



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: WC079

DATE VERIFIED: October 19, 2012

QUALITY ASSURANCE TECHNICIAN: Leah Hardenbergh

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

STONEHOUSE - Sect 5A - LISBURN
WC079

Order of Contents for Stormwater Management Facilities As-built Files

Each file is to contain:

- ✓1. Maintenance Agreement
- ✓2. Completed construction certification
- ✓3. As-built plan
- ✓4. Watershed Map
- ✓5. Construction Plan
- ✓6. Design Calculations
- ✓7. Geotechnical Reports
- ✓8. Correspondence with owners
- ✓9. Inspection Records (construction phase)
10. Enforcement Actions (construction phase)
11. Miscellaneous

COPY

COUNTY OF JAMES CITY, VIRGINIA

DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

THIS DECLARATION, made this 24th day of December, 2002,
between G. C. R., Inc.,
and all successors in interest, ("COVENANTOR(S),") owner(s) of the following property: Development Area One, Phase 1, Section V-A "Lisburn",
project name, Stonehouse
Document No. 020029397, Deed Book _____, Page No. _____; Instrument No. _____, and the County of James City, Virginia ("COUNTY.")

WITNESSETH:

We, the COVENANTOR(S), with full authority to execute deeds, mortgages, other covenants, and all rights, titles and interests in the property described above, do hereby covenant with the COUNTY as follows:

1. The COVENANTOR(S) shall provide maintenance for the drainage system including any runoff control facilities, conveyance systems and associated easements, hereinafter referred to as the "SYSTEM," located on and serving the above-described property to ensure that the SYSTEM is and remains in proper working condition in accordance with approved design standards, and with the law and applicable executive regulations. The SYSTEM shall not include any elements located within any Virginia Department of Transportation rights-of-way.

2. If necessary, the COVENANTOR(S) shall levy regular or special assessments against all present or subsequent owners of property served by the SYSTEM to ensure that the SYSTEM is properly maintained.

3. The COVENANTOR(S) shall provide and maintain perpetual access from public right-of-ways to the SYSTEM for the COUNTY, its agent and its contractor.

4. The COVENANTOR(S) shall grant the COUNTY, its agent and its contractor a right of entry to the SYSTEM for the purpose of inspecting, operating, installing, constructing, reconstructing, maintaining or repairing the SYSTEM.

5. If, after reasonable notice by the COUNTY, the COVENANTOR(S) shall fail to maintain the SYSTEM in accordance with the approved design standards and with the law and applicable executive regulations, the COUNTY may perform all necessary repair or maintenance work, and the COUNTY may assess the COVENANTOR(S) and/or all property served by the SYSTEM for the cost of the work and any applicable penalties.

Instrument # 030000230

Recorded on Jan. 6, 2003

6. 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, maintenance, repair, operation or use of the SYSTEM.

7. The COVENANTOR(s) shall promptly notify the COUNTY when the COVENANTOR(S) legally transfers any of the COVENANTOR(S)' responsibilities for the SYSTEM. The COVENANTOR(S)' shall supply the COUNTY with a copy of any document of transfer, executed by both parties.

8. The covenants contained herein shall run with the land and shall bind the COVENANTOR(S) and the COVENANTOR(S)' heirs, executors, administrators, successors and assignees, and shall bind all present and subsequent owners of property served by the SYSTEM.

9. This COVENANT shall be recorded in the County Land Records.

IN WITNESS WHEREOF, the COVENANTOR(S) have executed this DECLARATION OF COVENANTS as of the date first above written.

COVENANTOR(S)

G.C.R. INC.

Print Name/Title

[Signature]
JAMES L. CLAYTON, PRESIDENT

ATTEST:

[Signature]
Sec/TRKS.

COVENANTOR(S)

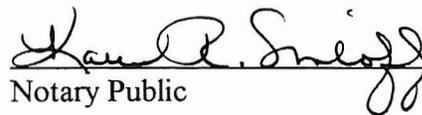
Print Name/Title

ATTEST:

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF NEWPORT NEWS

I hereby certify that on this 24th day of DECEMBER, 2002, before the subscribed, a Notary Public of the State of Virginia, and for the City/County of NEWPORT NEWS, aforesaid personally appeared JAMES L. CLAYTON, PRES., G.C.R., INC. and did acknowledge the foregoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 24th day of DECEMBER, 2002.


Notary Public

My Commission expires: MARCH 31, 2003

Approved as to form:


Asst. County Attorney

This Declaration of Covenants prepared by:
AES Consulting Engineers
Mark Bennett

(Print Name)
Project Manager

(Title)
5248 Olde Towne Road, Suite 1

(Address)
Williamsburg, VA 23188

(City) (State) (Zip)

drainage.pre



ECS MID-ATLANTIC, LLC
Geotechnical • Construction Materials • Environmental • Facilities

Environmental Division

JUN 02 2010

May 18, 2010

Mr. Don Cotton
GCR, Inc.
P.O. Box 707
Lightfoot, Virginia 23090

RECEIVED

ECS Project No.: 07:6210

Reference: Stonehouse Phase V-A Lisburn Stormwater Management Facilities
Dry Ponds 5-5 and 5-6

Dear Mr. Cotton:

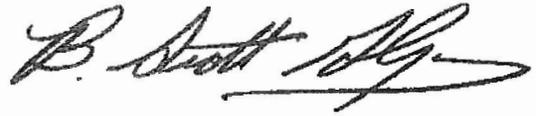
ECS Mid-Atlantic, LLC (ECS) provided earthwork observation and testing during construction of the stormwater management ponds listed above. Reports were submitted between the dates of April 23 and June 6, 2003 which detailed our daily observations. We have reviewed a letter prepared by James City County (JCC), dated April 29, 2010 which is requesting clarification on the construction certification of the referenced ponds. We have been requested to comment on two items in the letter under the heading "Construction Certification" for WC079 (dry pond 5-6) and WC080 (dry pond 5-5). Specifically, JCC has requested additional information detailing inspections performed for the installation of the anti-seep collars and the elevations associated with the impervious clay core for both ponds.

Our reports document inspections during the construction of both ponds. Specifically, we documented compactive efforts and construction of the clay core, shell, and the installation of the principal spill way pipe. Specific elevations were not obtained during the construction of the dam by ECS personnel as ECS was not responsible for elevation line and grade during construction. However, during construction, ECS personnel were obtaining rough dimensions of the clay core and shell of the dam. The clay core was constructed within approximately 2 to 3 ft of the final lift elevation placed for pond 5-5. This information is observed in our report of lifts or elevations on our field density test forms. There was no defined clay core for pond 5-6 as this dam was constructed as a uniform dam, i.e. no shell or core since all the soils classified as "clay core" material. Also, we had documented in Report Nos. 13 and 14 construction observations of the principal spillway pipe and anti-seep collars for pond 5-6. However, while we did document construction of the principal spillway pipe for pond 5-5 (Report No. 8), we did not explicitly reference construction of anti-seep collars as this may not have been directly observed at the time of construction by ECS personnel. However, the construction of both of these ponds was done consecutively and as such, both ponds were constructed similarly. While we cannot provide specific reference to the anti-seep collars for pond 5-5, it is presumed that they were installed. Also, considering the age of the ponds, no signs of any defects, and the ponds are functioning properly, we consider them to have been constructed in accordance with project plans and specifications.

If you have any question or require any additional information, please feel free to contact any of us here at the office.

Respectfully,

ECS MID-ATLANTIC, LLC



B. Scott Gresham, P.E.
Construction Services Manager



Michael J. Galli, P.E.
Principal Engineer



I/projects/2004/cmt/6210 lisburn ponds 5-5 and 5-6.doc



Environmental Division

JUN 02 2010

James City County, Virginia
Environmental Division

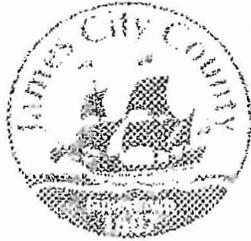
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**Stormwater Management / BMP Facilities
Record Drawing and Construction Certification**

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: SECTION V - "ALISBURN" AT STONEHOUSE
Structure/BMP Name: BMP 5-5 & BMP 5-6
Project Location: JAMES CITY COUNTY
BMP Location: _____
County Plan No.: _____

Project Type: Residential Business Tax Map/Parcel No.: _____
 Commercial Office BMP ID Code (if known): _____
 Institutional Industrial Zoning District: _____
 Public Roadway Land Use: _____
 Other _____ Site Area (sf or acres): _____

Brief Description of Stormwater Management/BMP Facility: BOTH BMP'S
ARE DRY PONDS

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: _____
Datum or Reference Elevation: _____
Control Description: _____
Control Location from Subject Facility: _____

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: _____
Facility Monitored by County Representative during Construction: Yes No Unknown
Name of Site Work Contractor Who Constructed Facility: _____
Name of Professional Firm Who Routinely Monitored Construction: ECS
Date of Completion for SWM/BMP Facility: _____
Date of Record Drawing/Construction Certification Submittal: 12/1/07

(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.)*
Name: _____
Mailing Address: _____
Business Phone: _____ Fax: _____
Contact Person: _____ 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: _____
Mailing Address: _____
Business Phone: _____
Fax: _____
Responsible Plan Preparer: _____
Title: _____
Plan Name: _____
Firm's Project No. _____
Plan Date: _____
Sheet No.'s Applicable to SWM/BMP Facility: ____ / ____ / ____ / ____ / ____

BMP Contractor: *(Note: Site Work Contractor directly responsible for construction of the Stormwater Management / BMP facility.)*
Name: _____
Mailing Address: _____
Business Phone: _____
Fax: _____
Contact Person: _____
Site Foreman/Supervisor: _____
Specialty Subcontractors & Purpose (for BMP Construction Only): _____

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: _____
Facility Monitored by County Representative during Construction: Yes No Unknown
Name of Site Work Contractor Who Constructed Facility: _____
Name of Professional Firm Who Routinely Monitored Construction: ECS
Date of Completion for SWM/BMP Facility: _____
Date of Record Drawing/Construction Certification Submittal: 12/1/07

(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.)

Name: G.C.R., INC
Mailing Address: P.O. BOX 707
Lightfoot VA 23090
Business Phone: 757.220.2091 Fax: 757.220.9012
Contact Person: Don Cotton Title: Vice President

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: Van Marc Bennett
Title: Professional Engineer No: 26628
Plan Name: Subdivision Plan for Stonehouse Development One Phase 1, Section V-A
Firm's Project No. 9088-00 "Lisburn"
Plan Date: 10/9/02
Sheet No.'s Applicable to SWM/BMP Facility: 15 | 17 | 18 | 1

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

Name: Perdue II
Mailing Address: 9 Rhodelia Lane
Poquoson, VA 23062
Business Phone: 757.868.8307
Fax: 757.345.2397
Contact Person: James Perdue Jr.
Site Foreman/Supervisor: Keith Guill
Specialty Subcontractors & Purpose (for BMP Construction Only): _____

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: C.E. Newbaker Surveying & Planning, INC.
Mailing Address: P.O. Box 1298 Yorktown, VA 23693
Business Phone: (757) 240-2562
Fax: (757) 926-4880

Name: C.E. Newbaker, III
Title: PRESIDENT, L.S. # 1380

Signature: [Signature]
Date: MAY 27, 2010

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: ECS Mid-Atlantic, LLC
Mailing Address: 108 Ingram Rd. St. 1, Williamsburg, VA 23188
Business Phone: (757) 229-6677
Fax: (757) 229-9978

Name: Michael J. Galli, P.E.
Title: Vice President

Signature: [Signature]
Date: 6/2/10

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.

[Signature] (Seal)

Virginia Registered Professional Engineer or Certified Land Surveyor

L.S. # 1380



_____ (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 reproducibles.
- 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.)

- XX 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.
- XX 2. Elevations to the nearest 0.1' unless higher accuracy is needed to show positive drainage.
- XX 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).
- N/A 4. All plan sheet revision blocks modified to indicate date and record drawing status.
- XX 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.)

- XX 1. All requirements of Section I (Methods and Presentation) apply to this section.
- XX 2. Plan Views: Show general location, arrangement and dimensions. Location and alignment shall generally match approved design plans.
- XX 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.
- XX 4. Top widths, berm widths and embankment side slopes.
- XX 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.
- X 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.
- X 7. Profile or elevations along the entire centerline of the emergency spillway. Emergency spillway may be steeper, but no flatter or narrower than design.
- X 8. Elevation of the principal spillway crest or outlet crest of the structure.

- ~~X~~ 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.
- ~~X~~ 10. Dimensions, locations and elevations of outlet orifices, weirs, slots and drains.
- ~~X~~ 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.
- P/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.**
- P/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.**
- ~~XX~~ 14. Elevation of the principal spillway barrel (outlet pipe) inlet and outlet invert.
- ~~X~~ 15. Outlet barrel diameter, length, slope, type and thickness class of material and type of flared end sections, headwall or endwall.
- ~~X~~ 16. Outfall protection dimension, type and depth of rock and if underlain filter fabric is present.
- P/A 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.
- ~~X~~ 19. Fencing location and type, if applicable to facility.
- ~~XX~~ 20. BMP vicinity properly cleaned of stockpiles and construction debris.
- ~~X~~ 21. No visual signs of erosion or channel degradation immediately downstream of facility.
- NO 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.
- XX F2. Basin bottom has positive slope and drainage from all basin inflow points to the riser (or outflow) location.
- N/A F3. Timber wall BMP used in intermittent stream only. (ie. Prohibited in perennial streams.)
- N/A F4. Forebay provided approximately 20 ft. upstream of the facility. Forebays generally 4 to 6 feet in depth.
- XX F5. A reverse slope pipe, vertical stand pipe or mini-barrel and riser was provided to prevent clogging.
- XX F6. Principal spillway and outlet barrel provided consisting of reinforced concrete pipe with O-Ring gaskets for watertight joint construction.
- XX F7. Mini-barrel and riser, if used, contains a removable trash rack to reduce clogging.
- XX 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.
- N/A F9. Timbers properly reinforced or concrete footing provided if soil conditions were prohibitive.
- N/A F10. Timber wall cross members extended to a minimum depth of two (2) feet below ground elevation.
- XX F11. Protection against erosion and scour from the low flow orifice and weir-flow trajectory provided.
- XX F12. Stilling basin or standard outlet protection provided at principal spillway outlet.
- XX 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.
- XX F14. No visual signs of undercutting of timber walls or clogging of the low orifice were present.
- XX F15. No visual signs of erosion or channel degradation immediately downstream of facility.
- XX 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)

- XX G1. All requirements of Section II, Minimum Standards, apply to Group G facilities as applicable.
- XX 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.
- XX G4. Provisions included to clearly specify how the natural vegetated areas utilized as dedicated open space will be managed and field identified (marked).
- XX G5. Adequate protection measures were implemented during construction to protect the defined dedicated open space areas.
- N/A 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.)

- XX SD1. All requirements of Section II, Minimum Standards, apply to Storm Drainage Systems.
- XX SD2. Horizontal location of all pipe and structures relative to the SWM/BMP facility.
- XX SD3. Type, top elevation and invert elevation of all access type structures (inlets, manholes, etc.).
- XX SD4. Material type, size or diameter, class, invert elevations, lengths and slopes for all pipe segments.
- XX 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 .)

N/A

- ___ 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.

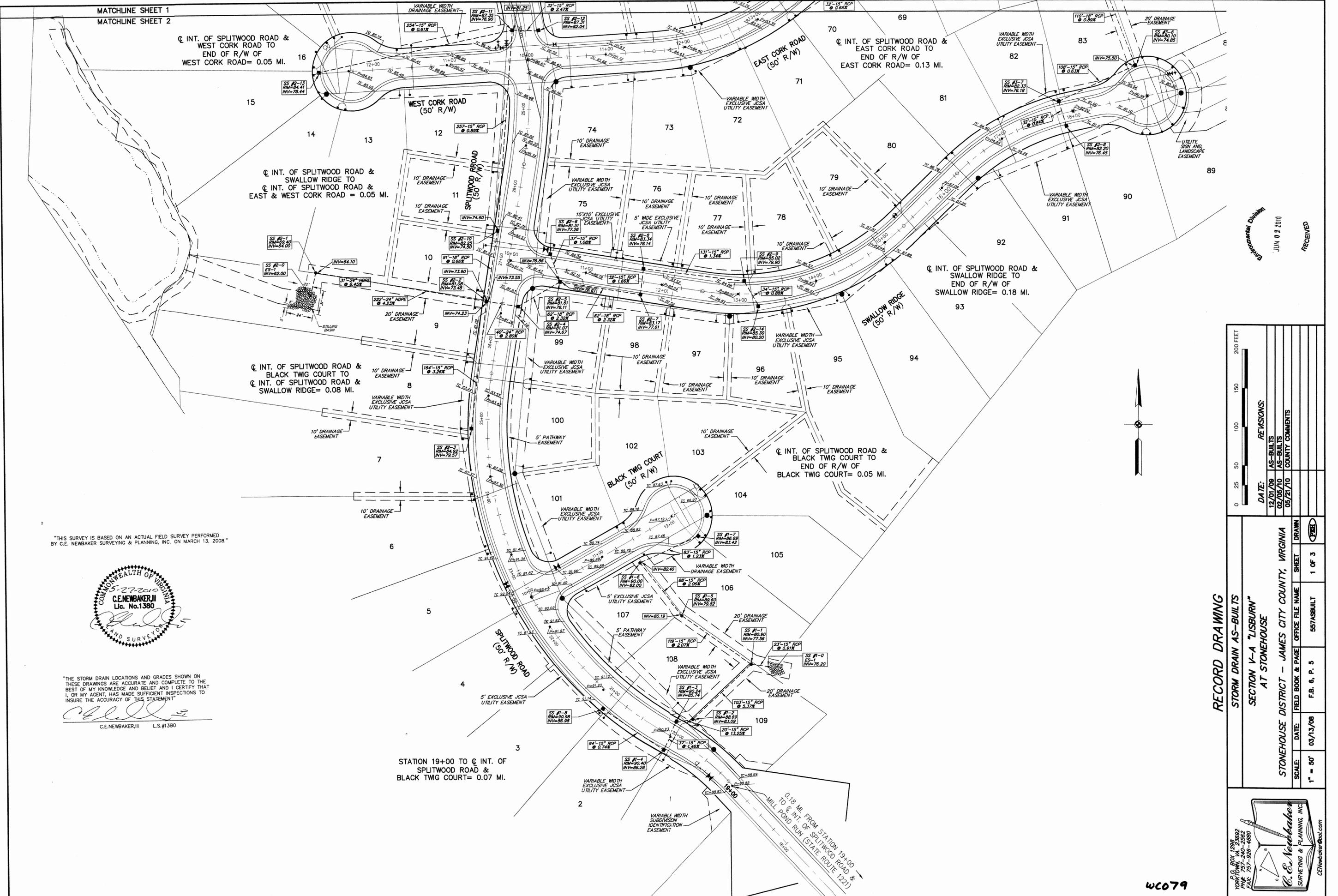
**STORMWATER MANAGEMENT / BMP FACILITIES
RECORD DRAWING CHECKLIST**

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\SWMProg\BMP\Certi\RDCC.wpd



MATCHLINE SHEET 1
MATCHLINE SHEET 2

☉ INT. OF SPLITWOOD ROAD &
WEST CORK ROAD TO
END OF R/W OF
WEST CORK ROAD= 0.05 MI.

☉ INT. OF SPLITWOOD ROAD &
EAST CORK ROAD TO
END OF R/W OF
EAST CORK ROAD= 0.13 MI.

☉ INT. OF SPLITWOOD ROAD &
SWALLOW RIDGE TO
☉ INT. OF SPLITWOOD ROAD &
EAST & WEST CORK ROAD = 0.05 MI.

☉ INT. OF SPLITWOOD ROAD &
SWALLOW RIDGE TO
END OF R/W OF
SWALLOW RIDGE= 0.18 MI.

☉ INT. OF SPLITWOOD ROAD &
BLACK TWIG COURT TO
☉ INT. OF SPLITWOOD ROAD &
SWALLOW RIDGE= 0.08 MI.

☉ INT. OF SPLITWOOD ROAD &
BLACK TWIG COURT TO
END OF R/W OF
BLACK TWIG COURT= 0.05 MI.

STATION 19+00 TO ☉ INT. OF
SPLITWOOD ROAD &
BLACK TWIG COURT= 0.07 MI.

"THIS SURVEY IS BASED ON AN ACTUAL FIELD SURVEY PERFORMED
BY C.E. NEWBAKER SURVEYING & PLANNING, INC. ON MARCH 13, 2008."



"THE STORM DRAIN LOCATIONS AND GRADES SHOWN ON
THESE DRAWINGS ARE ACCURATE AND COMPLETE TO THE
BEST OF MY KNOWLEDGE AND BELIEF AND I CERTIFY THAT
I, OR MY AGENT, HAS MADE SUFFICIENT INSPECTIONS TO
INSURE THE ACCURACY OF THIS STATEMENT"

C.E. NEWBAKER, III L.S. #1380

DATE:	12/01/09	AS-BUILTS
REVISIONS:	02/05/10	AS-BUILTS
	05/21/10	COUNTY COMMENTS

DATE:	03/13/08	F.B. 6, P. 5	557ASBUILT	SHEET	1 OF 3
SCALE:	1" = 50'			FIELD BOOK & PAGE	OFFICE FILE NAME
					DRAWN

RECORD DRAWING

STORM DRAIN AS-BUILTS
SECTION V-A "LISBURN"
AT STONEHOUSE

STONEHOUSE DISTRICT - JAMES CITY COUNTY, VIRGINIA

P.O. BOX 1298
YORKTOWN, VA 23692
PH: 757-240-2662
FAX: 757-926-4660

C.E. Newbaker
SURVEYING & PLANNING, INC.
CENewbaker@aol.com

WC079

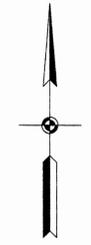
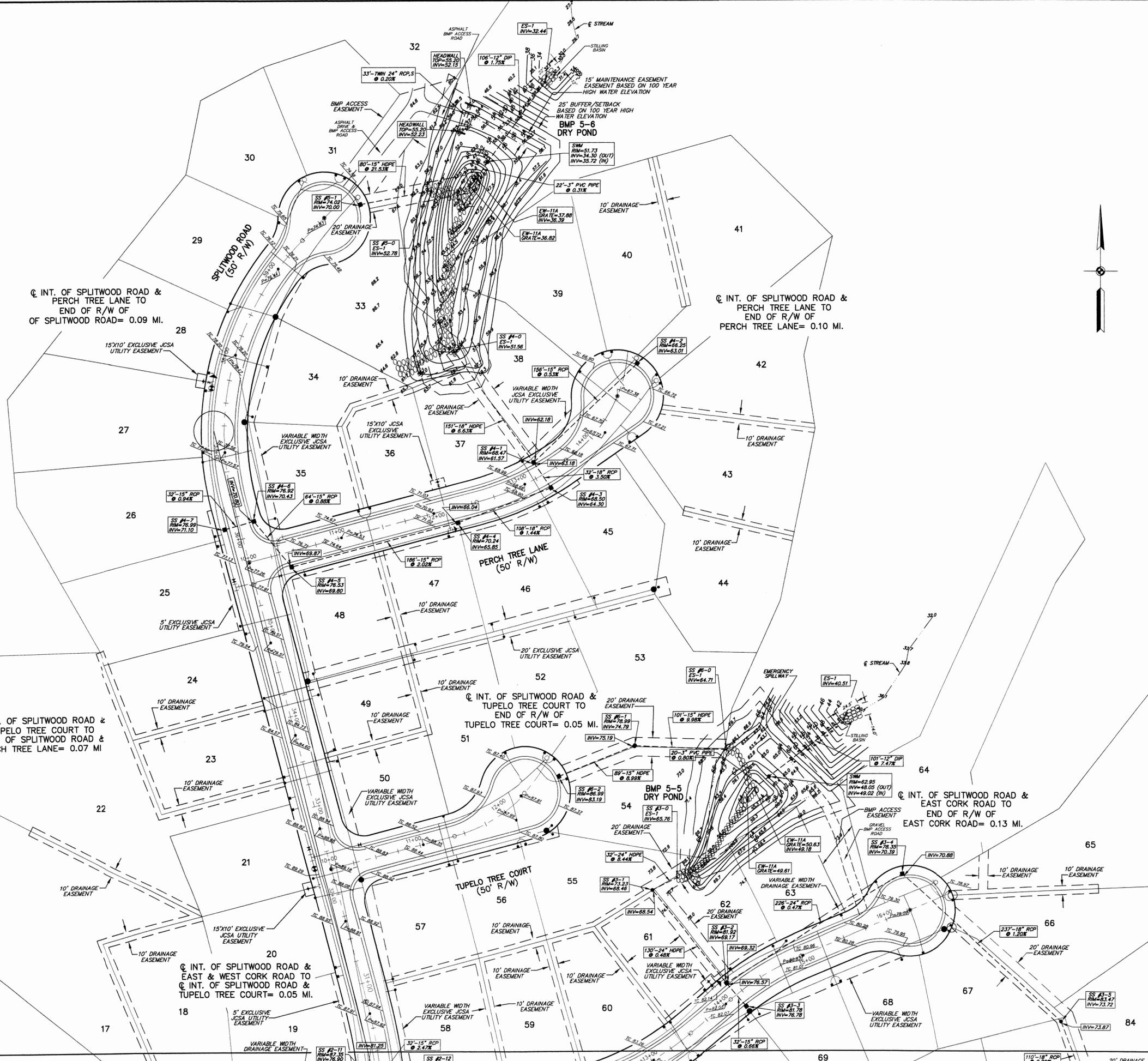
RECEIVED
JUN 02 2010
Engineering Division

"THIS SURVEY IS BASED ON AN ACTUAL FIELD SURVEY PERFORMED BY C.E. NEWBAKER SURVEYING & PLANNING, INC. ON MARCH 13, 2008."



"THE STORM DRAIN LOCATIONS AND GRADES SHOWN ON THESE DRAWINGS ARE ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND I CERTIFY THAT I, OR MY AGENT, HAS MADE SUFFICIENT INSPECTIONS TO INSURE THE ACCURACY OF THIS STATEMENT."

C.E. NEWBAKER, III L.S.#1380



0	25	50	100	150	200
200 FEET					

DATE:	REVISIONS:
12/01/09	AS-BUILTS
02/05/10	AS-BUILTS
05/21/10	COUNTY COMMENTS

SCALE: 1" = 50'		F.B. 6, P. 5		557ASBUILT	
DATE:	03/13/08	FIELD BOOK & PAGE:		OFFICE FILE NAME:	
SCALE:		SHEET:	2 OF 3	DRAWN:	CE
STONEHOUSE DISTRICT - JAMES CITY COUNTY, VIRGINIA					
SECTION V-A "LISBURN" AT STONEHOUSE					

RECORD DRAWING

STORM DRAIN AS-BUILTS

SECTION V-A "LISBURN" AT STONEHOUSE

STONEHOUSE DISTRICT - JAMES CITY COUNTY, VIRGINIA

DATE: 03/13/08

SCALE: 1" = 50'

F.B. 6, P. 5

557ASBUILT

SHEET 2 OF 3

DRAWN CE

C.E. Newbaker SURVEYING & PLANNING, INC.

1200 BOYD LANE, SUITE 200, RICHMOND, VA 23220
 PHONE: 757-240-2562
 FAX: 757-926-4880

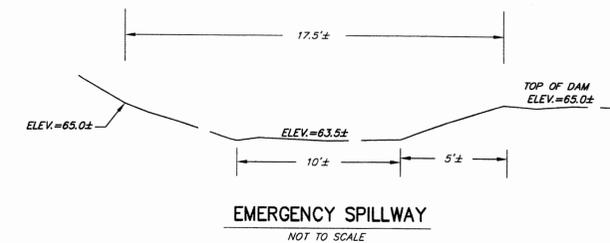
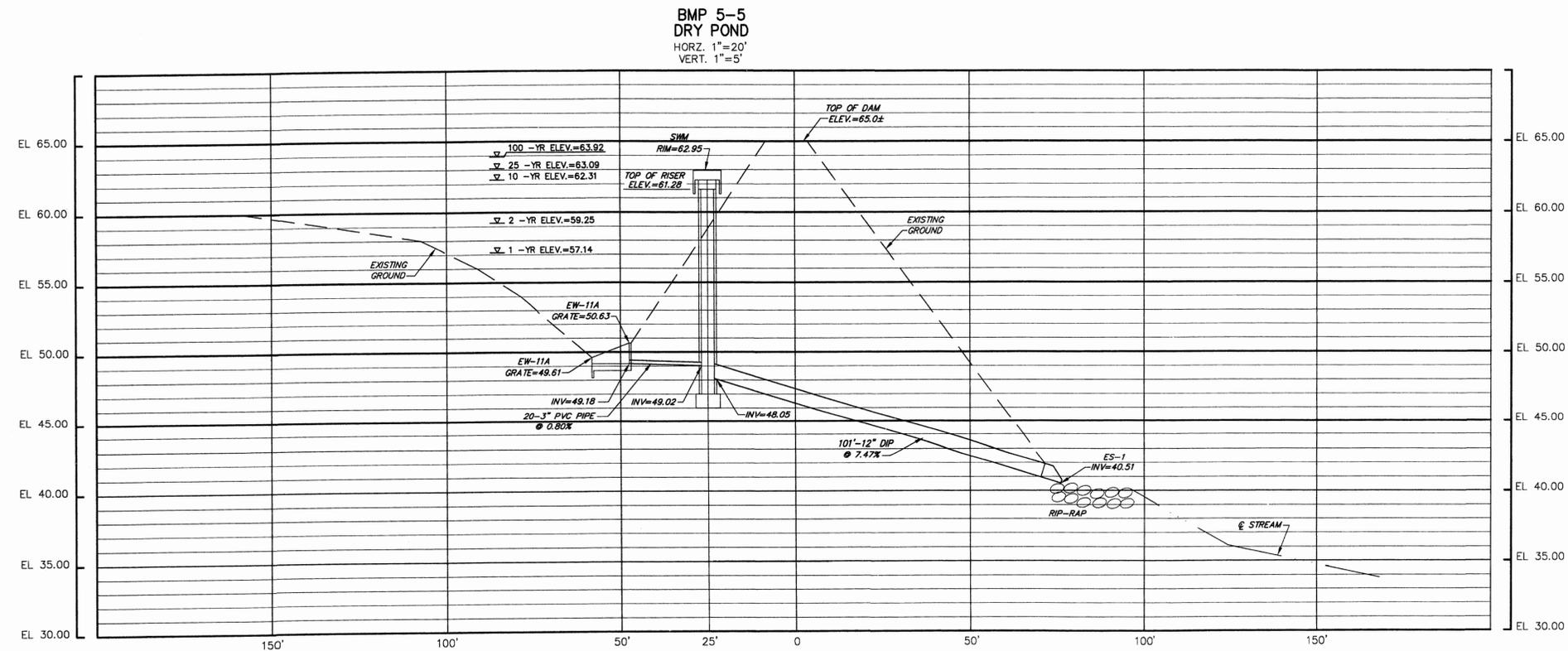
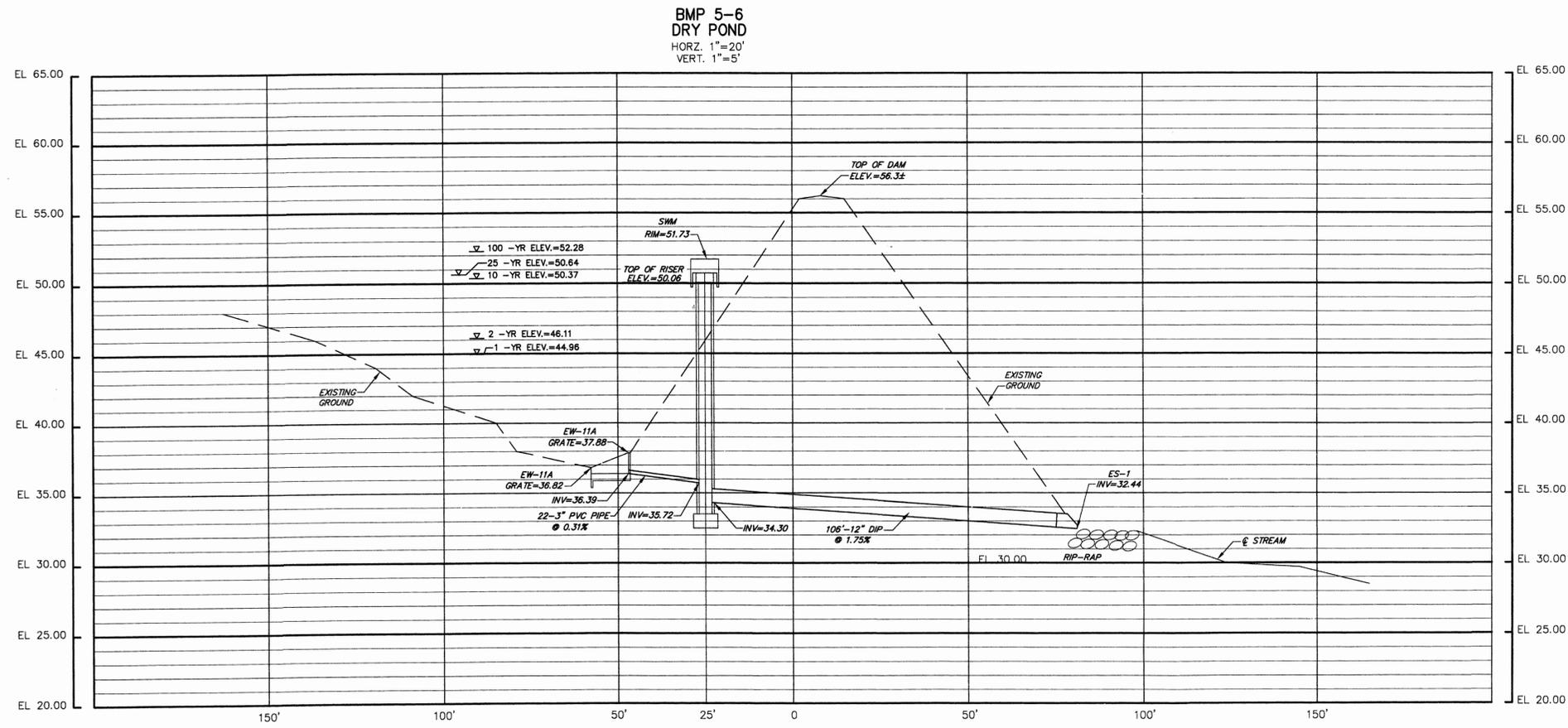
MATCHLINE SHEET 1
MATCHLINE SHEET 2

"THIS SURVEY IS BASED ON AN ACTUAL FIELD SURVEY PERFORMED BY C.E. NEWBAKER SURVEYING & PLANNING, INC. ON MARCH 13, 2008."



"THE STORM DRAIN LOCATIONS AND GRADES SHOWN ON THESE DRAWINGS ARE ACCURATE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND I CERTIFY THAT I, OR MY AGENT, HAS MADE SUFFICIENT INSPECTIONS TO INSURE THE ACCURACY OF THIS STATEMENT"

C.E. Newbaker, III
C.E. NEWBAKER, III L.S.#1380



REVISIONS:	
DATE:	AS-BUILTS
12/01/09	AS-BUILTS
02/05/10	AS-BUILTS
05/21/10	COUNTY COMMENTS

RECORD DRAWING

STORM DRAIN AS-BUILTS	
SECTION V-A "LISBURN" AT STONEHOUSE	
STONEHOUSE DISTRICT - JAMES CITY COUNTY, VIRGINIA	
SCALE:	OFFICE FILE NAME
DATE:	557ASBUILT
03/13/08	F.B. 6, P. 5
HORZ. 1"=20'	SHEET
VERT. 1"=5'	3 OF 3

P.O. BOX 1298
YORKTOWN, VA 23692
TEL: 202-820-6800
FAX: 202-820-6800

C.E. Newbaker & Planning, Inc.
SURVEYING & PLANNING, INC.
CENewbaker@aol.com

ENVIRONMENTAL - STORMWATER
TRANSMITTAL



COUNTY PLAN NO: S-27-02

BMP ID CODE: WC079 / WC080

WATERSHED: WARE CREEK

- ENTIRE RECORD FILE (BMPs WC079 + WC080)
- ASBUILTS
- CONSTRUCTION CERTIFICATION
- COMPUTATIONS
- OTHER: _____

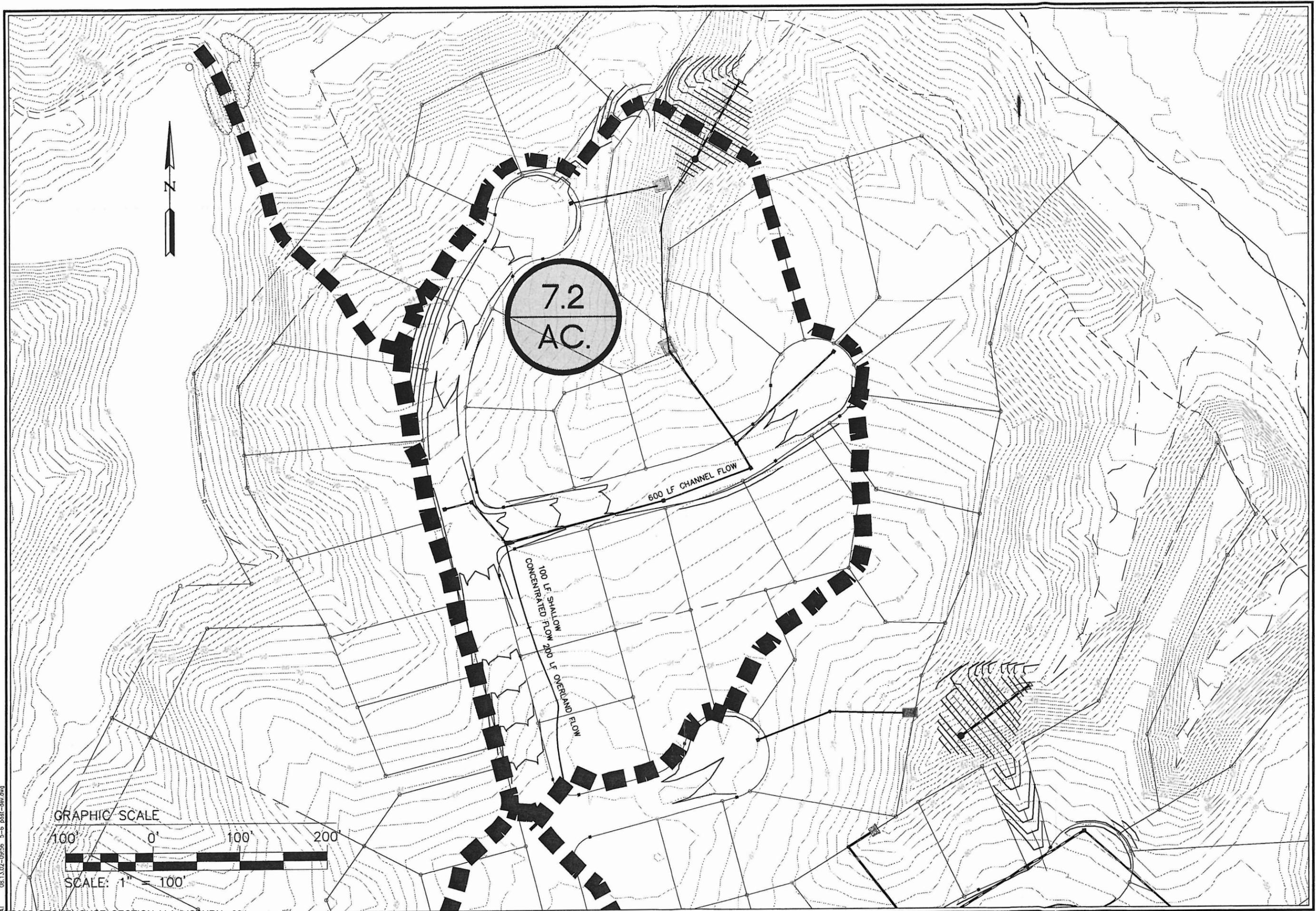
RECEIVED ON
JUN 16 '10
Stormwater Division

NAME: MIKE MATTESKI

SIGNATURE: Mike P. Matteski

DATE: 6/8/2010

08.13.02-09556_5-5 post-dwg.dwg



No.	DATE	REVISION / COMMENT / NOTE	BY

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

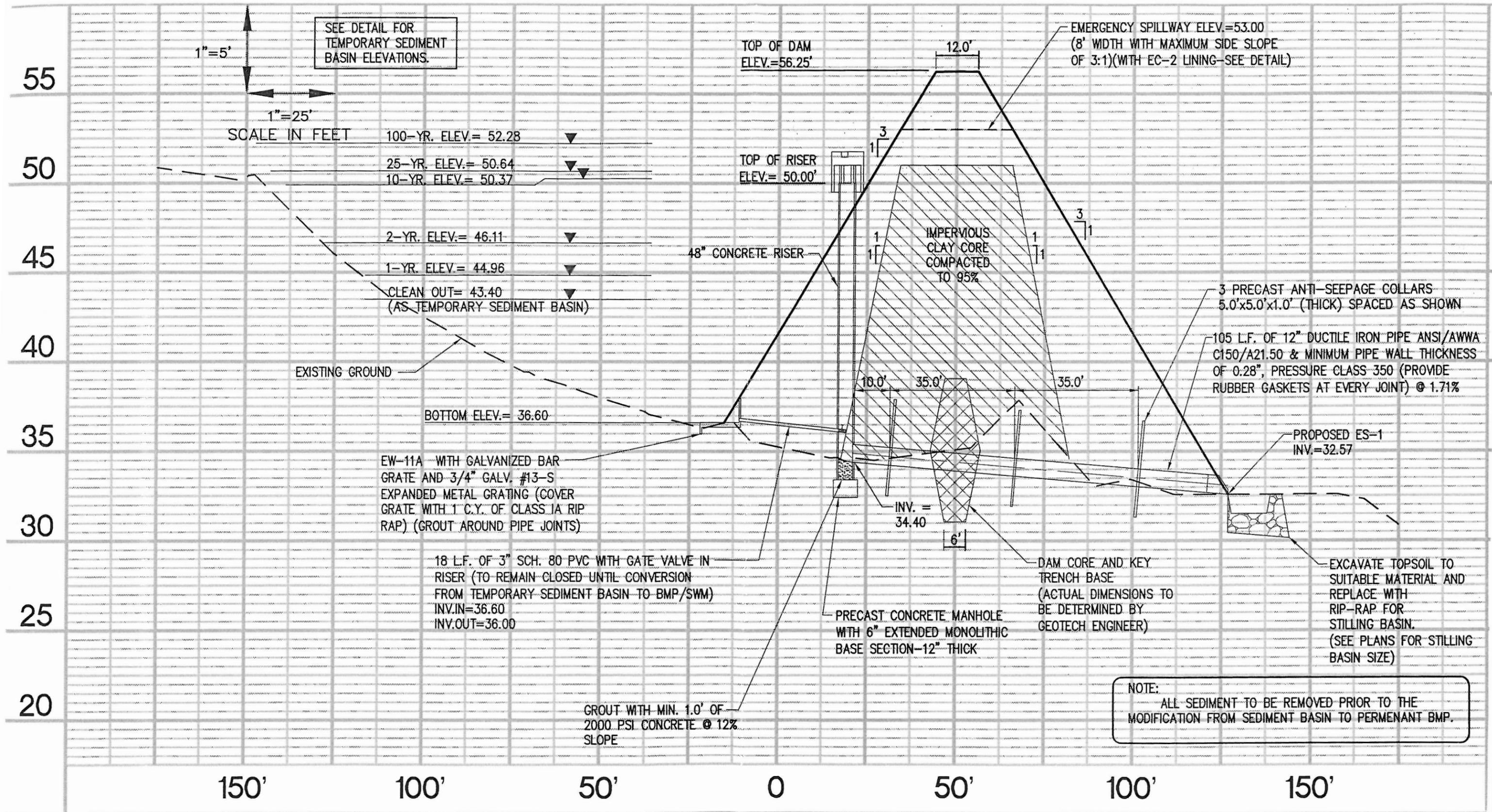


POND 5-6
 Post-Dev. Drainage Area
SECTION V-A 'LISBURN'
 AT STONEHOUSE

STONEHOUSE DISTRICT JAMES CITY COUNTY VIRGINIA

Designed AES	Drawn AES
Scale 1"=100'	Date 8/07/02
Project No. 9088-00	
Drawing No. 1 OF 1	

BMP/SWM DRY POND 5-5



NOTE:
ALL SEDIMENT TO BE REMOVED PRIOR TO THE MODIFICATION FROM SEDIMENT BASIN TO PERMANENT BMP.

BMP/SWM DRY POND 5-6

LK-079

EASEMENT

INV=32.57
STILLING BASIN
(17'L X 2.5'W)
(SEE DETAIL SHEET 23)

END x17' L x 1.5' DEEP
EROSION CONTROL STONE
PRIOR TO SITE STABILIZATION
CONSTRUCTION OF STILLING

WC-079

DRY POND 5-6

2 YR. DESIGN WSEL=47.10
10 YR. DESIGN WSEL=50.37
25 YR. DESIGN WSEL=50.64
100 YR. DESIGN WSEL=52.28

10' WIDE 6" CTA
ACCESS ROAD (SEE
DETAIL SHEET 21)

COMMON)
LOT 32.
SHEET 23)

105 LF OF 10"
CLASS III RCP
@ 1.71%

48" CONCRETE RISER (SEE
SHEET 21 FOR DETAILS)

SS #5-0
ES-1
INV=48.0 STILLING BASIN (2'L X 4'W)
(SEE DETAIL SHEET 23)

LINE 1
101 LF OF 15"
HDPE @ 21.5%

25' BUFFER/SETBACK BASED ON 100 YEAR HIGH V
DEDICATED TO THE STONEHOUSE HOMEOWNERS ASS

15' MAINTENANCE EASEMENT BASED ON 100 YEAR
BE DEDICATED TO THE STONEHOUSE HOMEOWNERS

100 YEAR HIGH WATER ELEVATION

SS #5-1
STA. 40+19
DI-3C L=6'
TYPE A NOSE
TOP=74.30
INV.OUT=69.68

SS #4-0
ES-1
INV=53.0 STILLING BASIN
(4'L X 6'W) SEE DETAIL
SHEET 23

LINE 2
154 LF OF 15"
RCP @ 0.45%

SS #
DI-3C
TYPE
TOP=
INV.0

LINE 1
133 LF OF 18"
HDPE @ 6.54%

BC= 67.34

BC= 67.60

BC= 68.38

FG= 67.72

BC= 67.14

SS #4-1
STA. 13+33
DI-3B L=4'
TYPE A NOSE
TOP=68.63

INV.IN=62.50(15")
INV.IN=63.50(18")
INV.OUT=61.70

BC= 67.40

STORMWATER MANAGEMENT/ BMP FACILITY MAINTENANCE PLAN

PROPER MAINTENANCE OF THIS FACILITY IS ENCOURAGED TO PREVENT THE INTRODUCTION OF DEBRIS AND SEDIMENT IN TO THE FACILITY, SPILLWAY(S) AND DOWNSTREAM WATERWAYS. FOLLOWING INSTALLATION OF THE FACILITY AND ESTABLISHMENT OF VEGETATION IN DISTURBED AREAS, INSPECTIONS FOR SEDIMENT BUILDUPS WILL BE PERFORMED AT LEAST QUARTERLY. IT IS ANTICIPATED THAT UNDER NORMAL CONDITIONS, SEDIMENT REMOVAL FROM THE FACILITY WILL BE REQUIRED ONCE EVERY 10 YEARS. IF OTHER CONSTRUCTION OR RELATED ACTIVITIES ARE PERFORMED ON UPSLOPE PARCELS, ADEQUATE PROTECTION SHOULD BE PROVIDED AND INSPECTIONS PERFORMED AT LEAST ONCE WEEKLY OF THESE NEWLY DISTRIBUTED AREAS AS WELL AS INSPECTIONS FOR ACCUMULATED SEDIMENTS AT TWO BMP FACILITY.

A DESIGNATED REPRESENTATIVE OF THE OWNER WILL INSPECT THE BMP STRUCTURE AFTER EACH SIGNIFICANT RAINFALL EVENT OR THE FOLLOWING WORKING DAY IF A WEEKEND OR HOLIDAY OCCURS. A SIGNIFICANT RAINFALL FOR THIS STRUCTURE IS DEFINED AS ONE (1) INCH OR MORE OF GAUGED RAINFALL WITHIN A 24 HOUR PERIOD. ONCE PER YEAR, A REPRESENTATIVE OF THE COUNTY MAY JOINTLY INSPECT THE STRUCTURE. APPROPRIATE ACTION, PERFORMED AT THE COST OF THE OWNER, WILL BE TAKEN TO ENSURE APPROPRIATE MAINTENANCE. KEYS TO LOCKED ACCESS POINTS SHALL BE MADE AVAILABLE TO COUNTY INSPECTION PERSONNEL UPON REQUEST.

INSPECTION AND MAINTENANCE OF THE FACILITY WILL CONSIST OF THE FOLLOWING ADDITIONAL MEASURES:

1. THE INSPECTION FOR SEDIMENT BUILDUP WILL BE PERFORMED BY VISUAL INSPECTION AND A PHYSICAL DETERMINATION OF SEDIMENT DEPTH WITHIN THE STORAGE AREA. SEDIMENT REMOVAL IS REQUIRED USING A RUBBER-WHEELED BACKHOE. AT THE SAME TIME, OR AT LEAST ONCE PER YEAR, THE RISER BOTTOM AND OUTLET PIPE SHALL BE CLEANED OF ACCUMULATED SEDIMENTS. DISPOSE OF SEDIMENTS REMOVED FROM THE FACILITY AT AN ACCEPTABLE DISPOSAL AREA. SEDIMENT SHALL NOT BE ALLOWED TO ACCUMULATE IN DEPTHS GREATER THAN 1-FOOT. NO SEDIMENT SHALL BE ALLOWED TO ACCUMULATE TO PREVENT THE PROPER FUNCTION OF ANY PIPE OR CULVERT.
2. PERFORM MAINTENANCE MOWING OF GRASSED AREAS AT LEAST TWICE EACH YEAR. GRASSES SUCH AS TALL FESCUE SHOULD BE MOWED IN EARLY SUMMER AFTER EMERGENCE OF THE HEADS ON COOL SEASON GRASSES AND IN LATE FALL TO PREVENT SEEDS OF ANNUAL WEEDS FROM MATURING. MOWING OF LEGUMES CAN BE LESS FREQUENT TREES AND SHRUBS SHOULD NOT BE PERMITTED TO GROW ON ANY PART OF THE GRADED EMBANKMENT.
3. PERFORM SOIL SAMPLING ON STABILIZED BMP SOIL AREAS ONCE EVERY FOUR (4) YEARS. SOIL SAMPLING AND TESTING SHOULD BE PERFORMED BY A QUALIFIED INDEPENDENT TESTING LABORATORY. APPLY ADDITIONAL LIME AND FERTILIZER IN ACCORDANCE WITH TEST RECOMMENDATIONS.
4. IN STABILIZED BMP AREAS, IF VEGETATION COVERS LESS THAN 40% OF SOIL SURFACES, LIME FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDLINGS, AS LISTED IN DAM CONSTRUCTION NOTES. IF VEGETATION COVERS MORE THAN 40% BUT LESS THAN 70% OF SOIL SURFACES, LIME FERTILIZE AND OVERSEED IN ACCORDANCE WITH CURRENT SEEDLING RECOMMENDATIONS.
5. PERFORM QUARTERLY INSPECTIONS OF THE RELEASE STRUCTURES, RISER SECTION AND CREST OF SPILLWAY FOR THE OBSERVANCE OF COLLECTED DEBRIS. IMMEDIATELY REMOVE ANY DEBRIS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE. DURING QUARTERLY INSPECTIONS, THE POND DRAIN VALVE, USUALLY LEFT IN THE VALVE "OPEN" POSITION, SHALL BE INSPECTED AND OPERATED THROUGH TWO COMPLETE FULL-OPEN TO FULL-CLOSE TO FULL-OPEN CYCLES.
6. PERFORM YEARLY STRUCTURAL INSPECTIONS OF THE FACILITY FOR DAMAGE. STRUCTURAL INSPECTION SHALL BE PERFORMED ON THE CONCRETE RISER, ANTI-VORTEX DEVICE, TRASH RACK, ORIFICE/ WEIR(S), OUTLET BARREL AND POND EMBANKMENT. IF DAMAGE IS EVIDENT, FURTHER INVESTIGATION BY A PROFESSIONAL ENGINEER MAY BE REQUIRED TO ASSESS THE CONTINUED INTEGRITY OF THE STRUCTURE.
7. PERFORM QUARTERLY INSPECTIONS OF THE GRADED SIDE SLOPES OF THE FACILITY FOR SIGNS OF ANIMAL/ RODENT BORROWS OR SLOPE EROSION. IMMEDIATELY PERFORM NECESSARY REPAIRS, REFILLING OR RESEEDING AS APPROPRIATE.
8. RECORD KEEPING. THE LANDOWNER OR DESIGNATED REPRESENTATIVE SHALL KEEP REASONABLE, ACCURATE WRITTEN RECORDS OR INSPECTIONS PERFORMED FOR THE STRUCTURE. RECORDS SHALL DOCUMENT ROUTINE MAINTENANCE AND/ OR REPAIRS PERFORMED. COPIES SHALL BE PROVIDED TO THE COUNTY UPON REQUEST.
9. THE FACILITY SHALL NOT BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT/ APPROVAL OF THE COUNTY.

Reservoir Report

Reservoir No. 1 - 5-6 BMP (PERMANENT DEEP POND)

Hydraflow Hydrographs by Intelisolve

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	36.60	01	0	0
1.40	38.00	325	228	228
3.40	40.00	804	1,129	1,357
5.40	42.00	1,505	2,309	3,666
7.40	44.00	2,427	3,932	7,598
9.40	46.00	3,587	6,014	13,612
11.40	48.00	5,153	8,740	22,352
13.40	50.00	7,228	12,381	34,733
15.40	52.00	10,636	17,864	52,597
17.40	54.00	15,239	25,875	78,472

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise in	= 12.0 ✓	3.0 ✓	0.0	0.0
Span in	= 12.0 ✓	3.0 ✓	0.0	0.0
No. Barrels	= 1	1	0	0
Invert El. ft	= 34.40 ✓	36.60 ✓	0.00	0.00
Length ft	= 105.0 ✓	0.5	0.0	0.0
Slope %	= 1.71	1.00	0.00	0.00
N-Value	= .013	.013	.000	.000
Orif. Coeff.	= 0.60	0.60	0.00	0.00
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len ft	= 12.56 ✓	8.00 ✓	110.00	0.00
Crest El. ft	= 50.00 ✓	53.00 ✓	56.25	0.00
Weir Coeff.	= 3.33 ✓	3.33	3.33	0.00
Weir Type	= Riser	Rect	Rect	---
Multi-Stage	= Yes	No	No	No

Exfiltration Rate = 0.00 in/hr/sqft Tailwater Elev. = 0.00 ft

Note: All outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	Civ D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0	36.60	0.00	0.00	---	---	0.00	0.00	0.00	---	---	0.00
1.40	228	38.00	4.93	0.27	---	---	0.00	0.00	0.00	---	---	0.27
3.40	1,357	40.00	4.93	0.43	---	---	0.00	0.00	0.00	---	---	0.43
5.40	3,666	42.00	4.93	0.54	---	---	0.00	0.00	0.00	---	---	0.54
7.40	7,598	44.00	4.93	0.64	---	---	0.00	0.00	0.00	---	---	0.64
9.40	13,612	46.00	4.93	0.72	---	---	0.00	0.00	0.00	---	---	0.72
11.40	22,352	48.00	4.93	0.79	---	---	0.00	0.00	0.00	---	---	0.79
13.40	34,733	50.00	4.93	0.86	---	---	0.00	0.00	0.00	---	---	0.86
15.40	52,597	52.00	12.40	0.01	---	---	12.27	0.00	0.00	---	---	12.28
17.40	78,472	54.00	13.05	0.01	---	---	12.64	26.64	0.00	---	---	39.29

Hydrograph Summary Report

Hyd. no.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	0.67	1	739	5,997	---	-----	-----	Pre Development
3	SCS Runoff	5.69	6	732	24,399	---	-----	-----	Post Development
5	Reservoir	0.68	6	804	24,399	3	44.96	10,499	BMP Routed
<p><u>1-yr.</u></p>									
Proj. file: 5-6 BMP.gpw				Return Period: 1 yr			Run date: 08-11-2002		

Hydrograph Summary Report

Hyd. no.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description	
1	SCS Runoff	1.97	1	736	12,084	---	-----	-----	Pre Development	
3	SCS Runoff	8.94	6	732	37,336	---	-----	-----	Post Development	
5	Reservoir	0.76	6	834	37,336	3	47.11	18,473	BMP Routed	
Proj. file: 5-6 BMP.gpw				Return Period: 2 yr			Run date: 08-11-2002			

Hydrograph Summary Report

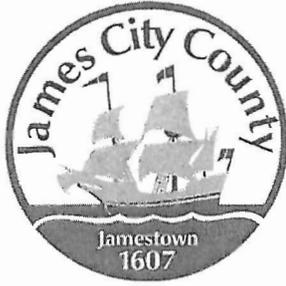
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description	
1	SCS Runoff	9.16	1	733	40,882	---	-----	-----	Pre Development	
3	SCS Runoff	21.22	6	726	86,261	---	-----	-----	Post Development	
5	Reservoir	9.86	6	750	86,261	3	50.37	37,998	BMP Routed	
Proj. file: 5-6 BMP.gpw				Return Period: 10 yr			Run date: 08-11-2002			

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description	
1	SCS Runoff	11.45	1	733	49,933	---	----	----	Pre Development	
3	SCS Runoff	24.65	6	726	99,979	---	----	----	Post Development	
5	Reservoir	11.89	6	750	99,979	3	50.64	40,455	BMP Routed	
Proj. file: 5-6 BMP.gpw				Return Period: 25 yr			Run date: 08-11-2002			

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	18.05	1	733	76,135	---	----	-----	Pre Development
3	SCS Runoff	33.94	6	726	137,659	---	----	-----	Post Development
5	Reservoir	12.38	6	750	137,659	3	52.28	56,155	BMP Routed
100-YR									
Proj. file: 5-6 BMP.gpw				Return Period: 100 yr			Run date: 08-11-2002		



April 29, 2010

Mr. Don Cotton
GCR, Inc.
P.O. Box 707
Lightfoot, VA 23090

Re: Stonehouse Phase V-A Lisburn Stormwater Management Facilities

Dear Mr. Cotton,

The Environmental Division has reviewed the record drawing and construction certification information as submitted to our office for the BMP at the above referenced project. The record drawing provides as-built information for the dry ponds located within the Lisburn Section of the Stonehouse Subdivision.

Based on our review of the project and a concurrent field inspection performed on March 4, 2010, the following items must be addressed prior to release of the developer's surety instrument for the drainage and stormwater management facilities and proceeding with closing out the project:

Inspection Maintenance Agreement:

Based on a review of our active file and records for the project the James City County Environmental Division required a Declaration of Covenants to be executed with the County for the BMP facility for this project. After a review of county records, the aforementioned documents are satisfactory.

Construction Certification:

The Construction Certification information and status for the pond is as follows:

Stonehouse Lisburn-WC079 (Dry Pond), Dated 12/7/09 Construction Certification;

- The final sentence of the Record Drawing Certification has been lined out by the licensed professional providing the certification. This appears to indicate that the facility to which the certification applies is not consistent with the plan information. Be advised that modified

certifications cannot be approved and removal of this specific line nullifies the certification. If the professional would like to note specific items that deviate from the approved plans, those items should be noted with the signature sheet. This is the purpose of the record drawing certification.

-No information was provided with respect to the installation of the anti-seep collars or the elevations associated with the impervious clay core. If this information is not provided with the application, the bonds cannot be released.

Stonehouse Lisburn-WC080 (Dry Pond), Dated 12/7/09 Construction Certification;

- The final sentence of the Record Drawing Certification has been lined out by the licensed professional providing the certification. This appears to indicate that the facility to which the certification applies is not consistent with the plan information. Be advised that modified certifications cannot be approved and removal of this specific line nullifies the certification. If the professional would like to note specific items that deviate from the approved plans, those items should be noted with the signature sheet. This is the purpose of the record drawing certification.

-No information was provided with respect to the installation of the anti-seep collars or the elevations associated with the impervious clay core. If this information is not provided with the application, the bonds cannot be released.

Record Drawing:

The Record Drawing information and status for the pond is as follows:

Stonehouse Lisburn-WC079 (Dry Pond), Dated 12/7/09 Record Drawing;

-Show access and maintenance easement and access road for this facility as located in the field.

Stonehouse Lisburn-WC080 (Dry Pond), Dated 12/7/09 Record Drawing;

-Show access and maintenance easement and access road for this facility as located in the field.

Construction-Related:

Stormwater Conveyance System

- Repair subsidence around structure SS #1-1 at the common rear property line of Lots 108 and 109.

-Remove Silt Fence from around the outfall at structure SS#1-0.

-Repair subsidence around structure SS#6-1.

-Provide all appropriate dimensions for the stilling basin at the outfall of structure SS#2-0.

Stonehouse Lisburn Dry Pond WC079:

-Clean sediment from low flow orifice grate and from within the limits of the EW-11 structure.

-Clean sediment from the primary outfall area and within the limits of the rip rap stilling basin.

-Remove all remaining temporary erosion and sediment control measures.

- Provide all appropriate dimensions for the stilling basin at the pond outfall.
- Remove pipes from within the twin 24" spillway pipes.

Stonehouse Lisburn Dry Pond WC080:

- Repair erosion above and around primary pond inflow pipe and within the limits of the EW-11 structure.
- Repair erosion that exists above the primary pond outfall pipe and within the limits of the rip rap stilling basins.
- Clean sediment from the low flow orifice grate.
- Remove all remaining temporary erosion and sediment control measures.
- Provide all appropriate dimensions for the stilling basin at the pond outfall.

Once this work has been satisfactorily completed, contact our office so that a re-inspection of the facility may be performed. It is then that the final release of surety and closing out the project may be performed. After the above items are adequately addressed, one reproducible and one blue/black line set of the record drawings must be submitted to the Environmental Division per county requirements.

If you have any further comments or questions, please feel free to contact me at 253-6839, or the Chief Civil Engineer, Bill Cain at (757) 253-6702.

Sincerely,

Michael Majdeski
Senior Environmental Inspector
JCC Environmental Division
(757) 253-6839
mmajdeski@james-city.va.us

MPM

CC: Bill Cain, Chief Engineer; JCC Environmental Division

From: Michael Majdeski
Sent: Thursday, March 04, 2010 3:11 PM
To: 'gcrinco@aol.com'
Subject: Stonehouse Lisburn Stormwater Management Ponds Punchlist-Att. Keisha

Keisha, (If I spelled your name wrong please forgive me!)

Don informed me that he is out of town and wanted me to get this punch-list to you so you may forward it to the appropriate parties in your organization while he is gone. I will be happy to meet with Mark and Clem at their convenience to go over any questions that they may have about this list. Just have them give me a call at 253-6839.

Pond Adjacent to East Cork Drive:

- Repair and re-stabilize the eroded area around the primary inflow pipe that leads into the pond.
- Repair minor erosion that exists just above the primary outflow pipe.
- Clean out sediment from the grate surrounding the low flow orifice pipe within the pond.

Pond at the end of Splitwood Drive

- Clean sediment from area just below the primary outflow pipe within the outlet protection.
- Clean out sediment from the grate surrounding the low flow orifice pipe within the pond.

In addition please remove all temporary erosion and sediment control measures that may still be in place around the ponds including any silt fence and straw bales. Silt fence may be removed by cutting the stakes at ground level opposed to pulling up the fencing.

Thank you for your assistance in this matter!

Mike Majdeski

Michael P. Majdeski
Senior Environmental Inspector
James City County Environmental Division
(757) 253-6839
101 Mounts Bay Road-E
Williamsburg, VA 23187

G.C.R., INC.
A Virginia Corporation
Post Office Box 707
Lightfoot, VA 23090
Phone: 757-220-2091
Fax: 757-220-9012

Environmental Division

JUN 02 2010

June 2, 2010

RECEIVED

Mike Majdeski
Sr. Environmental Inspector
JCC Environmental Division
101 Mounts Bay Rd. – E
Williamsburg, VA 23187

RE: Stonehouse- Lisburn Stormwater Management Ponds

Dear Mike,

Please see the attached package for your review regarding the Stonehouse – Lisburn “Ponds”. The work is completed per your punch list dated 3/4/10. Please contact me to schedule a walk of these items for the final approval.

The following package encloses:

- Copy of your punch list to G.C.R., Inc. dated 3/4/10
- ECS Letter dated 5/18/10
- Stormwater Management / BMP Facilities Record Drawing and Construction Certification
- 2- Copies of Storm Drain As-Builts plans

Thank you in advance for your assistance in this matter.

Sincerely,

Mark Strawn
Superintendent
(757) 592-8840

COPY

Subj: **Stonehouse Lisburn Stormwater Management Ponds Punchlist-Att. Keisha**
Date: 3/4/2010 3:10:37 P.M. Eastern Standard Time
From: MMajdeski@james-city.va.us
To: gcrinco@aol.com

Keisha, (If I spelled your name wrong please forgive me!)

Don informed me that he is out of town and wanted me to get this punch-list to you so you may forward it to the appropriate parties in your organization while he is gone. I will be happy to meet with Mark and Clem at their convenience to go over any questions that they may have about this list. Just have them give me a call at 253-6839.

Pond Adjacent to East Cork Drive:

- Repair and re-stabilize the eroded area around the primary inflow pipe that leads into the pond.
- Repair minor erosion that exists just above the primary outflow pipe.
- Clean out sediment from the grate surrounding the low flow orifice pipe within the pond.

Pond at the end of Splitwood Drive

- Clean sediment from area just below the primary outflow pipe within the outlet protection.
- Clean out sediment from the grate surrounding the low flow orifice pipe within the pond.

In addition please remove all temporary erosion and sediment control measures that may still be in place around the ponds including any silt fence and straw bales. Silt fence may be removed by cutting the stakes at ground level opposed to pulling up the fencing.

Thank you for your assistance in this matter!

Mike Majdeski

Michael P. Majdeski
Senior Environmental Inspector
James City County Environmental Division
(757) 253-6839
101 Mounts Bay Road-E
Williamsburg, VA 23187

Environmental Division

JUN 02 2010

RECEIVED



James City County Environmental Division Stormwater Management / BMP Inspection Report Detention and Retention Pond Facilities

County BMP ID Code (if known): WC079

Name of Facility: STONEHOUSE-LISBURN SWM BMP No.: 1 of 2 Date: 3/4/2010

Location: ADJACENT TO CULDESAC ON SPLITWOOD DRIVE

Name of Owner: GCR, INC.

Name of Inspector: MIKE MAJDESKI

Type of Facility: DRY DETENTION BASIN

Weather Conditions: _____ 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 to 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
Embankments and Side Slopes:				
Grass Height	✓			
Vegetation Condition	✓			
Tree Growth	✓			
Erosion	✓			
Trash & Debris	✓			
Seepage	✓			
Fencing or Benches	✓			
Interior Landscaping/Planted Areas: <input type="checkbox"/> None <input type="checkbox"/> Constructed Wetland/Shallow Marsh <input checked="" type="checkbox"/> Naturally Established Vegetation				
Vegetated Conditions	✓			
Trash & Debris	✓			
Floating Material	N/A			
Erosion	✓			
Sediment	✓			
Dead Plant	✓			
Aesthetics	✓			
Other				
Notes:				

Facility Item	O.K.	Routine	Urgent	Comments
Nuisance Type Conditions:				
Mosquito Breeding	✓			
Animal Burrows	✓			
Graffiti	✓			
Other				
Surrounding Perimeter Conditions:				
Land Uses	✓			RESIDENTIAL AREA
Vegetation	✓			
Trash & Debris	✓			
Aesthetics	✓			
Access /Maintenance Roads or Paths	✓			
Other				
Remarks:				
3/4/2010 - REMOVE SEDIMENT FROM LOW FLOW ORIFICE + OUTFALL AREA				
Overall Environmental Division Internal Rating: <u>4/5</u>				
Signature: <u>M. P. M. M.</u>			Date: <u>3/4/2010</u>	
Title: <u>SENIOR ENVIRONMENTAL INSPECTOR</u>				

SWMPProg\BMP\CoInspProg\InspForms\DetRet.wpd

The Association at Stonehouse, Inc.

May 14, 2012

James City County
Stormwater Management Division
101 Mounts Bay Rd.
PO Box 8784
Williamsburg VA 23187-8784
Attn: Mr. Patrick T. Menichino

Subject: 2010 Stormwater Management Facility (BMP) Inspection Findings

References: (a) JCC/Stormwater Division, six letters addressing BMPs WC040, WC041, WC071, WC073, WC079, WC080, all dated 3 April 2012.
(b) JCC/Stormwater Division, six letters addressing BMPs WC025, WC041, WEC071, WC073, WC080, all dated February 2013.

Mr. Menichino,

Please let me take a few minutes to bring you up to date on the actions we have taken to close the referenced inspection findings. Your letters and previous visit to assist our Grounds and Maintenance Committee were most helpful and resulted in the following actions and long-term commitments:

- A self-inspection and inventory of all components for the 21 BMPs was completed in 2012;
- Our BMP maintenance contract has been completely rewritten and competed to address more thorough maintenance of all BMP components. The new contract was just awarded on 8 May 2013; and
- We are now in the process of updating our Reserve Study to include all BMP components for long-term planning and replacement.

Through volunteer and contracted actions, we have addressed all of the open inspection findings. Our volunteers have cut and stacked well over 1,200 small to medium sized trees that were growing on the dams and in the spillways. Other findings have been addressed through contract actions. I believe that we now have the best and most proactive BMP maintenance program of any community in James City County.

More specific information concerning our corrective actions for each of the open findings are as follows:

1. BMP WC025, 9330 Fieldstone Parkway, 1/7/2010. This inspection finding addressed a "vegetated filter strip" BMP on Fieldstone Parkway.



Conflict in Finding: BMP WC025 is located on Mill Pond Run and is a detention pond. Additionally, BMP WC081 is located at 9330 Fieldstone Parkway and we have been notified by the James City County Environmental Division that it will be extensively rebuilt when Land Bay 3 is developed. *COORDINATE W/ERP + SITE PLANS*

2. BMP WC040, Hollow Oak Drive, 1/14/2010. This finding addressed erosion at the inlet discharge point.

Corrective Actions: The Association contracted major work with heavy machinery to correct this problem in 2011. Additionally, trees and wooded vegetation were cleared from the dam top and sides, spillway channel, and outflow basin areas in 2013 to bring this BMP within acceptable standards.

3. BMP WC041, Oak Branch Drive, 1/12/2010. This finding addressed problems at the inlet discharge pipe to include erosion, excessive sediment, and separation at the top of flared end-section of discharge pipe. It also addressed erosion at outlet discharge pipe and debris and trees around the outlet.

Corrective Actions: Routine quarterly maintenance cleared debris and unblocked outlet discharge points. In 2013, all trees and wooded vegetation were cut and removed from the dam top and sides, around the inlet discharge pipe, the overflow spillway, and the outlet settlement basin. On 8 May 2013, a contract work order was approved to remove sediment from the inlet discharge pipe settlement basin and to repair the separation of the flared outlet discharge pipe. These repairs are scheduled to be accomplished before the end of May 2013 to bring this BMP within acceptable standards.

4. BMP WC071, Longwood Drive, 1/11/2010. This finding addressed subsidence around the principal spillway.

⇒ Corrective Actions: On 7 May 2013, Mr. William Cain, the Chief Civil Engineer for James City County, inspected the principal spillway riser and advised that it could be repaired from the inside by application of an elastic polymer based grout to seal the minor opening at the top of the outlet discharge pipe where it joins to the vertical riser. He further advised that the eroded area behind the principal spillway riser can then be simply back-filled with a clay based soil. The Association will issue contract work orders to accomplish this work prior to 31 May 2013. Additional actions accomplished in 2013 included cutting and removing all trees and wooded vegetation from the dam tops and sides, overflow spillway channel, and around the outlet discharge settlement basin. The above actions will bring this BMP within acceptable standards by the end of May 2013.

5. BMP WC073, Windy Branch Drive, 1/11/2010. This finding addressed erosion and debris at the inlet discharge point, a blocked outlet structure and channel, removal of trash and debris, and removal of woody vegetation from embankments and spillways.

Corrective Actions: Routine quarterly maintenance has removed trash and debris. In 2013, all trees and wooded vegetation were cut and removed from the dam top and sides, emergency spillways, and inlet settlement basins. On 8 May 2013, a contract work order was approved to remove two large fallen trees that are blocking access to the

outflow discharge pipe and settlement basin at the base of the dam. This work is scheduled to be accomplished prior to the end of May 2013. These collective corrective actions will bring this BMP within acceptable standards by the end of May 2013.

6. BMP WC079, Splitwood Road, 1/8/2010. These findings included erosion at the inlet discharge point, excessive accumulation of sediment in the pond basin, reestablishment of ground cover in the basin bottom and side slopes, lack of routine maintenance, excessive debris, and areas of erosion or slippage on side slopes.

Corrective Actions: In 2011, the developer addressed and repaired the majority of these problems. In 2012, the Association contracted for additional repair of erosion based slippage of riprap on side slopes, rebuilding of inlet settlement basins, and reestablishment of ground cover on the slopes. In 2013, all wooded vegetation and trees were cut and removed from the dam top and sides, spillway channels, and around the outlet discharge settlement basin. These actions have brought this BMP to acceptable standards.

7. BMP WC080, E. Cork Road, 1/8/10. These findings included erosion along inlet pipes and flared end sections, realignment of flared end section of inlet adjacent to emergency spillway, and sink holes adjacent to the outlet pipe.

Corrective Actions: On 8 May 2013, a contract work order was approved to correct for erosion in and around all inlet discharge points, the riprap channel in the pond basin, and to correct for the erosion/sink holes at the outlet discharge point. Additionally, in 2013 all trees and wooded vegetation were cut and removed from the dam top and sides, emergency spillways, and outlet discharge areas. These actions will bring this BMP within acceptable standards by the end of May 2013.

Note: The James City County Environmental Division advises that the inlet discharge pipe adjacent to the emergency spillway is in accordance with their approved construction plans and there is no need for the Association to realign the flared end section.

From the Association's viewpoint, the above actions have addressed all open inspection findings necessary to bring these BMPs back to acceptable standards. Please accept our apologies for the extended time frame in responding to the inspection findings and let me know if you have questions or need additional information.

Sincerely,



Ellen Clark, CMCA, AMS, PCAM
Association Manager



JAMES RIVER
LANDSCAPE MANAGEMENT

THIS IS NOT AN INVOICE

JAMES RIVER GROUNDS MANAGEMENT, INC.
4614 ROCHAMBEAU DRIVE
WILLIAMSBURG, VA 23188
(757) 566-1800 FAX (757) 566-4334

COPY

TO: THE ASSOCIATION AT STONEHOUSE, INC PROPERTY: STONEHOUSE (BMP WC 73) 9701 MILL POND ROAD TOANO, VA 28168	QUOTE#: DATE: 4/8/2013 TERMS:
--	--

QTY/ HOURS	ITEM / DESCRIPTION	CHARGE	TOTAL CHARGE
---------------	--------------------	--------	-----------------

SCOPE OF WORK INCLUDES THE FOLLOWING TO BE COMPLETED AT BMP WC 73.
REMOVAL OF FALLEN OAK TREE FROM THE BACKSIDE OF DAM TO CLEAR OUTFLOW.
TREE WILL BE CUT BACK 8-10 FROM UP-ROOTED STUMP

LABOR / SITE PREP:	\$600.00	\$600.00
--------------------	----------	----------

ALL DEBRIS WILL BE CHIPPED ON SITE AND DISPURSED

SUBTOTAL:	\$600.00
VA TAX:	\$0.00

APPROVED BY & DATE:
5/13/13
AUTHORIZED SIGNATURE
THIS QUOTE IS VALID FOR 30 DAYS.

TOTAL DUE	\$600.00
------------------	-----------------

WARRANTY: We will replace one-time any plant 90 days from the date of installation. We are not obligated to replace any plant that dies as a result of improper care, drought, freezing, vandalism, theft, poor drainage, inadequate irrigation, or neglect. Sod carries no warranty but is guaranteed to be of good quality. Transplanted material carries no warranty. Annual plantings carry no warranty.
****By executing this quote I hereby agree (1) to pay interest on any past due amount at a rate of 18 percent (18%) per annum (1.5 percent per month of the outstanding balance); and (2) to pay all costs and expenses, including court costs and reasonable attorneys' fees, incurred in the collection of any past due amount.**



THIS IS NOT AN INVOICE

JAMES RIVER GROUNDS MANAGEMENT, INC.
4614 ROCHAMBEAU DRIVE
WILLIAMSBURG, VA 23188
(757) 566-1800 FAX (757) 566-4334

COPY

TO: THE ASSOCIATION AT STONEHOUSE, INC PROPERTY: STONEHOUSE (BMP WC 80) 9701 MILL POND ROAD TOANO, VA 23168	QUOTE#: DATE: 4/8/2013 TERMS:
--	--

QTY/ HOURS	ITEM / DESCRIPTION	CHARGE	TOTAL CHARGE
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SCOPE OF WORK INCLUDES THE FOLLOWING TO BE COMPLETED AT BMP WC 80.
ADDDION OF CLASS A RIP RAP STONE AROUND RIGHT SIDE OF UPPER OUTFLOW PIPE AND ERODED AREAS ALONG THE MAIN DRIAN FLOW THROUGHOUT THE BOTTOM CENTER OF BASIN FLOOR.

MATERIALS:

3 TONS OF CLASS A RIP-RAP (GREY)	\$55.70 P/T	\$167.10
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LABOR / SITE PREP:

(INCLUDES TRACT SKIDSTEER)	\$385.00	\$385.00
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SUBTOTAL: \$552.10

VA TAX: \$8.35

TOTAL DUE \$560.45

APPROVED BY & DATE:

[Signature] 5/13/13
AUTHORIZED SIGNATURE

THIS QUOTE IS VALID FOR 30 DAYS.

WARRANTY: We will replace one-time any plant 90 days from the date of installation. We are not obligated to replace any plant that dies as a result of improper care, drought, freezing, vandalism, theft, poor drainage, inadequate irrigation, or neglect. Sod carries no warranty but is guaranteed to be of good quality. Transplanted material carries no warranty. Annual plantings carry no warranty.
 **By executing this quote I hereby agree (1) to pay interest on any past due amount at a rate of 18 percent (18%) per annum (1.5 percent per month of the outstanding balance); and (2) to pay all costs and expenses, including court costs and reasonable attorneys' fees, incurred in the collection of any past due amount.

THIS IS NOT AN INVOICE



JAMES RIVER GROUNDS MANAGEMENT, INC.
4614 ROCHAMBEAU DRIVE
WILLIAMSBURG, VA 23188
(757) 566-1800 FAX (757) 566-4334

COPY

TO: THE ASSOCIATION AT STONEHOUSE, INC	QUOTE#:
PROPERTY STONEHOUSE (BMP WC 41) 9701 MILL POND ROAD TOANO, VA 23168	DATE 4/8/2013
	TERMS:

QTY/ HOURS	ITEM / DESCRIPTION	CHARGE	TOTAL CHARGE
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SCOPE OF WORK INCLUDES THE FOLLOWING TO BE COMPLETED
AT BMP WC 41.
REMOVAL OF SEDIMENT FROM OUTFLOW COLLECTION BASIN, THE SEDIMENT WILL
DISPURSED ON THE DOWN SIDE OF DAM.
EXCAVATING SECTION ABOVE OUTFLOW PIPE TO INSTALL GEO-TEXTILE FABRIC
AND 57 STONE TO KEEP FUTURE SEDIMENT FROM ENTERING CRACK IN THE
LAST CONNECTION.

LABOR / SITE PREP: \$590.00 \$590.00
(INCLUDES MINI EXCAVATOR)

MATERIALS:
1 GEO TEXTILE FABRIC \$15.00 P/P \$15.00
0.5 YARD OF 57 STONE (1-2" GREY) \$38.50 P/Y \$19.25

SUBTOTAL: \$624.25

VA TAX: \$1.71

TOTAL DUE \$625.96

APPROVED BY & DATE:

[Signature] 5/13/13
AUTHORIZED SIGNATURE

THIS QUOTE IS VALID FOR 30 DAYS.

WARRANTY: We will replace one-time any plant 90 days from the date of installation.
We are not obligated to replace any plant that dies as a result of improper care, drought, freezing, vandalism, theft,
poor drainage, inadequate irrigation, or neglect. Sod carries no warranty but is guaranteed to be of good quality.
Transplanted material carries no warranty. Annual plantings carry no warranty.
**By executing this quote I hereby agree (1) to pay interest on any past due amount at a rate of 18 percent (18%) per
annum (1.5 percent per month of the outstanding balance); and (2) to pay all costs and expenses, including court costs
and reasonable attorneys' fees, incurred in the collection of any past due amount.



REQUEST FOR PROPOSALS
Stormwater Detention Pond (BMP) Maintenance

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This Request for Proposals (RFP) is issued by The Association at Stonehouse, Inc., and is for professional maintenance service of specified Stormwater Detention Ponds (BMPs) located in the common areas owned and maintained by The Association at Stonehouse for its resident membership.

Response to this RFP is requested no later than 4-9-13. Replies to and questions about this RFP should be forwarded to:

The Association at Stonehouse, Inc.
9701 Mill Pond Run
Toano, VA 23168
Tel: 757- 566-0128
Fax: 757- 566-1198
Email: manager@mpstonehouse.com

Contractor bids are requested for the services specified in the following pages for the remainder of base calendar year January 1 - December 31, 2013, with two contract option years that may be exercised by the Association for calendar years 2014 and 2015.

Contractor bids shall clearly identify costs for each major area of work specified in Exhibit A.

This RFP includes the following information:

BMP Maintenance Contract.....	Page 2
Remuneration Schedule	Page 5
Exhibit A	
Statement of Work	Page 6
Scope of Work.....	Page 6
BMP Management & Maintenance Requirements.....	Page 7
Additional Services & Obligations.....	Page 8
Exhibit B, BMP Maintenance Component List.....	Page 9
Exhibit C, Site Plan Identifying all BMP Locations.....	Page 10

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STORMWATER DETENTION POND (BMP) MAINTENANCE CONTRACT
BY AND BETWEEN _____ AND
THE ASSOCIATION AT STONEHOUSE, INC.

This Stormwater Detention Pond (BMP) Maintenance Contract ("Agreement") dated 4-9-13, 2013 between JAMES RIVER CROWDS MGMT. a Virginia Corporation (also referred to herein as "Contractor"), and The Association at Stonehouse, Inc. a Virginia non-stock corporation (also referred to herein as "Association") provides:

Recitals

Association desires to hire and engage Contractor to provide certain maintenance services in the Association's common areas as more particularly set forth in the attached specifications described as Exhibits A, B, and C which exhibits are expressly incorporated herein by reference and made a part hereof.

Terms and Conditions

Now, therefore, in consideration of the terms and conditions herein contained and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Contractor and Association agree as follows:

1. Contractor agrees to perform the services outlined in Exhibit A attached hereto. The relationship between Contractor and Association is that of an independent site support services contractor and not a partner, joint venture, employer, etc. Contractor shall be responsible for the selection and supervision of its employees, the payment of all their payroll taxes, insurance benefits and workman's compensation associated therewith. All employees and subcontractors hired by the Contractor shall be lawfully entitled to work in the United States. Contractor shall be fully liable for and hereby indemnifies and agrees to hold harmless the Association, its Board of Directors, agents and unit owners from any and all violations of federal immigration laws as the result of the immigration status of any of its subcontractors or employees.

2. Contractor shall be compensated for services rendered in accordance with the Remuneration Schedule and in accordance with the other provisions of this Agreement. Association reserves the right to offset against any payment made to Contractor any expenses incurred by the Association in performing any of the Contractor's obligations hereunder should Contractor fail to perform such obligations.

3. Association may direct Contractor to perform additional service for which Association shall bear all expenses. Contractor shall not incur any such additional expense without the prior written approval of the Association. The parties shall sign written agreements specifying the work and listing all costs of any additional services requested or required by the Association.

4. Contractor hereby indemnifies and holds Association, its directors, employees, agents or assigns harmless from all liability, damages, causes of actions, suit or judgment arising from injury to persons or property on the site, which may arise from a breach of this Agreement by Contractor or any negligent or intentional act of Contractor or its agents, subcontractors or employees. The provisions of this Section shall survive the expiration or termination of this Agreement.

5. Contractor's Insurance, Licenses and Permits. At the time the Contract is executed, the Contractor must produce proof of insurance coverage as follows:

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- a. Certificate of Liability Insurance providing:
 - 1) Property damage in an amount equal to or more than \$500,000.00 minimum;
 - 2) Bodily injury with a limit of not less than \$1 million for each person and for each accident;
 - 3) If motor vehicles are used, automobile (or truck) bodily injury with a limit of not less than \$1 million for each accident and property damage liability with a limit of not less than \$500,000.00 for each accident;
 - b. Workmen's Compensation insurance for all employees on Association property; and
 - c. The Association at Stonehouse and its managing agent shall be named as additional insured on all the above policies.
 - d. In addition to the above required insurance, the Contractor shall, at a minimum, maintain and provide proof of the following: State of Virginia Class A Contractors License, Business License, Business Pesticide License with Insurance, and Virginia Registered Commercial Applicators License.
 - e. Contractor shall maintain the insurance set forth and described above during the term of this agreement. Failure to maintain the required insurance, licenses and/or permits will result in immediate termination of the Contract.

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6. Contractor shall be liable for damages to any person or property while performing duties as outlined in Exhibit A, attached hereto.

7. Contract oversight and point of contact for all Contractor inquiries is through the Association Manager for the Board of Directors (BOD). The Association Manager may appoint a Contract Officer Representative (COR) to perform inspection and acceptance of Contractor's work.

8. This Agreement may be terminated at the discretion of the Association upon thirty (30) days written notice to the Contractor without any further obligation or liability hereunder, except as otherwise expressly provided for herein. Upon such termination, Contractor shall only be entitled to receive such remuneration as it would otherwise be entitled to receive hereunder through the date of termination.

9. In addition to any other rights it might have under this Agreement, the Association may withhold any amounts due Contractor under this Agreement which the Association deems necessary to reimburse the Association for any costs or liabilities incurred by the Association as the result of the Contractor's actions or omissions, or failure to fairly perform any or all service obligations in a satisfactory manner. Appropriate adjustments to these withholdings shall be made when the exact amounts owed by the Contractor are determined by the Association Manager.

10. A waiver by the Association of any breach of any term or condition hereof shall not be deemed a waiver of any other, or subsequent breach. In the event of a breach of this Agreement by Contractor, the Association shall have the right to pursue its legal remedies and the right to terminate the Agreement. In the event either party to this Agreement is required to file a legal action due to a breach hereof, the costs of the action, including, but not limited to, reasonable attorney's fees as determined by the Court shall be paid to the prevailing party.

11. This Agreement shall be interpreted and enforced in accordance with the laws of the Commonwealth of Virginia. Both parties hereto expressly agree that if legal action is required to interpret or enforce this Agreement, said action shall be filed in the appropriate court in James City County, Virginia.

44 12. In the event that any part or provision of this Agreement shall be adjudged unlawful or
45 unenforceable under Virginia law, any lawful intent of the provision and the remainder of this Agreement
46 shall nonetheless survive and remain in full force and effect.

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48 13. Contractor shall ensure all employees and subcontractors while on Association Common Areas are
49 in uniform, i.e., hat and shirt clearly marked with company logo, and present a neat and orderly appearance
50 at all times.

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52 14. Contractor shall use due care, skill and diligence in the performance of its obligations under this
53 Agreement. All services and work to be performed under this Agreement shall be performed in accordance
54 with accepted standards of the profession or trade.

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56 15. This Agreement may not be assigned by Contractor without the prior written approval of the
57 Association, which approval can be withheld in the Association's sole discretion.

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59 16. Each of the undersigned, by evidence of their signature thereto, affirms that it has the authority to
60 bind their respective party to this Agreement.

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62 17. Notices allowed or required pursuant to this Agreement shall be either hand delivered or sent by
63 United States mail, postage paid, to the addresses of the parties set forth below:

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65 a. To the Association: The Association at Stonehouse, Inc.
66 9701 Mill Pond Run
67 Toano, Virginia 23168
68 Attn: Association Manager

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70 b. To the Contractor: JAMES RIVER GROUNDS MANAGEMENT
71 4614 ROCHAMBEAU DRIVE
72 WILLIAMSBURG, VA 23188
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75 18. This Agreement may not be amended except by a written document signed by both parties.

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77 19. The Parties hereto agree to keep the terms, conditions, and remuneration for this Agreement
78 confidential.

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80 20. This Agreement shall not automatically renew itself without the express written consent of the
81 Association.

Remuneration Schedule

This contract is for the base year 2013, with two option years 2014 & 2015.

For the base contract period beginning MAY, 2013 and ending December 31, 2013, Association shall pay Contractor an annual fee of: \$ # 11,865.00 in equal monthly payments of \$ 988.75.

For the option contract period beginning January 1, 2014 and ending December 31, 2014, Association shall pay Contractor an annual fee of: \$ ~~15,876.00~~ 15,180.00 in equal monthly payments of \$ ~~1318.00~~ 1265.00 *PR*

For the option contract period beginning January 1, 2015 and ending December 31, 2015, Association shall pay Contractor an annual fee of: \$ ~~15,876.00~~ 14,868.00 in equal monthly payments of \$ ~~1318.00~~ 1239.00 *PR*

Payment shall be due within thirty (30) days of receipt of written request for payment thereof, which payment shall be subject to the terms and conditions of the Agreement.

The Association shall provide Contractor written notice sixty (60) days prior to the end of the contract period if it wants to exercise the above option contract periods.

Contractor: [Signature]

By: DALE C. O'CONNELL
BRANCH MANAGER

Date: 4-9-13

The Association at Stonehouse, Inc.

By: [Signature]

Date: 5-13-13

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41 **1. STATEMENT OF WORK**

42 This Statement of Work (SOW) is issued by the Association at Stonehouse, Inc. and is specifically for the
43 maintenance of all stormwater detention ponds (BMPs) located in the common areas of the Mill Pond at
44 Stonehouse community.

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46 **A. Background.** The Association owns and is responsible for the maintenance of twenty-one (21) dry
47 stormwater detention pond BMPs. Fifteen (15) of these BMPs are built around earth berm dams, two (2)
48 BMPs have concrete block dams, and four (4) BMPs have timber dams. The structural components of each
49 BMP are as delineated in Exhibit B. The locations of all BMPs are as delineated in Exhibit C.

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52 **B. Objectives.**
- 53 1. The Association's objectives are to ensure all twenty-one (21) BMPs meet requirements of the
 - 54 Chesapeake Bay Preservation ordinances of the Code of James City County, Virginia; and
 - 55 2. The objective of this contract is to provide routine quarterly maintenance for all components of
 - 56 each BMP, to include, but not be limited to, the pond basin, dam tops and sides, all inlet and
 - 57 outlet structures, drain boxes and grates, overflow spillways, riprap protected channels and
 - 58 settlement basins.

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60 **2. SCOPE OF WORK**

61 **A. General Contract Requirements.** The Contractor shall:

- 62 1. Maintain the twenty-one (21) BMPs year round with maintenance accomplished on a quarterly
- 63 basis;
- 64 2. Provide all materials, labor and equipment required to complete all aspects of BMP maintenance
- 65 work at each maintenance visit;
- 66 3. Ensure a response time of 48 hours for any BMP problem related to this contract;
- 67 4. Provide the Association with consultation upon request to assist in resolving problems associated
- 68 with BMPs at no additional cost;
- 69 5. Notify the Association Manager one week prior to all maintenance visits and when the work is
- 70 done; and
- 71 6. Provide written quarterly status reports to the Association Manager of work accomplished during
- 72 each maintenance visit. The reports shall include problems encountered, changes required, and/or
- 73 additional work recommended.

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76 **B. Personnel.** The Contractor shall:

- 77 1. Provide the personnel necessary to service and maintain the BMPs;
- 78 2. Provide dedicated on-site supervision of its employees during all visits to Stonehouse to clearly
- 79 assign and review all work accomplished to ensure Association property is maintained in a
- 80 consistent and professional manner;
- 81 3. Provide training for on-site employees to include maintenance and equipment operation
- 82 procedures which are specific to the common areas, instructions and necessary certifications
- 83 concerning BMP maintenance and chemical applications, and the professional conduct and
- 84 courtesy expected of all employees at all times when working on Association property;

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4. Ensure all work is performed in a manner that meets applicable OSHA regulations and is safe to its operators, residents, guests, and any pedestrian or vehicle in close proximity to operational machinery;
 5. Ensure the On-site Supervisor meets with the Association Manager on a quarterly basis to tour the BMPs and/or discuss maintenance issues or problems encountered. Additional meetings may be called at any time by the Association Manager on an as-needed basis; and
 6. In the performance of the work, the Contractor and its employees shall comply with all applicable state and county laws, statutes, regulations and instructions issued that pertain to maintenance of stormwater detention ponds, to include all applicable environmental, safety, and security requirements issued by governmental officials, regulatory agencies, law enforcement officials, security guards, etc.

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3. BMP MANAGEMENT & MAINTENANCE REQUIREMENTS

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The Contractor shall provide maintenance services to meet the following specifications:

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A. Control of Vegetation and Wooded Growth.

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1. Grasses. The Contractor shall mow or use sting cutters (weed eaters) at each visit to maintain grasses and vegetation on dam tops and sides at an 8-inch height. Grasses and vegetation shall be removed from all riprap structures.
 2. Pine Saplings. Pine saplings shall be cut and removed at each visit from all areas of the BMP, to include the pond basin, dam top and sides, and all riprap structures.
 3. Other Wooded Vegetation. Trees and brush shall be cut and removed from the dam top and sides, overflow spillway channels, and all riprap structures.
 4. Removal of Cut Wooded Vegetation. Cut pine saplings and other wooded vegetation shall be removed from Association property at each visit. Use of wood chippers to dispose of cut brush and trees shall require the Association Manager's approval on a case-by-case basis.

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B. Cleaning & Sediment Control.

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1. Pond Basins. Loose wooded debris, water-carried tree limbs and trunks, and trash shall be removed from all cleared areas within the pond basin.
 2. Concrete Drain Boxes & Grates. Drain boxes and grates shall be cleaned out at each visit to remove all sediment and debris to ensure proper drainage.
 3. Inlet and Outlet Settlement Basins. Sediment and debris shall be removed at each visit from all riprap settlement basins.
 4. Riprap Channels and Overflow Spillways. Sediment and debris shall be cleared at each visit from all riprap channels and overflow spillways.
 5. Sediment Disposal. Sediment removed during cleaning shall be discarded on the outlet side of the dam well away from the outlet and overflow spillway channels.

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C. Clean-Up and Trash Removal.

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1. Trash & Wooded Debris Removal. Trash shall be removed at each visit from all areas and structures within each BMP. Loose wooded debris, to include tree limbs and trunks, that are blocking drain grates, settlement basins, or drainage channels shall be removed at each visit.
 2. Trash & Wooded Debris Disposal. Trash and wooded debris shall be removed from Association Property at each visit.

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4. ADDITIONAL SERVICES AND OBLIGATIONS

A. Additional Work Cost Estimates. If required by the Association Manager, the Contractor shall provide cost estimates for additional work to bring the BMPs into acceptable norms, and for the following additional work:

1. Removal of trees that have fallen into BMPs.
2. Removal of illegal trash dumping (appliances, etc.).
3. Repair of damaged BMP components.
4. Clean-up of debris resulting from hurricanes, tropical storms, etc..
5. Removal of excessive sediment.

B. Property Damage. The Contractor shall assume liability for any property damaged by trimmers, edgers or other equipment operated by the Contractor - including, but not limited to, fences, irrigation systems, plants, shrubs, flowers, windows, signs, structures, lamp posts or automobiles. Damage to these items shall be the responsibility of the contractor to repair or replace. The Association Manager shall be the determining party as to responsibility for repairs/replacement.

C. Contractor Product Compliance. The Contractor shall warranty that all BMP maintenance products, procedures, and methods of application used in performance of this Agreement comply in all respects with Federal, State, and local laws, ordinances, regulations, and manufacturer's instructions.

D. Complaints and Verbal Abuse. The Contractor shall ensure that all complaints made to the Contractor or its employees by community residents shall be handled professionally and diplomatically with instructions that the complaint should be addressed to the Association Manager. All incidents of verbal abuse by community residents toward Contractor or its employees shall immediately be reported to the Association Manager.

E. Threats to Health and Safety. The Contractor shall immediately report any condition that is or may be threatening to the health and/or safety of any person to the Association Manager.

STONEHOUSE - BMP COMPONENT LISTING - 11 JAN 2013

Stormwater Dry Retention Pond - BMPs		BMP Inlet Components							BMP Outlet Components						
BMP #	Earth Berm Dams	Inlet Discharge Pipes	Riprap Settlement Basins	Riprap Drainage Channels	Stone Gabion Barrier	Concrete Drain Box	Metal Drain Grate	Concrete Spillway Riser	Riprap Spillway Overflow	Outlet Discharge Pipes	Riprap Settlement Basins	Riprap Drainage Channels			
WC019	Mill Pond Run & Leatherleaf Drive	2	2	0	0	1	1	1	0	1	0	0			
WC025	Mill Pond Run & Old Grove Lane	1	0	1	0	1	1	1	0	1	0	0			
WC037	Leatherleaf Drive, CA-3	2	1	0	0	1	1	1	0	1	1	0			
WC038	Turning Leaf Drive, CA-4	1	0	0	0	1	1	1	0	1	1	0			
WC039	Leatherleaf Drive, CA-2	1	0	0	0	1	1	1	0	1	1	1			
WC040	Hollow Oak Drive, CA-7/CA-8	1	1	0	0	1	1	1	1	1	1	0			
WC041	Oak Branch Lane, CA-44	1	1	0	0	1	1	1	1	1	1	0			
WC089	Golf Course Maintenance Road	0	0	0	0	1	1	1	1	1	1	0			
WC071	Longwood Drive, CA-50	2	2	0	0	1	0	1	1	1	1	1			
WC072	Shapling Drive, CA-40	2	2	0	0	1	1	1	1	1	1	0			
WC073	Windy Branch Drive, CA-36	1	1	1	0	1	1	1	1	1	1	1			
WC074	Trailwood Lane, CA-48C	1	1	1	0	1	1	1	1	1	1	0			
WC079	Spillwood Road, CA-50	2	2	3	0	1	1	1	1	1	1	0			
WC080	E. Cork Road, CA-50	2	3	2	0	1	1	1	1	1	1	0			
WC081	Fieldstone Parkway	1	1	0	1	0	0	1	1	1	1	0			
BMP #	Concrete Wall Dams														
WC042	Mountain Berry Court	1	1	0	0	1	1	1	1	1	1	0			
WC043	Ridge Drive, CA-51	0	0	0	0	0	0	0	1	2	1	0			
BMP #	Timber Dams														
WC075	Morning Mist Lane, CA-48C	1	1	1	0	0	0	0	0	1	0	0			
WC076	Sawyer Way, CA-46	1	1	0	0	0	0	0	0	1	0	0			
WC077	Mill Pond Run, CA-45D	0	0	0	0	0	0	0	0	1	1	0			
WC078	Yarding Way, CA-45C	1	1	1	0	0	0	0	0	1	0	0			
Totals:		24	21	10	1	15	14	16	12	22	16	3			
Total Components:															
Earth Berm Dams		15													
Concrete Wall Dams		2													
Timber Dams		4													
Concrete Spillway Risers		16													
Concrete Drain Boxes		15													
Metal Drain Grates		14													
Concrete Discharge Pipes		34													
PVC/Steel Discharge Pipes		12													
Stone Gabion Barrier		1													
Riprap Settlement Basins		37													
Riprap Drainage Channels		13													

