the developer's surety instrument for the stormwater management/BMP facility at the site:

Construction Certification:

- 1. The construction certification dated June 27<sup>th</sup> 2002 and the supplemental soil mixture certification dated February 18<sup>th</sup> 2002 are **satisfactory**.

Record Drawing:

- 2. As-built data is required for the 36-inch RCP storm drain culvert pipe system (and manholes) which bypasses drainage from the natural channel through the site. This information was previously requested via plan review comment # 3 by the Environmental Division dated March 27<sup>th</sup> 2002 (Plan No. SP-17-01).
- 3. Label the size and type of underdrains used beneath the two bioretention cells.
- 4. The drawing indicates "see detail this sheet" for the pretreatment stone diaphragms situated at the east and west sides of the building where the parking lot meets sodded grassed areas. This information could not be found on the record drawing.
- 5. If possible, add the following County identifiers to the lower right hand corner of the record drawing: County Plan Number SP-17-01 and BMP ID Code: MC 049. Also, if possible, add the bioretention filter detail from Sheet 6 of the approved plan set onto the record drawing. This detail shows the proper configuration of the mulch, soil and underdrain layers beneath the bioretention cells for proper future inspection and maintenance purposes.

✓  
OK

✓  
OK  
RECEIVED  
5-23-03  
OK  
5-23-03

✓

*mm*  
*28*

Construction - Related Items:

6. A two (2) inch minimum depth of mulch was required on the entire surface of both bioretention cells. Our inspection revealed that some areas within both bioretention cells had very little or no mulch covering. Add mulch as required to achieve minimum required depth.
7. The planting plan within each of the two bioretention cells does not appear to meet Minimum Standard 3.11 of the Virginia Stormwater Management Handbook (VSMH). This handbook was a clear guidance and reference document for construction of the cells per Sheet 6 of the approved plan. It appears that only tree and shrub species are present and herbaceous groundcover plant species were not present. Ground cover, in conjunction with the mulch layer, is important for pollutant removal and to prevent erosion of the mulch and soil layers. Secondly, a minimum of three species of trees and three species of shrubs are required. Refer to pages 3.11-16 through 3.11-38 of the VSMH.
8. A small ponding (puddle) 5 ft. wide by 5 ft. long was present in the back portion of the second (south) bioretention cell. Cell 2 is nearest the southeast corner of the building. It appeared this ponding area was formed by irrigation activity at the site. Although the rest of the cell surface was dry, ponding at this location may be indicative of compaction of surface layers of the filtering soil media, probably due to landscaping and other site activities which followed construction of the bioretention cell. The surface of this area should be loosely scarified to a sufficient depth to promote filtration of runoff through the cell's permeable soil media. (Note: This only pertains to the back portion of Cell 2).
9. Clean and remove all debris and trash between the outfall end of the 36-inch diameter storm drain pipe and the existing 24-inch pipe entrance at James Square. This is at the base of the fill slope at the south end of the site.

Once this work is satisfactorily completed, contact our office appropriately. We can then proceed with final release of the surety on the project. One reproducible and one blue/black line set of the record drawings will be required once the above items are adequately addressed.

Please contact me at 757-253-6639 or the assigned Environmental Division inspector, Joe Buchite at 757-253-6643 if you have any further comments or questions.

Sincerely,



Scott J. Thomas, P.E.  
Civil Engineer  
Environmental Division

cc: Mark Richardson, AES - via fax  
Raja Elawar, FES - via fax  
H.B. Hankins - via fax

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# DEVELOPMENT MANAGEMENT

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COUNTY ENGINEER  
(757) 253-6678  
INTEGRATED PEST MANAGEMENT  
(757) 253-2620

July 3, 2002

Mr. Steve Rowe  
Rowe Building & Development, LLC  
150 Boush St., Suite 600  
Norfolk, Va. 23510

Re: Old Colony Professional Building (form. Morgan Dental)  
County Plan No. SP-17-01  
Bioretention Facilities  
County BMP ID Code: MC 049

Dear Mr. Rowe:

The Environmental Division has reviewed certification information as forwarded to our office for the stormwater management facility at the above referenced project. Certification information included a record drawing dated June 20<sup>th</sup> 2002 and a construction certification dated June 27<sup>th</sup> 2002 for two onsite bioretention cells situated at the back (west) of the main site building.

Based on our review of the project and a concurrent field inspection as performed on July 3<sup>rd</sup> 2002, the following items must be addressed prior to release of the developer's surety instrument for the stormwater management/BMP facility at the site:

**Construction Certification:**

1. The construction certification dated June 27<sup>th</sup> 2002 and the supplemental soil mixture certification dated February 18<sup>th</sup> 2002 are **satisfactory**.

**Record Drawing:**

2. As-built data is required for the 36-inch RCP storm drain culvert pipe system (and manholes) which bypasses drainage from the natural channel through the site. This information was previously requested via plan review comment # 3 by the Environmental Division dated March 27<sup>th</sup> 2002 (Plan No. SP-17-01).
3. Label the size and type of underdrains used beneath the two bioretention cells.
4. The drawing indicates "see detail this sheet" for the pretreatment stone diaphragms situated at the east and west sides of the building where the parking lot meets sodded grassed areas. This information could not be found on the record drawing.
5. If possible, add the following County identifiers to the lower right hand corner of the record drawing: County Plan Number SP-17-01 and BMP ID Code: MC 049. Also, if possible, add the bioretention filter detail from Sheet 6 of the approved plan set onto the record drawing. This detail shows the proper configuration of the mulch, soil and underdrain layers beneath the bioretention cells for proper future inspection and maintenance purposes.

Construction - Related Items:

6. A two (2) inch minimum depth of mulch was required on the entire surface of both bioretention cells. Our inspection revealed that some areas within both bioretention cells had very little or no mulch covering. Add mulch as required to achieve minimum required depth.
7. The planting plan within each of the two bioretention cells does not appear to meet Minimum Standard 3.11 of the Virginia Stormwater Management Handbook (VSMH). This handbook was a clear guidance and reference document for construction of the cells per Sheet 6 of the approved plan. It appears that only tree and shrub species are present and herbaceous groundcover plant species were not present. Ground cover, in conjunction with the mulch layer, is important for pollutant removal and to prevent erosion of the mulch and soil layers. Secondly, a minimum of three species of trees and three species of shrubs are required. Refer to pages 3.11-16 through 3.11-38 of the VSMH.
8. A small ponding (puddle) 5 ft. wide by 5 ft. long was present in the back portion of the second (south) bioretention cell. Cell 2 is nearest the southeast corner of the building. It appeared this ponding area was formed by irrigation activity at the site. Although the rest of the cell surface was dry, ponding at this location may be indicative of compaction of surface layers of the filtering soil media, probably due to landscaping and other site activities which followed construction of the bioretention cell. The surface of this area should be loosely scarified to a sufficient depth to promote filtration of runoff through the cell's permeable soil media. *(Note: This only pertains to the back portion of Cell 2).*
9. Clean and remove all debris and trash between the outfall end of the 36-inch diameter storm drain pipe and the existing 24-inch pipe entrance at James Square. This is at the base of the fill slope at the south end of the site.

Once this work is satisfactorily completed, contact our office appropriately. We can then proceed with final release of the surety on the project. One reproducible and one blue/black line set of the record drawings will be required once the above items are adequately addressed.

Please contact me at 757-253-6639 or the assigned Environmental Division inspector, Joe Buchite at 757-253-6643 if you have any further comments or questions.

Sincerely



Scott J. Thomas, P.E.  
Civil Engineer  
Environmental Division

cc: Mark Richardson, AES - via fax  
Raja Elawar, FES - via fax  
H.B. Hankins - via fax

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JAMES CITY COUNTY - ENVIRONMENTAL DIVISION

Office Phone: 757-253-6670

Fax Number: 757-259-4032

DATE SENT: 7/03/02

Name: Steve Rowe  
Firm or Company: Rowe Building + Dev  
Facsimile Number: 757-622-8618  
Number of pages including this transmittal: 3  
From: Scott J. Thomas

James City County  
P O Box 8784  
Williamsburg VA 23187-8784

Comments: FINAL INSPECTION / CERTIFICATION BMD AT  
OLD COLONY PROFESSIONAL BUILDING  
COUNTY PLAN NO. SP-17-01; BMD ID (see MC 049)

If you do not receive all pages, call 757-253-6670 as soon as possible

CC:

MARK RICHARDSON, AES

RAJA ELANAR, FES

HB HANKINS (MARK MILLINS)

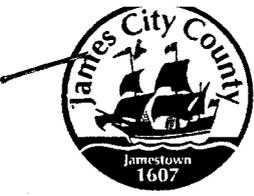


SCOTT J. THOMAS, P.E.  
CIVIL ENGINEER

ENVIRONMENTAL DIVISION

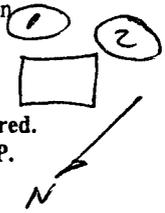
101 MOUNTS BAY ROAD, P.O. Box 8784 (757) 253-6639  
WILLIAMSBURG, VIRGINIA 23187-8784 FAX: (757) 259-4032

E-MAIL: scottt@james-city.va.us



**James City County Environmental Division  
Stormwater Management / BMP Inspection Report  
Bioretention Facilities**

County BMP ID Code (if known): MC049 (Morgan Dent?) SP-17-01  
PHASE III  
 Name of Facility: Old Colony Professional Bldg. BMP No.: 1 of 1 Date: 7/3/02  
 Location: DUAL BIoretention FACILITIES (2 CELLS)  
 Name of Owner: \_\_\_\_\_  
 Name of Inspector: SJ Thomas, J Rudnicki  
 Type of Facility: BIoretention CELLS  
 Weather Conditions: Hd Humid 90's Type:  Final Inspection  County BMP Inspection Program  Owner Inspection



If an inspection item is not applicable, mark NA, otherwise mark the appropriate column.

- O.K. - The item checked is in adequate condition and the maintenance program is currently satisfactory. No action required.
- Routine - The item checked requires attention, but does not present an immediate threat to the function/integrity of the BMP.
- Urgent - The item checked requires immediate attention to keep the BMP operational and prevent damage to the facility.

Provide an explanation and details in the comment column, if routine or urgent are marked.

Facility Item	O.K.	Routine	Urgent	Comments
Accessibility:	<u>THRU SITE</u>			
Roads	✓			<u>Paved Asphalt</u>
Parking Areas	✓			<u>Paved Asphalt</u>
Gates				<u>None</u>
Locks				<u>None</u>
Safety Fencing				<u>None.</u>
Observation Wells/Areas:	<u>None</u>			
Trap Doors				
Manhole Covers				
Grates				
Steps				
Pretreatment Devices:	<input type="checkbox"/> Inlet <input type="checkbox"/> Sump <input type="checkbox"/> Forebay <input checked="" type="checkbox"/> Other <u>VOOT #1 PER GRAVEL DIAPHRAGMS</u>			
Sediment	✓			<u>Both Sides of Building</u>
Trash & Debris	✓			
Structure	✓			
Other				
<u>36" Ø RCP Bypass Culvert under site. 3 MH Access structure near biocells. Cell 1 25' x 15'</u>				

Facility Item	Y.N.A.	ASBESTOS	LEAD	PCB
Inflow Structure (Describe Type/Location): <i>Overland Flow to BMPs.</i>				
Condition	✓			<i>Sodded Yard.</i>
Erosion	✓			<i>None</i>
Trash and Debris	✓			<i>None</i>
Sediment	✓			
Aesthetics	✓			<i>Looks Great.</i>
Other				
Primary Infiltration (Bioretention Cell) Area: <i>Cell 1 (25x15); Cell 2 (60x10')</i>				
Specialty Landscaping		✓		<i>Sparse Cell 1;</i>
Mulch Layer				<i>Cell 1, Needs More / Cell 2</i>
Planting Soil/Sand	✓			<i>Certified.</i>
Subgrade Soil	✓			<i>11</i>
Aggregate	✓			<i>11</i>
Underdrain	✓			<i>8" UNDERDRAIN</i>
Sediment	✓			
Aesthetics	✓			<i>LOOK OK. PUDDLE BACK CELL 2</i>
Overflow or Bypass Control Structure (Describe Type/Location): <i>D1-7 inlets 5x5; 5' deep</i>				
Condition	✓			
Erosion	✓			
Trash & Debris	✓			
Sediment	✓			
Other				<i>Inlet 2 connects to BYPASS</i>
Outlet Structure (Describe Type/Location): <i>15" connect to MH 1 (36" RCP)</i>				
Condition	✓			<i>MH 1 brick</i>
Erosion	✓			
Trash & Debris	✓			
Sediment	✓			
Other	✓			
Contributing Drainage Area/Perimeter Conditions: <i>PADAN PARKING (North); South Apartments/Playground</i>				
Land Use	✓			<i>Sodded</i>
Stabilization	✓			
Trash & Debris	✓			
Pollutant Hazard	✓			
Other				<i>3 SIDEWALK CUTS (WPST) ST. STEEL</i>
<i>E.S. FILL BANK WPST SIDE, NPAR 36" OUTFALL</i>				

Sketch and/or Remarks:

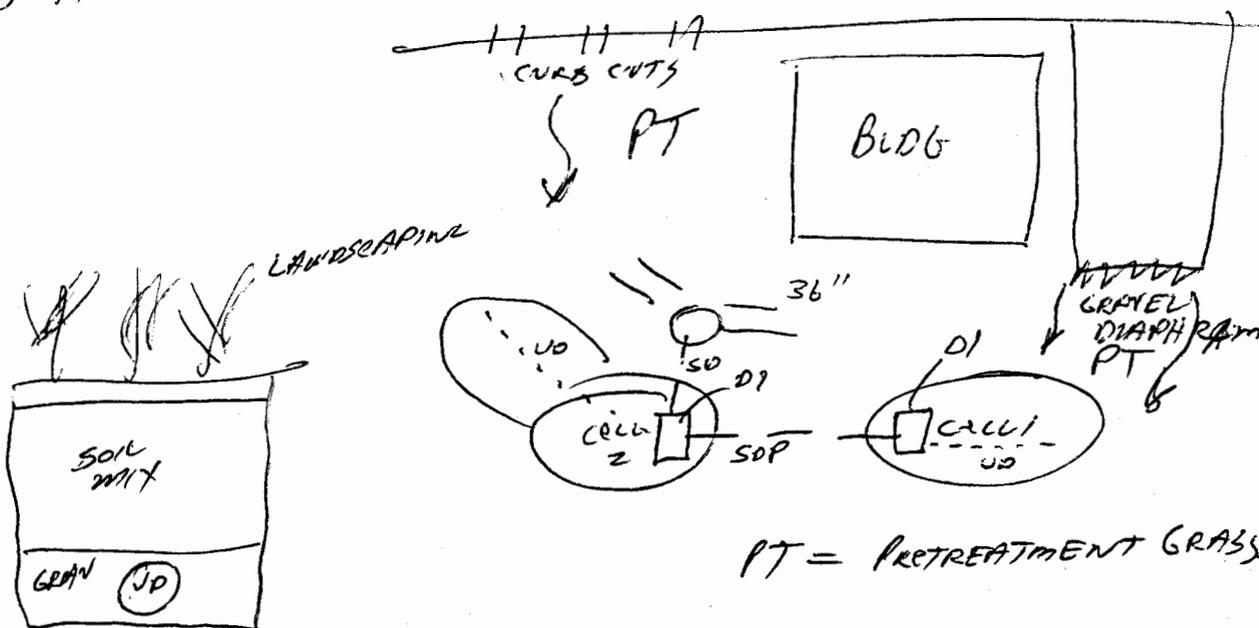
Cell 1 - Needs More Landscaping Only 8 shrubs + 2 trees. Need more variety per VSMH. Need more mulch

Cell 2 - Sparse Landscaping 2 trees / 12 shrubs

Mulch - only 0-2" present. Need more mulch

5x5 Puddle back of Cell 2 (scarcity)

o CLEAN OUTFALL 36" BYPASS OF TRASH, Debris AND AT ENTRANCE TO 24" RCP.



PT = PRETREATMENT GRASS

Overall Environmental Division Internal Rating: 3

Signature: [Signature] P.E.

Date: 7/3/02 2:45 pm

Title: Civil Engineer ENV Div.



# DEVELOPMENT MANAGEMENT

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COUNTY ENGINEER  
(757) 253-6678  
INTEGRATED PEST MANAGEMENT  
(757) 253-2620

July 3, 2002

Mr. Steve Rowe  
Rowe Building & Development, LLC  
150 Boush St., Suite 600  
Norfolk, Va. 23510

Re: Old Colony Professional Building (form. Morgan Dental)  
County Plan No. SP-17-01  
Bioretention Facilities  
County BMP ID Code: MC 049

Dear Mr. Rowe:

The Environmental Division has reviewed certification information as forwarded to our office for the stormwater management facility at the above referenced project. Certification information included a record drawing dated June 20<sup>th</sup> 2002 and a construction certification dated June 27<sup>th</sup> 2002 for two onsite bioretention cells situated at the back (west) of the main site building.

Based on our review of the project and a concurrent field inspection as performed on July 3<sup>rd</sup> 2002, the following items must be addressed prior to release of the developer's surety instrument for the stormwater management/BMP facility at the site:

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1. The construction certification dated June 27<sup>th</sup> 2002 and the supplemental soil mixture certification dated February 18<sup>th</sup> 2002 are **satisfactory**.

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2. As-built data is required for the 36-inch RCP storm drain culvert pipe system (and manholes) which bypasses drainage from the natural channel through the site. This information was previously requested via plan review comment # 3 by the Environmental Division dated March 27<sup>th</sup> 2002 (Plan No. SP-17-01).
3. Label the size and type of underdrains used beneath the two bioretention cells.
4. The drawing indicates "see detail this sheet" for the pretreatment stone diaphragms situated at the east and west sides of the building where the parking lot meets sodded grassed areas. This information could not be found on the record drawing.
5. If possible, add the following County identifiers to the lower right hand corner of the record drawing: County Plan Number SP-17-01 and BMP ID Code: MC 049. Also, if possible, add the bioretention filter detail from Sheet 6 of the approved plan set onto the record drawing. This detail shows the proper configuration of the mulch, soil and underdrain layers beneath the bioretention cells for proper future inspection and maintenance purposes.

WATERSHED	MC	MAINTENANCE PLAN	No	CTRL STRUC DESC	DI-7 Type A
BMP ID NO	049	SITE AREA acre	1.283	CTRL STRUC SIZE inches	
PLAN NO	SP-17-01	LAND USE	Gen Business	OTLT BARRL DESC	CPP Drain
TAX PARCEL	(48-01)(01-18)	old BMP TYP		OTLT BARRL SIZE inch	15
PIN NO	4810100018	JCC BMP CODE	D1 Bioretention	EMERG SPILLWAY	Yes
CONSTRUCTION DATE	7/17/2001	POINT VALUE	8	DESIGN HW ELEV	81.13
PROJECT NAME	Old Colony Professional Building			PERM POOL ELE	na
FACILITY LOCATION	1130 Old Colony Lane	SVC DRAIN AREA acres	1.3	2-YR OUTFLOW cfs	0.60
CITY-STATE	Williamsburg, Va. 23185			10-YR OUTFLOW cfs	1.40
CURRENT OWNER	Coastal Colonial Development LLC			REC DRAWING	Yes
OWNER ADDRESS	329 Colony Trail	SERVICE AREA DESCR	0.977 ac onsite plus 0.32 ac offsite		
OWNER ADDRESS 2		IMPERV AREA acres	0.42	CONSTR CERTI	No
CITY-STATE-ZIP CODE	Lanexa, Va. 23089	RECV STREAM	UT of Mill Creek		
OWNER PHONE	220-6727	EXT DET-WQ-CTRL	Yes	LAST INSP DATE	7/3/2002
MAINT AGREEMENT	Yes	WTR QUAL VOL acre-ft	0.035	INTERNAL RATING	3
EMERG ACTION PLAN	No	CHAN PROT CTRL	No	MISC/COMMENTS	Variance 10 pts. Dual Bioret cells in back of bldg. Large bypass SD under fill.
		CHAN PROT VOL acre-ft	0		
		SW/FLOOD CONTROL	Yes		
		GEOTECH REPORT	No		

Get Last BMP No

Return to Menu

ENVIRONMENTAL DIVISION REVIEW COMMENTS  
MORGAN DENTAL OFFICE (Old Colony Lane)  
COUNTY PLAN NO. SP - 017 - 01  
March 27, 2001

MON/SJT

General Comments:

- ok ✓ ✓ A Land Disturbing Permit and Siltation Agreement, with surety, are required for this project.
- ok ✓ ✓ An Inspection/Maintenance Agreement shall be executed with the County for the BMP facilities associated with this project.
- ok ✓ ✓ As-built drawings must be provided for the BMP's upon completion. Also, a note shall be provided on the plan stating that upon completion, the construction of the dam will be certified by a professional engineer who has inspected the structure during construction. (Note: It is also highly recommended that the record drawing also include reflect final construction information for the bypass channel enclosure as proposed through the site.)
- ④ ✓ Offsite Work. Provide evidence of permission to occupy or disturb the offsite adjacent tract from the parcel owner (n/f James Square Homeowners Association). Also, the note in the E&S control narrative on Sheet 8 incorrectly states that no offsite activities are proposed for this site.
- ✓ ✓ A professional seal and signature is required on final and complete approved stormwater management plans, drawings, technical reports and specifications.

Chesapeake Bay Preservation:

- ✓ ✓ Delineate Steep Slope Areas. Section 23-10(2) of the Chesapeake Bay Preservation Ordinance requires delineation of areas with slopes 25 percent or greater.
- ✓ ✓ Steep Slope Areas. Section 23-5 of the Chesapeake Bay Preservation Ordinance does not allow land disturbing activities to be performed on slopes of 25 percent or greater. Based on information provided on the plan cover sheet, it appears steep slope areas are impacted on this site; therefore, a request for a waiver or exception is required, in writing. RECEIVED LETTER DATED MAY 3RD 2001.

Erosion & Sediment Control Plan:

- ✓ ✓ Temporary Stockpile Areas. Show any temporary soil stockpile, staging and equipment storage areas (with required erosion and sediment controls) or indicate on the plans that none are anticipated for the project site. TO BE COORDINATED W/ JCL INSP. @ PRECON.
- ⑨ ✓ Offsite Land Disturbing Areas. Identify any offsite land disturbing areas including borrow, waste, or disposal sites (with required erosion and sediment controls) or indicate on the plans that none are anticipated for this project. TO BE COORDINATED. WHERE? SHEET 4. NONE FOUND.
- 10. ✓ Soils Map. Delineate site soils as listed on Sheet 2 on the drainage map provided in the design report. No soil map unit delineations were found on Sheet 2.
- add some ✓ 11. Existing Drainage. Describe in further detail how existing drainage/runoff will be handled through the existing channel and from Old Colony Lane during construction of the proposed bypass channel enclosure and its connecting onsite storm drainage system. complete install of bypass CHANNEL.
- ✓ 12. Phase I Sequence. Modify the Phase 1 sequence of construction, line 2, as follows: The bypass channel enclosure must be complete and functional prior to any additional clearing or filling operations in the ravine. DID.