JR008
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DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

THIS DECLARATION, made this 7 day of SEPTEMBER, 2000 between BUSCH PROPERTIES, INC., and all successors in interest, hereinafter referred to as the "COVENANTOR(S)," owner(s) of the following property: KINGSMILL RESORT OPERATIONS BUILDING, Deed Book _____, Page No. _____ or Instrument No. TAX MAP/PARCEL NOS. 48-2/(50-4) PARCEL ID: 5040100001, and James City County, Virginia, hereinafter referred to as the "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.

SEP 11 00 01 34

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.

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 this 7 day of SEPTEMBER, 19 2000

COVENANTOR(S)

Jesse C. Young
JESSE C. YOUNG

Print Name/Title DIRECTOR OF COMMUNITY AFFAIRS AND PROJECT DEVELOPMENT

ATTEST:

_____

COVENANTOR(S)

_____

Print Name/Title _____

ATTEST:

_____

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF James City

I hereby certify that on this 7 day of September, 19 2000 before the subscribed, a Notary Public of the State of Virginia, and for the City/County of James City, aforesaid personally appeared Jesse C. Young and did acknowledge the aforegoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 7 day of September, 19 2000.

Allison M. Hayes
Notary Public

My Commission expires: April 30, 2002

SEP 11 09 01 35

Approved as to form:

Deputy County Attorney

COMMONWEALTH OF VIRGINIA

VIRGINIA: City of Williamsburg and County of James City, to-wit:
This Declaration of Covenants was presented with certificate annexed and admitted to record on September 11, 2000, at 1:23 AM/PM in the Clerk's Office of the Circuit Court of the City of Williamsburg and County of James City.
BETSY B. WOOLRIDGE, CLERK
by Betsy B. Woolridge Deputy Clerk

drainage.pre
Revised 2/97

This Declaration of Covenants prepared by:

JESSE C. YOUNG
(Print Name)

DIRECTOR OF COMMUNITY AFFAIRS AND (Title) PROJECT DEVELOPMENT

1010 KINGSMILL RD.
(Address)

WILLIAMSBURG VA. 23185
(City) (State) (Zip)

Xanterra PARKS & RESORTS®

BEAUTIFUL PLACES ON EARTH®

August 16, 2010

James City County
Stormwater Division
287 McLaws Circle, Suite 1
Williamsburg, VA 23188

Re: Kingsmill Drainage System Declarations

To Whom it May Concern:

On July 31, 2010, Busch Properties, Inc. ("Busch") sold the Kingsmill Resort & Spa located in Williamsburg, VA (the "Resort") to Xanterra Kingsmill, LLC, a Delaware limited liability company ("Xanterra"). On September 7, 2000 and November 27, 2000, Busch executed and recorded in the James City County real property records two documents entitled "Declaration of Covenants, Inspection/Maintenance of Drainage System," copies of which are enclosed herewith (the "Declarations").

As a successor to Busch in the ownership of the Resort, Xanterra hereby provides notice to the County of the legal transfer of the Resort by Busch to Xanterra pursuant to Section 7 of both Declarations. Also pursuant to Section 7 of the Declarations, please find enclosed herewith a copy of that warranty deed recorded in James City County evidencing the legal transfer of the Resort.

To the extent you have any questions or need any additional information regarding the transfer of the Resort, please feel free to contact me directly at (303) 600-3422.

Sincerely,

Shane Harvey, Director of Business Development & Legal Affairs

w/Enclosures

6312 S. Fiddlers Green Circle, Suite 600 North • Greenwood Village, CO 80111 • Phone 303-600-3400 • Fax 300-600-3600 • xanterra.com

COPY

COUNTY OF JAMES CITY, VIRGINIA

DECLARATION OF COVENANTS
INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

Engineering and Resource Protection Division
101-E Mounts Bay Road
Williamsburg, VA 23185
757-253-6670
jamescitycountyva.gov

Please type or print legibly in black ink. Covenantor(s) should submit this form to the JCC Engineering and Resource Protection Division, 101-E Mounts Bay Road, Williamsburg, VA 23185.

THIS DECLARATION OF COVENANTS, made this 17th day of July, 2012, between Kingsmill Community Services Assoc., and all successors in interest, ("COVENANTOR(S)"), owner(s) of the following property:

Parcel Identification Number(s): 5040600001A
Legal Description(s): Kingsmill Community Services Association
Littletown Quarter
Project or Subdivision Name: Kingsmill River Course Hole #8 and Littletown Quarter
Document/Instrument No(s): _____
or Deed Book 183, Page No. 700,
and the County of James City, Virginia ("COUNTY.")

WITNESSETH:

I (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, monitoring, 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.

Prepared by (Name, Address & Phone):
_____
_____
_____
_____

Return to:
JCC Attorney's Office
101-D Mount's Bay Road
Williamsburg, VA 23185
(757) 253-6612

Instrument #120020560
Recorded: 9/28/2012

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) has executed this DECLARATION OF COVENANTS as of the date first above written.

COVENANTOR(S)

Signature

THOMAS E. CUCUEL, PRESIDENT
Print Name and Title

ACKNOWLEDGMENT

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF James City County, to wit:

I hereby certify that on this 3rd day of August, 20 12, before the subscribed, a Notary Public for the Commonwealth of Virginia, personally appeared Thomas Cucuel and did acknowledge the foregoing instrument to be his/her Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 3rd day of August, 20 12.

[SEAL]

Notary Public

Notary Registration Number: 7214150

My Commission expires: 10/31/12

Approved as to form:

County Attorney

TRANSMITTAL SHEET

ENGINEERING & RESOURCE PROTECTION → STORMWATER

Project: Drainage Improvement River Course Hole #18/Littletown Quarter

County Plan No.: SP-0016-2012

Assigned BMP No.: **None storm pipe only**

BMP Type:

Information Enclosed:

X Record Drawings (Asbuilts)

X Construction Certification

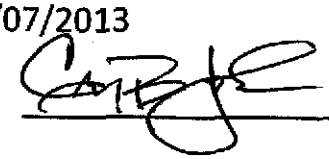
X Computations

X Other: Approved Plan

X Declaration of Covenants

Name: Greg Johnson

Date: 10/07/2013

Signature: 

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: Drainage Improvement Plan for Kingsmill - River Course Hole #8 and Littletown Quarter
Structure/BMP Name: N/A
Project Location: Littletown Quarter section of Kingsmill
BMP Location:
County Plan No.: SP-0016-2012

Project Type:
- [x] Residential
- [ ] Commercial
- [ ] Institutional
- [ ] Public
- [ ] Other
- [ ] Business
- [ ] Office
- [ ] Industrial
- [ ] Roadway

Tax Map/Parcel No.: 5040600001A
BMP ID Code (if known): N/A
Zoning District: R-4, Residential Planned Community
Land Use: Multi-Family Dwellings
Site Area (sf or acres): 0.42 Acres

Brief Description of Stormwater Management/BMP Facility:
This project was for the repair of a severly eroded head of a ravine. The slpoes were restored and the two existing stormwater outfalls were combined and extended to provide one outfall that discharges at the bottom of the ravine into a riprap basin.

Nearest Visible Landmark to SWM/BMP Facility: Dwellings at 312 and 411 Littletown Quarter

Nearest Vertical Ground Control (if known):

- [ ] JCC Geodetic Ground Control
- [ ] USGS
- [ ] Temporary
- [ ] Arbitrary
- [x] Other

Station Number or Name:
Datum or Reference Elevation: NAVD 88 Datum
Control Description: Horizontal control based on location of existing storm inlets
Control Location from Subject Facility:

Section 2 - Stormwater Management/BMP Facility Construction Information:

Pre-Construction 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: Ryan Construction Co., Inc.
Name of Professional Firm Who Routinely Monitored Construction: Nicholas Botta, P.E.
Date of Completion for SWM/BMP Facility: 4/2/13
Date of Record Drawing/Construction Certification Submittal: 12/10/2012

(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 Engineering and Resource Protection 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: Kingsmill Community Services Association
Mailing Address: 300 McLaws Circle, Suite 106
Williamsburg, VA 23187
Business Phone: 757-645-3454 Fax: 757-603-6005
Contact Person: Susan Sickal Title: Operations Manager

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: Nicholas Botta, P.E.
Title: Project Manager
Plan Name: Drainage Improvement Plan - River Course Hole #8 and Littletown Quarter
Firm's Project No. 7753-37
Plan Date: 5/4/12
Sheet No.'s Applicable to SWM/BMP Facility: 1 / 2 / 3 / 5 / _____

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

Firm Name: Ryan Construction Co., Inc.
Mailing Address: P.O. Box 5064
Suffolk, VA 23435
Business Phone: 757-538-8013

Fax: 757-538-1333
Contact Person: Ryan Nelms
Site Foreman/Supervisor: Ryan Nelms
Specialty Subcontractors and Purpose (for BMP Construction Only):
N/A

Section 4 - Professional Certifications:

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

Record Drawing and Construction Certifications for Stormwater Management/BMP Facilities

Record Drawing Certification

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Road, Suite 1
Williamsburg, VA 23188
Business Phone: 757-253-0040
Fax: 757-220-8994
Name: Nicholas Botta, P.E.
Title: Project Manager
Signature:
Date: 4/23/13

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 to the provisions of the approved design plan, specifications design, and stormwater management plan, except as specifically noted.

COMMONWEALTH OF VIRGINIA
NICHOLAS BOTTA
Lic. No. 024730
4/23/13
PROFESSIONAL ENGINEER

(Seal)

Virginia Registered Professional Engineer or Certified Land Surveyor

Construction Certification

Firm Name: ECS Mid-Atlantic LLC
Mailing Address: 108 Ingram Road
Williamsburg, VA 23188
Business Phone: 757-229-6677
Fax: 757-229-9978
Name: W. Lloyd Ward, P.E.
Title: Project Manager
Signature:
Date: 4/23/13

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 plan, specifications, and stormwater management plan, except as specifically noted.

COMMONWEALTH OF VIRGINIA
W. LLOYD WARD
Lic. No. 034612
4/23/13
PROFESSIONAL ENGINEER

(Seal)

Virginia Registered Professional Engineer

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

☐ Pre-Construction Meeting - Provides an opportunity to review SWM/BMP facility construction, maintenance and operation plans and addresses 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 Engineering and Resource Protection 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 Engineering and Resource Protection 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 Engineering and Resource Protection 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 Engineering and Resource Protection 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 Engineering and Resource Protection 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 Engineering and Resource Protection 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 Engineering and Resource Protection 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 Engineering and Resource Protection 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).

XX 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.

N/A 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.

N/A 4. Top widths, berm widths, and embankment side slopes.

N/A 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 Engineering and Resource Protection Division shall be contacted immediately to determine whether the variation is acceptable or whether further evidence will be required. Facilities which do not closely resemble approved plan grades, elevations or configurations may require regrading by the Contractor; check volumetric computations; and/or a check hydraulic routing to ensure approved design water surface elevations, discharges or freeboard were closely maintained.

N/A 6. Cross-section of the embankment through the principal spillway or outlet barrel. Must extend at least 100 ft. downstream of the pipe outlet or to recorded site property line, whichever is closer. Proper correlation is required between principal spillway (control structure) crest, emergency spillway crest, orifice, and weirs and the top of the dam or facility. All elevations and dimensions must reasonably match the design plan or be sequentially relative to each other and the facility must reflect the required design storage volume(s) and/or design depth.

N/A 7. Profile or elevations along the entire centerline of the emergency spillway. Emergency spillway may be steeper, but no flatter or narrower than design.

N/A 8. Elevation of the principal spillway crest or outlet crest of the structure.

N/A 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.

N/A 10. Dimensions, locations and elevations of outlet orifices, weirs, slots and drains.

N/A 11. Type and size of anti-vortex and trash rack device. Height, diameter, dimensions, bar spacings (if applicable) and elevations relative to the principal spillway crest. Indicate if lockable hatch is present or not.

N/A 12. Type, location, size, and number of anti-seep collars or documentation of other methods utilized for seepage control. **May need to obtain this information during construction.**

N/A 13. Top of impervious core embankment, core trench limits and elevation of cut-off trench bottom. **May need to obtain this information during construction.**

N/A 14. Elevation of the principal spillway barrel (outlet pipe) inlet and outlet invert.

N/A 15. Outlet barrel diameter, length, slope, type, and thickness class of material and type of flared end sections, headwall or endwall.

XX 16. Outfall protection dimension, type and depth of rock and if underlain filter fabric is present.

N/A 17. BMP interior and periphery landscaping zones conform with arrangements and requirements of the approved design plan.

N/A 18. Maintenance plan taken from approved design plan transposed onto record drawing set.

N/A 19. Fencing location and type, if applicable to facility.

XX 20. BMP vicinity properly cleaned of stockpiles and construction debris.

XX 21. No visual signs of erosion or channel degradation immediately downstream of facility.

N/A 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.)*

N/A A1. All requirements of Section II, Minimum Standards, apply to Group A facilities.

N/A A2. Principal spillway consists of reinforced concrete pipe with O-Ring gaskets for watertight joint construction.

N/A 3. Sediment forebays or pretreatment devices provided at inlets to pond. Generally 4 to 6 ft. deep.

N/A 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.

N/A A5. Adequate fixed vertical sediment depth markers installed in the forebay(s) for future sediment monitoring purposes.

N/A 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.

N/A 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).

N/A A8. No trees are present within a zone 15 feet around the embankment toe and 25 feet from the principal spillway structure.

N/A A9. Wet permanent pool, typically 3 to 6 feet deep, is provided and maintains level within facility.

N/A A10. Low flow orifice has a non-clogging mechanism.

N/A A11. A pond drain pipe with valve was provided.

N/A A12. Pond side slopes are not steeper than 3H:1V, unless approved plan allowed for steeper slope.

N/A 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)*

N/A B1. Same requirements as Group A Wet Ponds.

N/A B2. Minimum 2:1 length to width flow path provided across the facility.

N/A B3. Micropool provided at or around outlet from BMP (generally 3 to 6 ft. deep).

N/A 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.

N/A B5. Adequate wetland buffer provided (Typically 25 ft. outward from maximum design water surface elevation and 15 ft. setback to structures).

N/A B6. No more than one-half (½) of the wetland surface area is planted.

N/A B7. Topsoil or wetland mulch provided to support vigorous growth of wetland plants.

N/A 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)*

N/A C1. All requirements of Section II, Minimum Standards, apply to Group C facilities as applicable.

N/A C2. Facility is not located on fill slopes or on natural ground in excess of six (6) percent.

N/A 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.

N/A 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.

N/A C5. Sides of infiltration practice lined with filter fabric.

N/A 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.

N/A C7. Stabilization and acceptable vegetative cover established over contributing drainage area prior to conveyance of stormwater to the facility.

N/A 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.

N/A C9. Minimum twenty-five (25) foot separation down gradient from any structure.

N/A C10. Stormwater outfalls provided for overflow associated with larger design storms.

N/A C11. No visual signs of erosion or channel degradation immediately downstream of facility.

N/A C12. Facility does not currently cause any apparent surface or subsurface water problems to downgrade properties.

N/A C13. Observation well provided.

N/A 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)*

N/A D1. All requirements of Section II, Minimum Standards, apply to Group D facilities.

N/A D2. Sediment pretreatment devices provided.

N/A 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.

N/A 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.

N/A 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.

N/A D6. No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed.

N/A D7. Filtering system is off-line from storm drainage conveyance system.

N/A D8. Overflow outlet has adequate erosion protection.

N/A D9. Deflector, diversion, flow splitter or regulator structure provided to divert the water quality volume to the filtering structure.

N/A D10. Minimum four (4) inch perforated underdrain provided in a clean aggregate envelope layer beneath the facility.

N/A 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.

N/A D12. Stabilization and acceptable vegetative cover established over contributing drainage area prior to conveyance of stormwater to the facility.

N/A D13. No visual signs of erosion or channel degradation immediately downstream of facility.

N/A 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)*

N/A E1. All requirements of Section II, Minimum Standards, apply to Group E facilities as applicable.

N/A E2. Open channel system has constructed longitudinal slope of less than four (4) percent.

N/A E3. No visual signs of erosion in the open channel system's soil and/or vegetative cover.

N/A E4. Open channel side slopes are no steeper than 2H:1V at any location. Preferred channel sideslope is 3H:1V or flatter.

N/A 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).

N/A E6. For E-2 BMPs (Dry Swales), an underdrain system was provided.

N/A E7. Treated timber or rock check dams provided as pretreatment devices for the open channel system.

N/A E8. Gravel diaphragm provided in areas where lateral sheet flow from impervious surfaces are directly connected to the open channel system.

N/A 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.

N/A E10. Open channel system areas with grass covers higher than four (4) to six (6) inches were properly mowed.

N/A 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.

N/A 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.

N/A E13. For E-3 BMPs (Biofilters), the bottom width is six (6) feet maximum at any location.

N/A E14. For E-3 BMPs (Biofilters), sideslopes are 3H:1V maximum at any location.

N/A E15. For E-3 BMPs (Biofilters), the constructed channel slope is less than or equal to three (3) percent at any location.

N/A 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)*

N/A F1. All requirements of Section II, Minimum Standards, apply to Group F facilities.

N/A 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.

N/A F5. A reverse slope pipe, vertical stand pipe or mini-barrel and riser was provided to prevent clogging.

N/A F6. Principal spillway and outlet barrel provided consisting of reinforced concrete pipe with O-Ring gaskets for watertight joint construction.

N/A F7. Mini-barrel and riser, if used, contains a removable trash rack to reduce clogging.

N/A 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.

N/A F11. Protection against erosion and scour from the low flow orifice and weir-flow trajectory provided.

N/A F12. Stilling basin or standard outlet protection provided at principal spillway outlet.

N/A 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.

N/A F14. No visual signs of undercutting of timber walls or clogging of the low orifice were present.

N/A F15. No visual signs of erosion or channel degradation immediately downstream of facility.

N/A 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)*

N/A G1. All requirements of Section II, Minimum Standards, apply to Group G facilities as applicable.

N/A 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.

N/A G3. Dedicated open space areas are in undisturbed common areas, conservation easements or are protected by other enforceable instruments that ensure perpetual protection.

N/A G4. Provisions included to clearly specify how the natural vegetated areas utilized as dedicated open space will be managed and field identified (marked).

N/A 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.

XI. 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.

N/A O2. Certification criteria to be determined on a case-by-case basis by the Engineering and Resource Protection Division specific to the proposed SWM/BMP facility.

STORMWATER MANAGEMENT/BMP FACILITIES
RECORD DRAWING CHECKLIST

XII. 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.

RECORD DRAWING BASED ON INFORMATION AS SURVEYED BY AES CONSULTING ENGINEERS

GRAPHIC SCALE
10' 0' 10' 20'
SCALE: 1" = 10'

STORM DI
TOP= 57.40
INV= 48.97

311 LITTLETOWN QUARTER
#5040600311
N/F
JANE W. ALLING

312 LITTLETOWN QUARTER
#5040600312
N/F
J. GLENN RADA

313 LITTLETOWN QUARTER
#5040600313
N/F
BRUCE C. & KATHRYN P. GOODSON

314 LITTLETOWN QUARTER
#5040600314
N/F
MILEY W. & JEAN S. WALKER

#504060001A
N/F
KINGSMILL COMMUNITY SERVICE ASSOCIATION

#2A-MH-1
RIM=~~32.50~~ **34.08**
INV=~~28.50~~ (IN)**30.52**
INV=~~27.50~~ (OUT) **27.56**

~~25~~ **22** LF OF 24"
CLASS III RCP
@ ~~30.00%~~ **27.00%**

#3A-MH-1
RIM=~~45.00~~ **45.25**
INV=~~41.50~~ (24" IN) **41.65**
INV=~~40.00~~ (15" IN) **40.45**
INV=~~36.00~~ (OUT) **36.46**

~~16~~ **22** LF OF 24"
CLASS III RCP @ ~~2.13%~~ **2.32%**

#1A-24" ES-1
INV=~~27.00~~ **27.05**

RIPRAP BASIN

#4A-STORM DI
TOP= 54.41
INV= 46.73

EXISTING 24" RCP

~~40.34~~ LF OF 15"
CLASS III RCP
@ ~~7.50%~~ **7.47%**

#1B-MH-1
RIM=~~48.00~~ **48.22**
INV=~~43.00~~ (IN) **42.99**
INV=~~43.00~~ (OUT) **42.99**

#2B-MH-1
RIM=~~54.00~~ **53.94**
INV=49.09 (IN)
INV=~~48.00~~ (OUT) **47.08**

~~29.26~~ LF OF 15"
CLASS III RCP
@ ~~17.24%~~ **15.73%**

120 WAREHAM'S POND ROAD
#5040100006
N/F
XANTERRA KINGSMILL LLC

411 LITTLETOWN QUARTER
#5040600411
N/F
VERA E. PAYOR

410 LITTLETOWN QUARTER
#5040600410
N/F
D. MICHAEL & SHALY K. DERRIG

EXISTING 15" RCP

#3B-STORM DI
TOP= 58.73
INV= 50.63

EXISTING PARKING LOT

324 LITTLETOWN QUARTER
#5040600067
N/F
LANDIS FAMILY

414 LITTLETOWN QUARTER
#5040600414
N/F
LAURA HOLLEY & OLEXA NARTER

413 LITTLETOWN QUARTER
#5040600413
N/F
GAILLARD M. & LINDA L. GRABAN

412 LITTLETOWN QUARTER
#5040600412
N/F
SYNERGY VA LLC

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

NOTE:
VERTICAL INFORMATION IS BASED ON NAVD 88 DATUM

COMMONWEALTH OF VIRGINIA
NICHOLAS BOTTA
Lic. No. 24730
04/23/13
PROFESSIONAL ENGINEER

Rev.	Date	Description	Revised By

Environmental Division
MAY 15 2013
RECEIVED

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 220-8040
Fax: (757) 220-8894
www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

Drainage Improvement Plan - Record Drawing
FOR
KINGSMILL
RIVER COURSE HOLE #8 and LITTLETOWN QUARTER
Roberts District | James City County | Virginia

Project Contacts:	NB
Project Number:	7753-37
Scale: 1"=10'	Date: 04/23/13

Sheet Title:
Record Drawing

Sheet Number
1

SP-0012-2012

Drainage Improvement Plan

For

KINGSMILL

WOODS COURSE

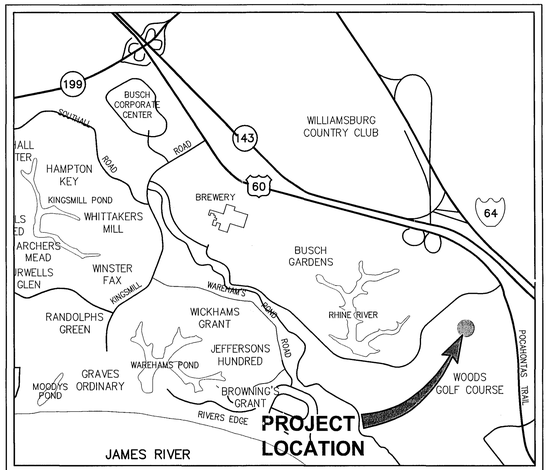
Roberts District James City County Virginia

PLANNING DIVISION
NOV 14 2012
RECEIVED

COUNTY OF JAMES CITY
FINAL SITE PLAN
APPROVALS DATE
Fire Dept. JB/ler 2/3/12
Health Dept. ____
VDOT CMJ 12-21-12
Planning SJT/ler 11/28/12
Environ. SJT/ler 12-21-12
Zoning Adm. GP 2/21/12
JCSA CLP/ler 2/22/12
County Eng. ____
REA ____
Other ____

GENERAL NOTES

1. THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, THOMAS C. SUBLETT, L.S. FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THE ORIGINAL DATA WAS OBTAINED ON OCTOBER 3, 2011 AND COMPLETED DECEMBER 20, 2011. THIS TOPOGRAPHIC SURVEY MAP MEETS MINIMUM ACCURACY STANDARDS AND IS REFERENCED TO NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD 88).
2. A LAND DISTURBING PERMIT AND SILTATION AGREEMENT, WITH SURETY, ARE REQUIRED FOR THIS PROJECT.
3. ALL ERRORS OR DISCREPANCIES WITH THE PLANS OR EXISTING SITE CONDITIONS SHALL BE REPORTED TO THE ENGINEER OR SURVEYOR OF RECORD BEFORE PROCEEDING WITH THE WORK.
4. CONTOUR INTERVAL IS 1 FOOT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS UTILITY (1-800-552-7001) FOR EXISTING UTILITY LOCATIONS AT LEAST 3 WORKING DAYS PRIOR TO COMMENCING CONSTRUCTION,
6. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS, AND ORDERS OF ANYBODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION.
7. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE CURRENT JAMES CITY COUNTY STANDARDS AND SPECIFICATIONS, VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS AND SPECIFICATIONS, VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER APPLICABLE CITY OR STATE ORDINANCES, CODES, AND LAWS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR THE WORK INDICATED.
9. THE CONTRACTOR SHALL SATISFY HIMSELF AS TO ALL SITE CONDITIONS PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIAL, INCLUDING SOIL AND DEBRIS, FROM THE SITE.
11. THE CONTRACTOR SHALL COMPLY WITH THE CURRENT LAWS AND REGULATIONS OF JAMES CITY COUNTY AND THE COMMONWEALTH OF VIRGINIA BEFORE, DURING, AND AFTER CONSTRUCTION ON THE SITE. ALL MINIMUM STANDARDS AND SPECIFICATIONS REGARDING THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE FOLLOWED BY THE CONTRACTOR.
12. THE CONTRACTOR SHALL MONITOR ALL DOWNSTREAM AREAS FOR SIGNS OF EROSION AND SEDIMENTATION. REPAIR, SEDIMENT REMOVAL, AND INSTALLATION OF ADDITIONAL MEASURES IN AFFECTED AREAS SHALL BE PERFORMED AS NECESSARY.
13. WORK ON STORMWATER CONVEYANCE SYSTEM OUTFALLS SHALL BE COORDINATED WITH WEATHER PREDICTIONS TO PREVENT STORMWATER FROM FLOWING THROUGH OPEN TRENCHES LEADING INTO STORMWATER BASINS OR ENVIRONMENTALLY SENSITIVE AREAS.
14. SILT FENCE SHALL REMAIN IN PLACE UNTIL THE PROPOSED STORM DRAINAGE SYSTEM IS INSTALLED AND THE AREAS OF INSTALLATION ARE PROPERLY STABILIZED.
15. ADDITIONAL MEASURES MAY BE NECESSARY IF FIELD CONDITIONS ARE SUCH THAT THE MEASURES SHOWN ON THE PLAN DO NOT PROVIDE ADEQUATE EROSION CONTROL.
16. ALL FILL MATERIAL SHALL BE VOID OF DEBRIS AND PLACED IN UNIFORM LIFTS OF NOT MORE THAN 8" IN LOOSE DEPTH.
17. ALL OBJECTIONABLE AND DELETERIOUS MATERIAL IS TO BE REMOVED FROM THE SITE AND DISPOSED OF IN A STATE APPROVED FACILITY MEETING THE REQUIREMENTS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
18. ALL DISTURBED AREAS SHALL BE REPAIRED TO A CONDITION EQUAL TO OR BETTER THAN THOSE EXISTING PRIOR TO CONSTRUCTION.
19. ALL STORM PIPES SHALL BE REINFORCED CONCRETE PIPE (RCP) CLASS III UNLESS OTHERWISE SPECIFIED.
20. ALL STORM DRAINAGE CONNECTIONS SHALL BE WATER TIGHT.
21. ANY NEW UTILITIES SHALL BE PLACED UNDERGROUND.
22. A LAND DISTURBING PERMIT AND SILTATION AGREEMENT, WITH SURETY, ARE REQUIRED FOR THIS PROJECT.
23. THE PROFESSIONAL WHOSE SEAL IS AFFIXED HEREON SHALL ACT AS THE "RESPONSIBLE LAND DISTURBER" FOR PURPOSES OF PLAN APPROVAL ONLY. PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT, THE OWNER OR DEVELOPER SHALL PROVIDE THE NAME OF A "RESPONSIBLE LAND DISTURBER" WHO SHALL ASSUME RESPONSIBILITY AS THE "RESPONSIBLE LAND DISTURBER" FOR THE CONSTRUCTION PHASE OF THE PROJECT. THE OWNER OR DEVELOPER SHALL PROVIDE WRITTEN NOTIFICATION SHOULD THE "RESPONSIBLE LAND DISTURBER" CHANGE DURING CONSTRUCTION.
24. THE STORM WATER MANAGEMENT/BMP FACILITY(S) WILL REQUIRE SUBMISSION, REVIEW AND APPROVAL OF RECORD DRAWINGS (AS-BUILTS) AND CONSTRUCTION CERTIFICATIONS PRIOR TO RELEASE OF POSTED BONDS/SURETIES. THE CONTRACTOR SHALL COORDINATE THE NECESSARY INSPECTIONS WITH THE PROFESSIONAL CERTIFYING THE CONSTRUCTION. THE OWNER IS REQUIRED TO ENSURE THESE ACTIVITIES ARE ADEQUATELY COORDINATED AND PERFORMED BEFORE, DURING AND FOLLOWING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT JAMES CITY COUNTY ENVIRONMENTAL DIVISION REQUIREMENTS.
25. PRIOR TO OBTAINING A LAND DISTURBING PERMIT, THE OWNER OR CONTRACTOR SHALL OBTAIN A VSMP PERMIT (VIRGINIA STORMWATER MANAGEMENT PROGRAM) FROM THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION FOR THE DISCHARGE OF STORMWATER FROM CONSTRUCTION ACTIVITIES. THIS PERMIT WILL REQUIRE DAILY LOGS OF EARTHWORK, RECORDATION OF STORM EVENTS, LOGS OF MAINTENANCE OF EROSION AND SEDIMENT CONTROL MEASURES, AND OTHER ACTIONS DURING CONSTRUCTION.
26. TENTATIVE TEMPORARY STOCKPILE/LAYDOWN AREAS ARE INDICATED ON THE PLANS. IF ALTERNATE AREAS ARE DESIRED, APPROVAL FROM THE JAMES CITY COUNTY INSPECTOR IS REQUIRED AND APPROPRIATE SAFETY AND E&S CONTROLS MUST BE PROVIDED.
27. ARCHAEOLOGICAL STUDY: "PHASE II ARCHAEOLOGICAL SIGNIFICANCE EVALUATION SURVEY OF KINGSMILL MEMBERS' GOLF COURSE, JAMES CITY COUNTY, VIRGINIA" PREPARED BY JAMES RIVER INSTITUTE FOR ARCHAEOLOGY, INC. DATED DECEMBER 3,1992.



VICINITY MAP
(Approximate Scale: 1"=2000')

JCC County Plan No.: SP-0012-2012
Original Submittal Date: 02/02/12

INDEX OF SHEETS:

PROPERTY INFORMATION

PROPERTY OWNER: XANTERRA KINGSMILL, LLC

PROJECT CONTACT: XANTERRA KINGSMILL, LLC
1010 KINGSMILL ROAD
WILLIAMSBURG, VA 23185
CONTACT: KEVIN KOLDA
757-564-5345
757-258-1632 (FAX)

TAX MAP PARCEL: 5230100110
8581 POCAHONTAS TRAIL
269 AC.

ZONING: M-1, LIMITED BUSINESS INDUSTRIAL
(SUBJECT TO CONDITIONS ASSOCIATED WITH SUP-0023-1992)

THIS SITE LIES WITHIN THE JAMES RIVER WATERSHED.

HYDROLOGIC UNIT CODE (HUC): JL-35

FLOOD HAZARD MAP: THE PROJECT AREA LIES IN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD) PER F.I.R.M. MAP NUMBER 51095C0210C, DATED 9/28/07.

ENVIRONMENTAL INVENTORY: (IMPACTS)

	DISTURBED AREA	100 FT. RPA BUFFER	25% SLOPES
AREA #2	0.30 AC.	0.10 AC.	0.28 AC.
AREA #10	0.20 AC.	0.10 AC.	0.18 AC.
AREA #11	0.21 AC.	0.10 AC.	0.19 AC.
TOTAL	0.71 AC.	0.30 AC.	0.65 AC.

THERE WILL BE NO IMPACTS TO TIDAL WETLANDS, TIDAL SHORES, NON-TIDAL WETLANDS (RMA), NON-TIDAL WETLANDS (RPA) , OR 100 YEAR FLOODPLAIN.

Rev.	Date	REVISED PER COUNTY COMMENTS	Revised By
1	11/13/12	Description	NB

COMMONWEALTH OF VIRGINIA
NICHOLAS BOTTA
Lic. No. 24730
PROFESSIONAL ENGINEER
11/13/12

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
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Fax: (757) 220-8994
www.aesva.com
AES CONSULTING ENGINEERS
Middle Peninsula | Central Virginia | Hampton Roads

Drainage Improvement Plan
FOR
KINGSMILL
WOODS COURSE
Roberts District James City County Virginia

Project Contacts:	NB
Project Number:	7753-35
Scale: N/A	Date: 02/02/12
Sheet Title:	Cover Sheet
Sheet Number	1

GRAPHIC SCALE
200' 0' 200' 400'
SCALE: 1" = 200'

N

BUSCH SERVICE ROAD
WOODS COURSE DRIVE
POCAHONTAS TRAIL
ROUTE 60
KINGSMILL
WOODS COURSE
TENTATIVE TEMPORARY STOCKPILE / LAYDOWN AREA
TENTATIVE TEMPORARY STOCKPILE / LAYDOWN AREA
GOLF CLUBHOUSE
PRACTICE RANGE
RHINE RIVER
GROVE CREEK

12 15 10 11 11 13 16 2 14 10 18 9 17 1 2 3 8 5 4 7 6

LEGEND

1 - GOLF HOLE NUMBER

1 - DRAINAGE IMPROVEMENT NUMBER

Rev.	Date	Description	Revised By
1	11/13/12	REVISED PER COUNTY COMMENTS	NB

COMMONWEALTH OF VIRGINIA
NICHOLAS BOTTA
Lic. No. 24730
11/13/12
PROFESSIONAL ENGINEER

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 253-0040
Fax: (757) 220-8994
www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

Drainage Improvement Plan
FOR
KINGSMILL
WOODS COURSE
Roberts District | James City County | Virginia

Project Contacts:	NB
Project Number:	7753-35
Scale: 1"=200'	Date: 02/02/12
Sheet Title: OVERALL MAP	
Sheet Number	2

SOIL CHARACTERISTICS - JAMES CITY & YORK COUNTIES AND THE CITY OF WILLIAMSBURG, VA

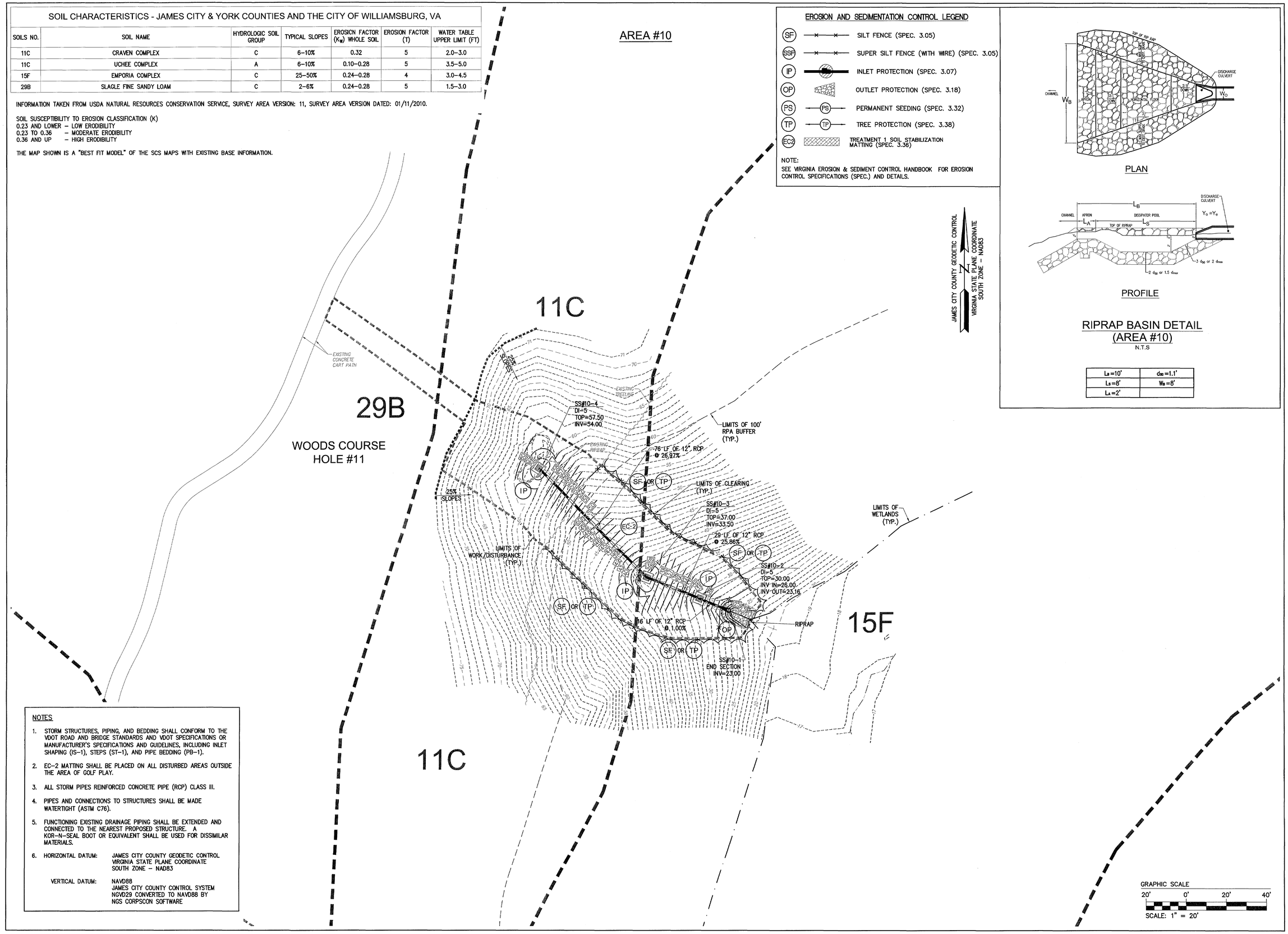
SOILS NO.	SOIL NAME	HYDROLOGIC SOIL GROUP	TYPICAL SLOPES	EROSION FACTOR (K_w) WHOLE SOIL	EROSION FACTOR (T)	WATER TABLE UPPER LIMIT (FT)
11C	CRAVEN COMPLEX	C	6–10%	0.32	5	2.0–3.0
11C	UCHEE COMPLEX	A	6–10%	0.10–0.28	5	3.5–5.0
15F	EMPORIA COMPLEX	C	25–50%	0.24–0.28	4	3.0–4.5
29B	SLAGLE FINE SANDY LOAM	C	2–6%	0.24–0.28	5	1.5–3.0

INFORMATION TAKEN FROM USDA NATURAL RESOURCES CONSERVATION SERVICE, SURVEY AREA VERSION: 11, SURVEY AREA VERSION DATED: 01/11/2010.

SOIL SUSCEPTIBILITY TO EROSION CLASSIFICATION (K)
0.23 AND LOWER – LOW ERODIBILITY
0.23 TO 0.36 – MODERATE ERODIBILITY
0.36 AND UP – HIGH ERODIBILITY

THE MAP SHOWN IS A "BEST FIT MODEL" OF THE SCS MAPS WITH EXISTING BASE INFORMATION.

AREA #10



EROSION AND SEDIMENTATION CONTROL LEGEND

- SF — SILT FENCE (SPEC. 3.05)
- SSF — SUPER SILT FENCE (WITH WIRE) (SPEC. 3.05)
- IP — INLET PROTECTION (SPEC. 3.07)
- OP — OUTLET PROTECTION (SPEC. 3.18)
- PS — PERMANENT SEEDING (SPEC. 3.32)
- TP — TREE PROTECTION (SPEC. 3.38)
- EC2 — TREATMENT 1 SOIL STABILIZATION MATTING (SPEC. 3.38)

NOTE:
SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.) AND DETAILS.

PLAN

PROFILE

RIPRAP BASIN DETAIL (AREA #10)

N.T.S

L_B=10'	d_{50}=1.1'
L_S=8'	W_B=8'
L_A=2'	

NOTES

1. STORM STRUCTURES, PIPING, AND BEDDING SHALL CONFORM TO THE VDOT ROAD AND BRIDGE STANDARDS AND VDOT SPECIFICATIONS OR MANUFACTURER'S SPECIFICATIONS AND GUIDELINES, INCLUDING INLET SHAPING (IS–1), STEPS (ST–1), AND PIPE BEDDING (PB–1).
2. EC–2 MATTING SHALL BE PLACED ON ALL DISTURBED AREAS OUTSIDE THE AREA OF GOLF PLAY.
3. ALL STORM PIPES REINFORCED CONCRETE PIPE (RCP) CLASS III.
4. PIPES AND CONNECTIONS TO STRUCTURES SHALL BE MADE WATERTIGHT (ASTM C76).
5. FUNCTIONING EXISTING DRAINAGE PIPING SHALL BE EXTENDED AND CONNECTED TO THE NEAREST PROPOSED STRUCTURE. A KOR–N–SEAL BOOT OR EQUIVALENT SHALL BE USED FOR DISSIMILAR MATERIALS.
6. HORIZONTAL DATUM: JAMES CITY COUNTY GEODETIC CONTROL VIRGINIA STATE PLANE COORDINATE SOUTH ZONE – NAD83
   VERTICAL DATUM: NAVD88 JAMES CITY COUNTY CONTROL SYSTEM NGVD29 CONVERTED TO NAVD88 BY NGS CORPSCON SOFTWARE

No.	Date	Description	Revised By
1	11/13/12	REVISED PER COUNTY COMMENTS	NB

COMMONWEALTH OF VIRGINIA
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Drainage Improvement Plan
FOR
KINGSMILL
WOODS COURSE
Roberts District | James City County | Virginia

Project Contacts:	NB
Project Number:	7753-35
Scale: 1"=20'	Date: 02/02/12

Sheet Title:
DRAINAGE DEVELOPMENT PLAN AREA # 10

Sheet Number
3

AREA #11

11C

WOODS COURSE
HOLE #11

29B

15F

EXISTING CONCRETE CART PATH

25% SLOPES

SS#11-3
DI-5
TOP=62.00
INV=58.50

EXISTING DRAINAGE

SF OR TP

IP

LIMITS OF 100' RPA BUFFER (TYP.)

LIMITS OF CLEARING (TYP.)

LIMITS OF WETLANDS (TYP.)

120 LF OF 12" RCP @ 33.75%

EC-2

16 LF OF 12" RCP @ 1.00%

SS#11-2
DI-5
TOP=22.50
INV. IN=18.00
INV. OUT=15.16

EXISTING STREAM

SS#11-1
END SECTION
INV=15.00

LIMITS OF WORK/DISTURBANCE (TYP.)

RIPRAP

OP

APPROXIMATE LOCATION OF ARCHAEOLOGICAL SITE #44JC609 AS SHOWN IN PHASE II ARCHAEOLOGICAL SIGNIFICANCE EVALUATION SURVEY OF KINGSMILL MEMBERS' GOLF COURSE BY JAMES RIVER INSTITUTE FOR ARCHAEOLOGY, INC. DATED DECEMBER 3, 1992.

SOIL CHARACTERISTICS - JAMES CITY & YORK COUNTIES AND THE CITY OF WILLIAMSBURG, VA

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INFORMATION TAKEN FROM USDA NATURAL RESOURCES CONSERVATION SERVICE, SURVEY AREA VERSION: 11, SURVEY AREA VERSION DATED: 01/11/2010.

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GRAPHIC SCALE
20' 0' 20' 40'
SCALE: 1" = 20'

JAMES CITY COUNTY GEODETIC CONTROL
VIRGINIA STATE PLANE COORDINATE
SOUTH ZONE – NAD83

EROSION AND SEDIMENTATION CONTROL LEGEND

- (SF) SILT FENCE (SPEC. 3.05)
- (SSF) SUPER SILT FENCE (WITH WIRE) (SPEC. 3.05)
- (IP) INLET PROTECTION (SPEC. 3.07)
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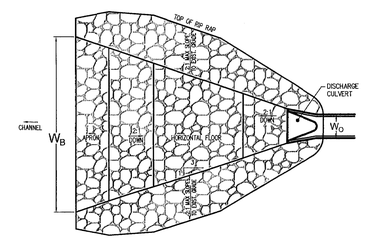
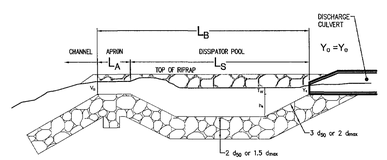
- (TP) TREE PROTECTION (SPEC. 3.38)
- (EC2) TREATMENT 1 SOIL STABILIZATION MATTING (SPEC. 3.36)

NOTE:
SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.) AND DETAILS.



PLAN



PROFILE

RIPRAP BASIN DETAIL (AREA #11)

N.T.S

L_B=10'	d_{50}=1.1'
L_S=8'	W_B=9'
L_A=2'	

NOTES

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   VERTICAL DATUM: NAVD88 JAMES CITY COUNTY CONTROL SYSTEM NGVD29 CONVERTED TO NAVD88 BY NGS CORPSCON SOFTWARE

Rev.	Date	REVISED PER COUNTY COMMENTS Description	Revised By
1	11/13/12		NB

COMMONWEALTH OF VIRGINIA NICHOLAS BOTTA Lic. No. 24730 PROFESSIONAL ENGINEER 11/13/12

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Drainage Improvement Plan
FOR
KINGSMILL
WOODS COURSE
James City County Virginia
Roberts District

Project Contacts:	NB
Project Number:	7753-35
Scale: 1"=20'	Date: 02/02/12

Sheet Title:
DRAINAGE DEVELOPMENT PLAN
AREA # 11

Sheet Number
4

AREA #2

SOIL CHARACTERISTICS - JAMES CITY & YORK COUNTIES AND THE CITY OF WILLIAMSBURG, VA						
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15F	EMPORIA COMPLEX	C	25–50%	0.24–0.28	4	3.0–4.5
29B	SLAGLE FINE SANDY LOAM	C	2–6%	0.24–0.28	5	1.5–3.0

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JAMES CITY COUNTY GEODETIC CONTROL
VIRGINIA STATE PLANE COORDINATE
SOUTH ZONE – NAD83

EROSION AND SEDIMENTATION CONTROL LEGEND

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- (EC2) TREATMENT 1 SOIL STABILIZATION MATTING (SPEC. 3.36)

NOTE:
SEE VIRGINIA EROSION & SEDIMENT CONTROL HANDBOOK FOR EROSION CONTROL SPECIFICATIONS (SPEC.) AND DETAILS.

LIMITS OF WETLANDS (TYP.)
RIPRAP (OP)
SF OR TP
SS#2-1 END SECTION INV=16.50
15F
SS#2-2 DI-5 TOP=19.50 INV=16.50
IP
EC-2
23 LF OF 15" RCP @ 0.0%
91 LF OF 12" RCP @ 19.23%
LIMITS OF 100' RPA BUFFER (TYP.)
SS#2-3 DI-5 TOP=37.50 INV=34.00
LIMITS OF CLEARING (TYP.)
66 LF OF 12" RCP @ 17.42%
11C
EXISTING TREELINE
SS#2-4 DI-5 TOP=49.00 INV=45.50
LIMITS OF WORK/DISTURBANCE (TYP.)
LOCATE EX. 18" STORM PIPE AND TIE INTO PROPOSED STRUCTURE
APPROXIMATE LOCATION OF 18" STORM PIPE
25± SLOPES
TEE BOX
CART PATH
29B
WOODS COURSE HOLE #10

NOTES

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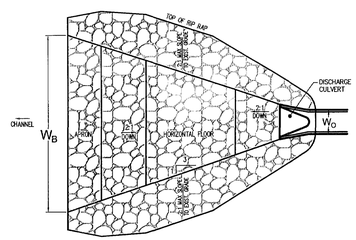
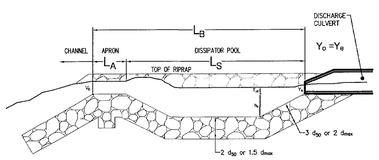
20' 0' 20' 40'
SCALE: 1" = 20'



PLAN



PROFILE

RIPRAP BASIN DETAIL
(AREA #2)
N.T.S

L_A=12'	d_{50}=1.1'
L_S=10'	W_B=10'
L_A=2'	

Rev.	Date	REVISED PER COUNTY COMMENTS Description	Revised By
1	11/13/12		NB

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Drainage Improvement Plan
FOR
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Roberts District

Project Contacts:	NB
Project Number:	7753-35
Scale: 1"=20'	Date: 02/02/12

Sheet Title:
DRAINAGE DEVELOPMENT PLAN
AREA # 2

Sheet Number
5

STANDARD ENVIRONMENTAL DIVISION EROSION AND SEDIMENT CONTROL NOTES FOR JAMES CITY COUNTY, VIRGINIA

(REVISED 10/1/09)

THE FOLLOWING STANDARD EROSION AND SEDIMENT CONTROL (E&SC) NOTES SHALL BECOME PART OF APPROVED EROSION AND SEDIMENT CONTROL PLANS FOR ALL PLAN OF DEVELOPMENT PROJECTS IN JAMES CITY COUNTY, VIRGINIA.

1. ALL THE PROVISIONS OF VIRGINIA EROSION AND SEDIMENT CONTROL LAW AND REGULATIONS, MINIMUM STANDARDS, HANDBOOKS, AND TECHNICAL BULLETINS AS PUBLISHED BY THE VIRGINIA SOIL & WATER CONSERVATION BOARD AND/OR THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION, DIVISION OF SOIL & WATER CONSERVATION SHALL APPLY TO THE PROJECT.

2. MINIMUM STANDARDS #1 THROUGH #19 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS (4VAC50–30–40) SHALL APPLY TO THE PROJECT.

3. THE OWNER OR APPLICANT SHALL BE RESPONSIBLE TO REGISTER FOR COVERAGE UNDER THE GENERAL PERMIT FOR DISCHARGE OF STORMWATER FROM CONSTRUCTION ACTIVITIES, IN ACCORDANCE WITH CURRENT REQUIREMENTS OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) AND THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION.

4. THE OWNER OR APPLICANT SHALL PROVIDE THE NAME OF AN INDIVIDUAL HOLDING A VALID RESPONSIBLE LAND DISTURBER (RLD) CERTIFICATE OF COMPETENCE WHO WILL BE RESPONSIBLE FOR THE LAND–DISTURBING ACTIVITY PRIOR TO ENGAGING IN THE LAND–DISTURBING ACTIVITY. THIS WILL BE NECESSARY PRIOR TO ISSUANCE OF A LAND–DISTURBING PERMIT FOR THE PROJECT. THE RLD IS REQUIRED TO ATTEND THE PRECONSTRUCTION CONFERENCE FOR THE PROJECT.

5. THE CONTRACTOR IS RESPONSIBLE TO CONTACT MISS UTILITY (DIAL 811 IN VA OR 1–800–552–7001) PRIOR TO ANY UTILITY OR SITE WORK EXCAVATIONS.

6. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PLANNED, DESIGNED, IMPLEMENTED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). THE CONTRACTOR SHALL MAINTAIN, INSPECT AND REPAIR ALL EROSION AND SEDIMENT CONTROL MEASURES AS NEEDED THROUGHOUT THE LIFE OF THE PROJECT TO ENSURE CONTINUED ACCEPTABLE PERFORMANCE.

7. A PRECONSTRUCTION CONFERENCE (MEETING) SHALL BE HELD ON SITE BETWEEN THE COUNTY ENVIRONMENTAL DIVISION, THE OWNER–APPLICANT, THE RESPONSIBLE LAND–DISTURBER (RLD), THE CONTRACTOR AND OTHER RESPONSIBLE AGENCIES, AS APPLICABLE, PRIOR TO ISSUANCE OF A LAND–DISTURBING PERMIT. THE OWNER OR APPLICANT IS REQUIRED TO COORDINATE SCHEDULING OF THE PRECONSTRUCTION CONFERENCE BETWEEN ALL APPLICABLE PARTIES. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION TO THE COUNTY ENVIRONMENTAL DIVISION FOR REVIEW AND APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING.

8. ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND–DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

9. ADDITIONAL SAFETY FENCE OR DUST CONTROL MEASURES, IN ACCORDANCE WITH THE PROVISIONS OF MINIMUM STANDARDS & SPECS. 3.01 AND 3.39 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), MAY BE REQUIRED TO BE IMPLEMENTED IN ADDITION TO THAT SHOWN ON THE APPROVED PLAN IN ORDER TO ENSURE ADEQUATE PROTECTION OF THE HEALTH, SAFETY AND WELFARE OF THE PUBLIC OR IF SITE CONDITIONS CHANGE, BECOME APPARENT OR ALTER SIGNIFICANTLY FOLLOWING THE DATE OF PLAN APPROVAL.

10. EROSION AND SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT OR FOLLOWING TIME OF CONSTRUCTION TO ENSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED, TO ENSURE ADEQUATE PROTECTION OF THE HEALTH, SAFETY AND WELFARE OF THE PUBLIC, OR IF SITE CONDITIONS CHANGE, BECOME APPARENT OR ALTER SIGNIFICANTLY FOLLOWING THE DATE OF PLAN APPROVAL. COUNTY ENVIRONMENTAL DIVISION APPROVAL SHALL BE REQUIRED FOR ANY DEVIATION OF EROSION AND SEDIMENT CONTROL MEASURES FROM THE APPROVED PLAN.

11. OFF–SITE WASTE OR BORROW AREAS SHALL BE APPROVED BY THE COUNTY ENVIRONMENTAL DIVISION PRIOR TO THE IMPORT OF ANY BORROW OR EXPORT OF ANY WASTE TO OR FROM THE PROJECT SITE.

12. CULVERT AND STORM DRAIN INLET PROTECTIONS, IN ACCORDANCE WITH THE PROVISIONS OF MINIMUM STANDARDS & SPECS. 3.07 & 3.08 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), MAY BE REMOVED AT THE DISCRETION OF THE ASSIGNED COUNTY ENVIRONMENTAL DIVISION INSPECTOR SHOULD PLACEMENT OF THE MEASURE RESULT IN EXCESSIVE ROAD FLOODING OR TRAFFIC HAZARD OR RESULT IN THE REDIRECTION OF DRAINAGE ONTO OR TOWARD EXISTING LOTS, DRIVEWAYS OR STRUCTURES. DECISIONS SHALL BE MADE ON A CASE–BY–CASE BASIS BASED ON FIELD SITUATIONS ENCOUNTERED.

13. DRAINAGE FACILITIES SHALL BE INSTALLED AND FUNCTIONAL WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT.

14. NO MORE THAN 300 FEET OF TRENCH MAY BE OPEN AT ONE TIME FOR UNDERGROUND UTILITY LINES, INCLUDING STORM WATER CONVEYANCES. ALL OTHER PROVISIONS OF MINIMUM STANDARD # 16 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS APPLY.

15. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING IN ACCORDANCE WITH MINIMUM STANDARD & SPEC. 3.35 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.

16. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION ON THE APPROVED PLAN SHALL MEAN THE SUCCESSFUL GERMINATION AND ESTABLISHMENT OF A STABLE GRASS COVER FROM A PROPERLY PREPARED SEEDBED, IN ACCORDANCE WITH MINIMUM STANDARDS & SPECS. 3.29 THROUGH 3.37 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), AS APPLICABLE. IRRIGATION, IF NECESSARY, SHALL COMPLY WITH ALL APPLICABLE OUTDOOR WATER USE RESTRICTIONS OF THE JAMES CITY SERVICE AUTHORITY.

17. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. REMOVAL SHALL NOT OCCUR WITHOUT AUTHORIZATION BY THE COUNTY ENVIRONMENTAL DIVISION. DISTURBANCES ASSOCIATED WITH THE REMOVAL OF TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY STABILIZED.

18. NO SEDIMENT TRAP OR SEDIMENT BASIN SHALL BE REMOVED UNTIL A) AT LEAST 75 PERCENT OF THE SINGLE–FAMILY LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN SOLD TO A THIRD PARTY FOR THE CONSTRUCTION OF HOMES (UNRELATED TO THE DEVELOPER); AND/OR, B) 60 PERCENT OF THE SINGLE–FAMILY LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN ARE COMPLETED AND STABILIZED. A BULK SALE OF THE LOTS TO ANOTHER BUILDER DOES NOT SATISFY THIS PROVISION. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL NOT BE REMOVED WITHOUT AUTHORIZATION OF THE COUNTY ENVIRONMENTAL DIVISION.

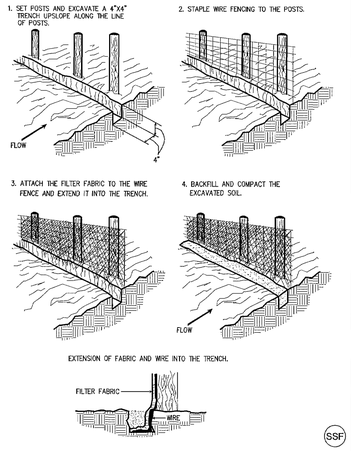
19. APPLICABLE PROVISIONS OF THE COUNTY BMP MANUAL (JAMES CITY COUNTY GUIDELINES FOR DESIGN AND CONSTRUCTION OF STORMWATER MANAGEMENT BMPS) AND THE VIRGINIA STORMWATER MANAGEMENT HANDBOOK (VSMH) APPLY TO THE PROJECT.

20. DESIGN AND CONSTRUCTION OF PRIVATE–TYPE STORM DRAINAGE SYSTEMS, OUTSIDE VDOT RIGHT–OF–WAY, SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER DRAINAGE CONVEYANCE SYSTEMS (NON–BMP RELATED), GENERAL DESIGN AND CONSTRUCTION GUIDELINES.

21. RECORD DRAWINGS (ASBUILTS) AND CONSTRUCTION CERTIFICATIONS ARE REQUIRED FOR ALL STORMWATER FACILITIES INCLUDING STORMWATER MANAGEMENT/BMP FACILITIES AND STORM DRAINAGE CONVEYANCE SYSTEMS. RECORD DRAWINGS AND CONSTRUCTION CERTIFICATIONS MUST MEET ESTABLISHED PROGRAM REQUIREMENTS OF BOTH THE COUNTY ENVIRONMENTAL AND STORMWATER DIVISIONS.

22. ALL STORMWATER FACILITIES INCLUDING BMPS, STORM DRAINAGE PIPES, STORMWATER CONVEYANCES, INLETS, MANHOLES, OUTFALLS AND ROADSIDE AND OTHER OPEN CHANNELS SHALL BE INSPECTED BY THE COUNTY STORMWATER DIVISION AND GEOTECHNICAL ENGINEER IN ACCORDANCE WITH ESTABLISHED COUNTY STORMWATER DIVISION PROGRAM REQUIREMENTS.

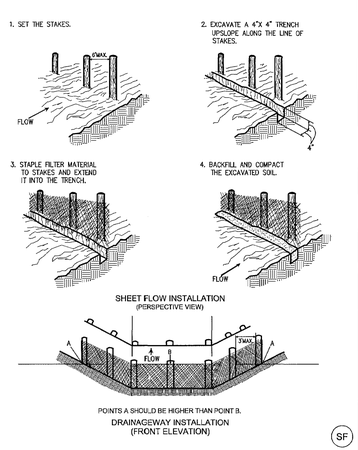
CONSTRUCTION OF A SILT FENCE (WITH WIRE SUPPORT)



SSF

Plate 3.05-1

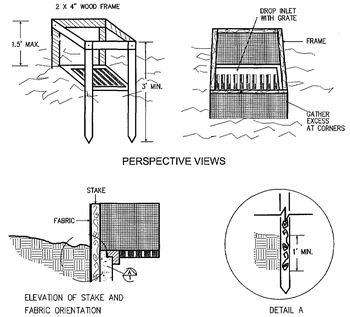
CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)



SF

Plate 3.05-2

SILT FENCE DROP INLET PROTECTION



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

IP

Plate 3.07-1

SITE SPECIFIC SEEDING MIXTURES FOR COASTAL PLAIN AREA

	TOTAL LBS. PER ACRE
MINIMUM CARE LAWN	
COMMERCIAL OR RESIDENTIAL	
–KENTUCKY 31 OR TURF–TYPE TALL FESCUE	175–200 LBS.
OR	
–COMMON BERMUDA GRASS **	75 LBS.
HIGH–MAINTENANCE LAWN	
–KENTUCKY 31 OR TURF–TYPE TALL FESCUE	200–250 LBS.
OR	
–HYBRID BERMUDAGRASS (SEED)**	40 LBS. (UNHULLED)
OR	30 LBS. (HULLED)
–HYBRID BERMUDAGRASS (BY OTHER VEGETATIVE ESTABLISHMENT METHOD, SEE STD. & SPEC. 3.34)	
GENERAL SLOPE (3:1 OR LESS)	
–KENTUCKY 31 FESCUE	128 LBS.
–RED TOP GRASS	2 LBS.
–SEASONAL NURSE CROP *	20 LBS.
	150 LBS.
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
–KENTUCKY 31 TALL FESCUE	93–108 LBS.
–COMMON BERMUDAGRASS **	0–15 LBS.
–RED TOP GRASS	2 LBS.
–SEASONAL NURSE CROP *	20 LBS.
–SERICEA LESPEDEZA **	20 LBS.
	150 LBS.

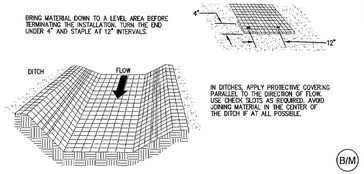
* USE SEASONAL CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:
FEBRUARY, MARCH THROUGH APRIL.....ANNUAL RYE
MAY 1ST THROUGH AUGUST.....FOXTAIL MILLET
SEPTEMBER, OCTOBER THROUGH NOVEMBER 15TH.....ANNUAL RYE
NOVEMBER 16TH THROUGH JANUARY.....WINTER RYE

** MAY THROUGH OCTOBER, USE HULLED SEED. ALL OTHER SEEDING PERIODS, USE UNHULLED SEED. WEEPING LOVEGRASS MAY BE ADDED TO ANY SLOPE OR LOW–MAINTENANCE MIX DURING WARMER SEEDING PERIODS; ADD 10–20 LBS./ACRE IN MIXES.

PS

Table 3.32-D

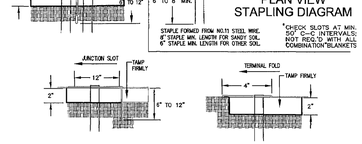
TYPICAL ORIENTATION OF TREATMENT – 1 (SOIL STABILIZATION BLANKET)



B/M

Plate 3.36-1

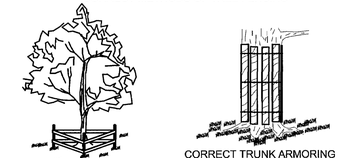
TYPICAL TREATMENT – 1 (SOIL STABILIZATION BLANKET) INSTALLATION CRITERIA



B/M

Plate 3.36-2

FENCING AND ARMORING



TP

Plate 3.38-2

EROSION AND SEDIMENTATION CONTROL NARRATIVE

PROJECT DESCRIPTION
THIS PROJECT CONSISTS OF THE REPAIR OF THREE (3) ERODED AREAS ADJACENT TO HOLES #10 AND #11 OF THE WOODS GOLF COURSE WITHIN THE KINGSMILL DEVELOPMENT.

EXISTING SITE CONDITIONS
THE GOLF HOLES ARE GRASS COVERED UPLAND AREAS FLANKED BY WOODED RAVINES. STORMWATER RUNOFF FROM THE GRASS AREAS DRAIN TOWARDS THE STEEP SIDE SLOPES OF THESE RAVINES. OVER TIME, WHERE STORMWATER BECAME CONCENTRATED, THE SIDE SLOPES EXPERIENCED MODERATE TO SEVERE EROSION.

ADJACENT AREAS
THE PROJECT SITE IS LOCATED IN THE MIDDLE OF THE 269 ACRE PARCEL WHERE THE GOLF COURSE EXISTS. THIS PARCEL IS BOUNDED BY RESIDENTIAL LOTS AND ROUTE 60 TO THE EAST, THE BREWERY SERVICE ROAD TO THE NORTH, AND UNDEVELOPED PROPERTY TO THE WEST AND SOUTH. THE RAVINES DRAIN SOUTHWARD TO GROVE CREEK AND EVENTUALLY TO THE JAMES RIVER.

OFF–SITE AREAS
SUITABLE SOIL WILL BE IMPORTED FOR FILL MATERIAL AT THE SITE. EXCESS MATERIAL SHALL BE DISPOSED OF OFF SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.

SOILS DESCRIPTION
THE SOIL CONSERVATION SERVICE HAS IDENTIFIED THESE SITES AS CONTAINING SOIL TYPES 11C (CRAVEN–UCHEE) AND 29B SLAGLE FINE SANDY LOAM ON THE UPLAND AREAS, AND 15F (EMPORIA COMPLEX) ON THE STEEP SIDE SLOPES OF THE LOWER PORTION OF THE RAVINE.

CRITICAL AREAS
THE ERODED AREAS OF THE RAVINE'S SIDE SLOPES WILL BE RECONSTRUCTED.

EROSION AND SEDIMENT CONTROL MEASURES
EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILT FENCE, STABILIZATION MATTING, INLET PROTECTION, RIPRAP BASINS, AND OTHERS WILL BE UTILIZED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK TO CONTROL FURTHER EROSION AND SEDIMENTATION UNTIL THE SITE IS STABILIZED.

PERMANENT STABILIZATION
PERMANENT SEEDING WILL BE USED TO STABILIZE THE SITE AFTER CONSTRUCTION IS COMPLETE.

STORMWATER RUNOFF CONSIDERATIONS
THE PROPOSED STORM DRAINAGE SYSTEMS WILL COLLECT THE STORMWATER RUNOFF FROM THE GOLF COURSE AND DISCHARGE IT AT THE BOTTOM OF THE RAVINE.

Rev.	Date	REVISED PER COUNTY COMMENTS — Description	Revised By
1	11/13/12		NB

COMMONWEALTH OF VIRGINIA — NICHOLAS BOTTA — Lic. No. 24730 — 11/13/12 — PROFESSIONAL ENGINEER

5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 220-8454
Fax: (757) 220-8994
www.aesva.com
AES CONSULTING ENGINEERS
Hampton Roads | Central Virginia | Middle Peninsula

Drainage Improvement Plan FOR KINGSMILL WOODS COURSE
James City County, Virginia
Roberts District

Project Contacts:	NB
Project Number:	7753-35
Scale: NONE	Date: 02/02/12

Sheet Title: NOTES AND DETAILS

Sheet Number 6

RECORD DRAWING BASED ON INFORMATION AS SURVEYED BY AES CONSULTING ENGINEERS

GRAPHIC SCALE
10' 0' 10' 20'
SCALE: 1" = 10'

STORM DI
TOP= 57.40
INV= 48.97

311 LITTLETOWN QUARTER
#5040600311
N/F
JANE W. ALLING

312 LITTLETOWN QUARTER
#5040600312
N/F
J. GLENN RADA

313 LITTLETOWN QUARTER
#5040600313
N/F
BRUCE C. & KATHRYN P. GOODSON

314 LITTLETOWN QUARTER
#5040600314
N/F
MILEY W. & JEAN S. WALKER

#504060001A
N/F
KINGSMILL COMMUNITY SERVICE ASSOCIATION

#2A-MH-1
RIM=~~32.50~~ **34.08**
INV=~~28.50~~ (IN)**30.52**
INV=~~27.50~~ (OUT) **27.56**

~~25~~ **22** LF OF 24"
CLASS III RCP
@ ~~30.00%~~ **27.00%**

#3A-MH-1
RIM=~~45.00~~ **45.25**
INV=~~41.50~~ (24" IN) **41.65**
INV=~~40.00~~ (15" IN) **40.45**
INV=~~36.00~~ (OUT) **36.46**

~~16~~ **22** LF OF 24"
CLASS III RCP @ ~~2.13%~~ **2.32%**

#1A-24" ES-1
INV=~~27.00~~ **27.05**

RIPRAP BASIN

#4A-STORM DI
TOP= 54.41
INV= 46.73

EXISTING 24" RCP

~~40.34~~ LF OF 15"
CLASS III RCP
@ ~~7.50%~~ **7.47%**

#1B-MH-1
RIM=~~48.00~~ **48.22**
INV=~~43.00~~ (IN) **42.99**
INV=~~43.00~~ (OUT) **42.99**

#2B-MH-1
RIM=~~54.00~~ **53.94**
INV=49.09 (IN)
INV=~~48.00~~ (OUT) **47.08**

~~29.26~~ LF OF 15"
CLASS III RCP
@ ~~17.24%~~ **15.73%**

120 WAREHAM'S POND ROAD
#5040100006
N/F
XANTERRA KINGSMILL LLC

411 LITTLETOWN QUARTER
#5040600411
N/F
VERA E. PAYOR

410 LITTLETOWN QUARTER
#5040600410
N/F
D. MICHAEL & SHALY K. DERRIG

EXISTING 15" RCP

#3B-STORM DI
TOP= 58.73
INV= 50.63

EXISTING PARKING LOT

324 LITTLETOWN QUARTER
#5040600067
N/F
LANDIS FAMILY

414 LITTLETOWN QUARTER
#5040600414
N/F
LAURA HOLLEY & OLEXA NARTER

413 LITTLETOWN QUARTER
#5040600413
N/F
GAILLARD M. & LINDA L. GRABAN

412 LITTLETOWN QUARTER
#5040600412
N/F
SYNERGY VA LLC

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

NOTE:
VERTICAL INFORMATION IS BASED ON NAVD 88 DATUM

COMMONWEALTH OF VIRGINIA
NICHOLAS BOTTA
Lic. No. 24730
04/23/13
PROFESSIONAL ENGINEER

Rev.	Date	Description	Revised By

Environmental Division
MAY 15 2013
RECEIVED

AES CONSULTING ENGINEERS
5248 Olde Towne Road, Suite 1
Williamsburg, Virginia 23188
Phone: (757) 220-8040
Fax: (757) 220-8894
www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

Drainage Improvement Plan - Record Drawing
FOR
KINGSMILL
RIVER COURSE HOLE #8 and LITTLETOWN QUARTER
Roberts District | James City County | Virginia

Project Contacts:	NB
Project Number:	7753-37
Scale: 1"=10'	Date: 04/23/13

Sheet Title:
Record Drawing

Sheet Number
1

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

LETTER OF TRANSMITTAL

February 11, 2013

Kingsmill Community Service Association
300 McLaws Circle, Suite 106
Williamsburg, VA 23185

ATTN: Ms. Susan Sickal

RE: **Kingsmill Utility Line Backfill**

ECS Job # **07:11512**

Permits:

Location: **Tutter's Neck**
Williamsburg, VA

We are enclosing:

X Materials Engineering Division Reports
X For your use
X As requested

ENCL:

Field Report # 2	02/07/2013	Pipe Subgrade

COMMONWEALTH OF VIRGINIA
W. LLOYD WARD
No. 034611
PROFESSIONAL ENGINEER
FEB 11 2013

W. Lloyd Ward
Branch Manager, Principal Engineer

Sara B. Phillips
Staff Project Manager

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	2
Day & Date	Thursday 02/07/2013
Weather	45°/ Cloudy
On-Site Time	1.75
Lab Time	0.00
Travel Time*	0.75
Total	2.50
Re Obs.Time	0.00

Project	Kingsmill Utility Line Backfill
Location	Williamsburg, VA
Client	Kingsmill Community Service Association - Susan

Remarks **Pipe Subgrade**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival **02:00P** Departure **03:45P**

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned engineer arrived on-site, as requested, to observe the pipe subgrade for the storm water utilities from manhole 3A to the outfall.

The RCP pipe was in place at the time of the observation. The subgrade observed was between the pipe and the trench wall. The subgrade was probed utilizing a 1.75-inch diameter geo-stick. Penetrations of less than 1/2-inch were observed in the clayey subgrade from manhole 3A to 2A and in the riprap area, indicating a firm and stable subgrade. Penetrations of 2-6 inches were observed in the clayey subgrade from manhole 2A to the outfall. Standing water was also observed in this area. The undersigned recommended a minimum 6-inch undercut to remove the soft, wet soils and to backfill the resulting excavations with VDOT No. 57 Stone.

While on-site, the undersigned observed the contractors remove the pipe in the aforementioned deficient areas and undercut the unstable area approximately 10-inches. The subgrade was probed utilizing a 1.75-inch diameter geo-stick with penetrations of less than 1/2 inch observed, indicating firm and stable subgrade. VDOT No. 57 Stone was being placed at the time the undersigned left the site.

By **Scott Gresham, — Construction Services Manager** 1100

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

LETTER OF TRANSMITTAL

February 15, 2013	RE: **Kingsmill Utility Line Backfill**
Kingsmill Community Service Association 300 McLaws Circle, Suite 106 Williamsburg, VA 23185	ECS Job # **07:11512**
	Permits:
ATTN: Ms. Susan Sickal	Location: **Tutter's Neck** **Williamsburg, VA**

We are enclosing:

X Materials Engineering Division Reports
X For your use
X As requested

ENCL:

Field Report # 3	02/13/2013	Soil Pickup

COMMONWEALTH OF VIRGINIA
B. SCOTT GRESHAM
No. 037795
PROFESSIONAL ENGINEER
FEB 15 2013

Scott Gresham, P.E.
Construction Services Manager

Sara B. Phillips
Staff Project Manager

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	3
Day & Date	Wednesday 02/13/2013
Weather	50°/ Rain
On-Site Time	0.50
Lab Time	0.00
Travel Time*	0.50
Total	1.00
Re Obs.Time	0.00

Project	Kingsmill Utility Line Backfill
Location	Williamsburg, VA
Client	Kingsmill Community Service Association - Susan

Remarks **Soil Pickup**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival **08:00A** Departure **08:30A**

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to obtain a bulk sample of soil material. One (1) bulk soil sample was obtained from an on-site stockpile and was returned to the ECS laboratory for further testing and analysis.

By **Aaron John Irons** 1800

191317

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

LETTER OF TRANSMITTAL

February 25, 2013	RE: **Kingsmill Utility Line Backfill**
Kingsmill Community Service Association 300 McLaws Circle, Suite 106 Williamsburg, VA 23185	ECS Job # **07:11512** Permits:
ATTN: Ms. Susan Sickal	Location: **Tutter's Neck** **Williamsburg, VA**

We are enclosing:

_X_ Materials Engineering Division Reports
_X_ For your use
_X_ As requested

ENCL:

Field Report # 4	02/19/2013	Observations
Field Report # 5	02/20/2013	Observations

COMMONWEALTH OF VIRGINIA
W. LLOYD WARD
No. 034[illegible]
PROFESSIONAL ENGINEER
FEB 25 2013

W. Lloyd Ward
Branch Manager, Principal Engineer

Sara B. Phillips
Staff Project Manager

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	**07:11512**
Report No.	**4**
Day & Date	**Tuesday 02/19/2013**
Weather	**50°/ Rain**
On-Site Time	**2.75**
Lab Time	**0.50**
Travel Time*	**0.50**
Total	**3.75**
Re Obs.Time	**0.00**

Project	**Kingsmill Utility Line Backfill**
Location	**Williamsburg, VA**
Client	**Kingsmill Community Service Association - Susan**

Remarks **Observations**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival Departure
10:45A 01:30P

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to observe the placement of the storm drain next to the golf course and behind Littletown Quarter.

The undersigned observed Ryan Construction excavating the area for storm drain structure 2B. After excavating to the correct depth per the contractor, the crew placed VDOT No. 57 stone in the base of the excavation. The pipe structure was placed on top of the stone and was tied into the existing storm drain pipe. Heavy rain occurred and all remaining work was cancelled for the rest of the day.

By **Ryan Andrew Reynolds, — Field Technician** 1700

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	5
Day & Date	Wednesday 02/20/2013
Weather	46°/ Sunny
On-Site Time	8.75
Lab Time	0.50
Travel Time*	0.50
Total	9.75
Re Obs.Time	0.00

Project	**Kingsmill Utility Line Backfill**
Location	**Williamsburg, VA**
Client	**Kingsmill Community Service Association - Susan**

Remarks **Observations**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of	Arrival	Departure
	08:00A	04:45P

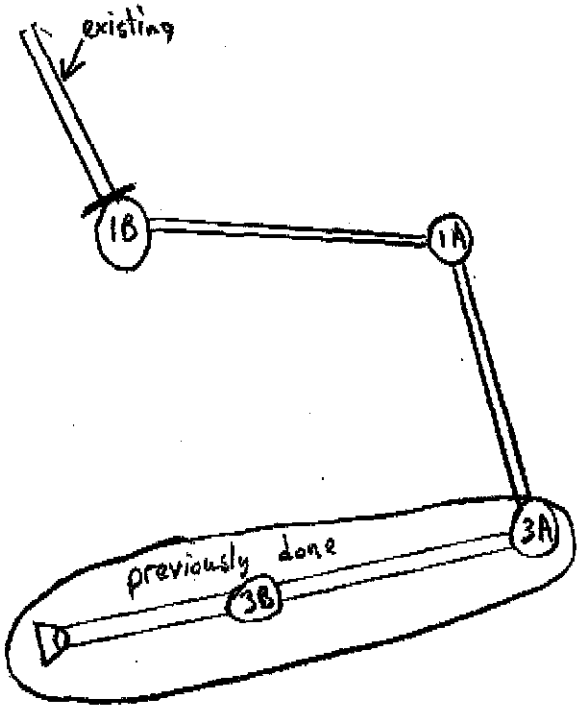
* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to observe the placement of the 15-inch storm drain pipe from structure 2B to 1A, and from structure 1A to 3A.

The undersigned observed Ryan Construction placing 30 feet of pipe from structure 2B to 1A, and 30 feet of pipe from 1A to 3A. The pipe was installed according to the job specifications and within James City County requirements. Please refer to the attached sketch and Closed Storm Drain System Construction Inspection Checklist for further information.

By **Ryan Andrew Reynolds, — Field Technician** 1700



LOCATION: _____

TECHNICIAN: RAR

DATE: 2-20-13

ECS LLC MID-ATLANTIC

SITE DRAWING

ECS PROJECT NAME: Kingsmill Utility Line Backfill

ECS PROJECT NO.: 11512

WORK ORDER ID #: 70696

Project Name: Kingsmill Utility Line Backfill
Location: Behind Littletown Quarters
Project Number: 11512
Date of Inspection: 2-20-13
Inspector(s): RAR
Date: 2-20-13
Time:

Closed Storm Drain System Construction Inspection Checklist

Development Status (Active, Inactive, Complete): Active

Stage of Construction (Pre-Construction, Installation, etc): Installation

Item	X	Comments
1. Type of closed pipe system		
a. Round	✓	
b. Elliptical		
c. Other		
2. Type of pipe material		
a. Reinforced concrete pipe (RCP)	✓	
b. HPDE		
c. Corrugated metal		
d. Other		

Item	S	U	N/A	Comments
1. Pre-construction meeting			✓	
a. Review of plan details, and sequence of construction	✓			
b. Review of required inspections, geo-tech reports, checklists & certificates			✓	

Item	S	U	N/A	Comments
1. Pipe and structures delivered and inspected prior to construction	✓			
a. Inspect for material, diameter, dimensions and condition	✓			

Item	S	U	N/A	Comments
1. Excavation and grading conform to plans	✓			
a. Trench bottom shaped to permit barrel of pipe to be in direct contact with soil or bedding	✓			
b. Areas excavated below established grade shall be backfilled with VDOT #25 or 26 aggregate (unless water is encountered then #57 aggregate shall be used).	✓			57 stone used

12.	All earthwork shall be in conformance with VDOT Standard and Specification #309	✓		

Item	S	U	N/A	Comments
1. Bedding per VDOT 302.03(a)2(b)				
a. Material shall be VDOT #25 or #26 aggregate or as specified on the approved plans (unless water is encountered - then #67 aggregate shall be used).	✓			
b. Shall be lightly compacted and shaped so pipe is in full contact with bedding	✓			
c. Shall be shaped to accommodate the bell when bell and spigot pipe is used	✓			
2. Placing Pipe per VDOT 302.03(a)2c				
a. Pipe shall be placed beginning at downstream end with bell or groove ends of rigid pipe facing upstream	✓			
b. Pipe shall be inspected before backfill is placed	✓			
3. Joining Pipe per VDOT 302.03(a)2(d)				
a. Rigid pipe sections shall have ends fully entered and inner surfaces flush and even	✓			
b. Joints shall be sealed to form a leak-resistant joint	✓			
c. Flexible pipe sections shall be firmly joined by approved coupling bands to form a leak-resistant joint			✓	
d. When pipes enter structure, the inside of the pipe/structure joint shall be flush and fully finished			✓	to mortar the next day
e. Lift holes in rigid pipe shall be plugged with a lift hole plug furnished by the manufacturer (302.03)			✓	
4. Backfill shall be compacted in horizontal layers not more than six inches in thickness, layer measurements VDOT 303.04(a)			✓	no backfill on this day
5. Compaction of backfill shall be in accordance with VTM-1 to the following densities:			✓	
a. 95% beneath pavement, walks and road shoulders			✓	
b. 90% in other unpaved areas				
6. Testing and Inspection				
a. Each lift shall be tested for compaction on alternating sides of the pipe at intervals not to exceed 300 feet			✓	backfill tomorrow
b. Pipe shall be inspected before any backfill is placed. (VDOT 302.03(a)2c)	✓			

Item	S	U	N/A	Comments
1. Pipes and structures shall be free of sediment and debris	✓			
2. All inlet protection measures removed			✓	
3. All joints sealed			✓	
4. Outlet protection installed and operational			✓	
5. Configuration and dimensions of pipe system conforms with approved plans	✓			

Item	S	U	N/A	Comments
1. Construction certification submitted and			✓	
2. As-built plans submitted and approved			✓	
3. Performance bond status				
a. Not released			✓	
b. Partial release				
c. Full release				
4. Certificate of completion issued			✓	

2-20-13

15" concrete pipe placed from structure 1B to 1A then to 3A

1. No action necessary; continue routine	✓	
2. Correct noted deficiencies		Correct by:
a.	1st notice	
b.	2nd notice	
3. Submit modifications to project plans		Submit by:

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

LETTER OF TRANSMITTAL

February 28, 2013	RE: **Kingsmill Utility Line Backfill**
Kingsmill Community Service Association 300 McLaws Circle, Suite 106 Williamsburg, VA 23185	ECS Job # **07:11512** Permits:
ATTN: Ms. Susan Sickal	Location: **Tutter's Neck** **Williamsburg, VA**

We are enclosing:

X Materials Engineering Division Reports
X For your use
X As requested

ENCL:

Field Report # 6	02/21/2013	Observations
Field Report # 7	02/22/2013	Observations

COMMONWEALTH OF VIRGINIA
W. LLOYD WARD
No. 034[illegible]
PROFESSIONAL ENGINEER
FEB 28 2013

W. Lloyd Ward
Branch Manager, Principal Engineer

Sara B. Phillips
Staff Project Manager

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	6
Day & Date	Thursday 02/21/2013
Weather	45°/ Sunny
On-Site Time	8.00
Lab Time	0.50
Travel Time*	0.50
Total	9.00
Re Obs.Time	0.00

Project	Kingsmill Utility Line Backfill
Location	Williamsburg, VA
Client	Kingsmill Community Service Association - Susan

Remarks **Observations**

Trip Charges* Tolls/Parking* Mileage* 20

Chargeable Items

Time of Arrival Departure
08:45A 04:45P

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to observe the placement of the new storm drain system behind Littletown Quarter from structure 1A to 3B.

The pipe was backfilled with VDOT No. 57 Stone from structure 1A to 3B. The stone was backfilled to approximately 12-inches from the surface, except from structure 3A to 3B. No compaction tests were performed on this day due to other ongoing construction activities. Please refer to the attached sketch and Closed Storm Drain System Construction Inspection Checklist for further information.

By **Ryan Andrew Reynolds, — Field Technician** 1700

Project Name: Kingsmill Utility Line Backfill
Location: behind Littletown Quarters
Project Number: 1152
Date of Inspection: 2-21-13
Inspector(s): KAR
Date: 2-21-13
Time:

Closed Storm Drain System Construction Inspection Checklist

Development Status (Active, Inactive, Complete): Active

Stage of Construction (Pre-Construction, Installation, etc): Installation

Item	X	Comments
1. Type of closed pipe system		
a. Round	✓	
b. Elliptical		
c. Other		
2. Type of pipe material		
a. Reinforced concrete pipe (RCP)	✓	
b. HPDE		
c. Corrugated metal		
d. Other		

Item	S	U	N/A	Comments
1. Pre-construction meeting			✓	
a. Review of plan details, and sequence of construction	✓		✓	
b. Review of required inspections, geo-tech reports, checklists & certificates			✓	

Item	S	U	N/A	Comments
1. Pipe and structures delivered and inspected prior to construction	✓			
a. Inspect for material, diameter, dimensions and condition	✓			

Item	S	U	N/A	Comments
1. Excavation and grading conform to plans	✓			
a. Trench bottom shaped to permit barrel of pipe to be in direct contact with soil or bedding	✓			
b. Areas excavated below established grade shall be backfilled with VDOT #25 or 26 aggregate (unless water is encountered - then #57 aggregate shall be used).	✓			57 stone used

2. All earthwork shall be in conformance with VDOT Standard and Specification #303	✓			

Item	S	U	N/A	Comments
1. Bedding per VDOT 302.03(a)2(b)	✓			
a. Material shall be VDOT #26 or #28 aggregate or as specified on the approved plans (unless water is encountered - then #57 aggregate shall be used)	✓			
b. Shall be lightly compacted and shaped so pipe is in full contact with bedding	✓			
c. Shall be shaped to accommodate the bell when bell and spigot pipe is used	✓			
2. Placing Pipe per VDOT 302.03(a)2c				
a. Pipe shall be placed beginning at downstream end with bell or groove ends of rigid pipe facing upstream	✓			
b. Pipe shall be inspected before backfill is placed	✓			
3. Jointing Pipe per VDOT 302.03(a)2(d)				
a. Rigid pipe sections shall have ends fully entered and inner surfaces flush and even	✓			
b. Joints shall be sealed to form a leak-resistant joint	✓			
c. Flexible pipe sections shall be firmly joined by approved coupling bands to form a leak-resistant joint			✓	
d. Where pipes enter structure, the inside of the pipe/structure joint shall be flush and fully mortared	✓			mortared today.
e. Lift holes in rigid pipe shall be plugged with a lift hole plug furnished by the manufacturer (302.03)			✓	
4. Backfill shall be completed in horizontal layers not more that six inches in thickness, loose measurement. VDOT 303.04(a)			✓	backfilled w/57 stone except last foot
5. Compaction of backfill shall be in accordance with VTM-1 to the following densities:			✓	
a. 95% beneath pavement, walks and road shoulders			✓	
b. 90% in other unpaved areas				
6. Testing and Inspection				
a. Each lift shall be tested for compaction on alternating sides of the pipe at intervals not to exceed 300 feet			✓	backfilled w/57 stone but soil not compacted today
b. Pipe shall be inspected before any backfill is placed. (VDOT 302.03(a)2c)	✓			

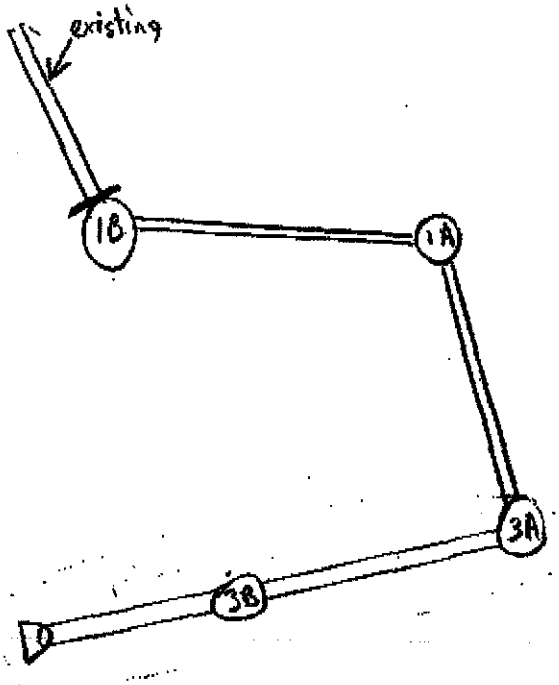
Item	S	U	N/A	Comments
1. Pipes and structures shall be free of sediment and debris	✓			
2. All inlet protection measures removed			✓	
3. All joints sealed			✓	
4. Outlet protection installed and operational			✓	
5. Configuration and dimensions of pipe system conforms with approved plans	✓			

Item	S	U	N/A	Comments
1. Construction certification submitted and			✓	
2. As-built plans submitted and approved			✓	
3. Performance bond status				
a. Not released			✓	
b. Partial release				
c. Full release				
4. Certificate of completion issued			✓	

2-21-13

15" concrete pipe backfilled with 57 stone upto a foot from surface from structure 1A to 3B, compaction not done on this day on soil, inlets into the structures where mortared today

1. No action necessary; continue routine	✓		
2. Correct noted deficiencies		Correct by:	
a.	1st notice		
b.	2nd notice		
3. Submit modifications to project plans		Submit by:	



LOCATION: _____

TECHNICIAN: RAR

DATE: 2-21-13

ECS LLC MID-ATLANTIC

SITE DRAWING

ECS PROJECT NAME: Kingsmill Utility Line Backfill

ECS PROJECT NO.: 1512

WORK ORDER ID #: 70730

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	7
Day & Date	Friday 02/22/2013
Weather	50°/ Cloudy
On-Site Time	3.50
Lab Time	0.50
Travel Time*	0.50
Total	4.50
Re Obs.Time	0.00

Project	**Kingsmill Utility Line Backfill**
Location	**Williamsburg, VA**
Client	**Kingsmill Community Service Association - Susan**

Remarks **Observations**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival **08:30A** Departure **12:00P**

* Travel time and mileage will be billed in accordance with the contract.

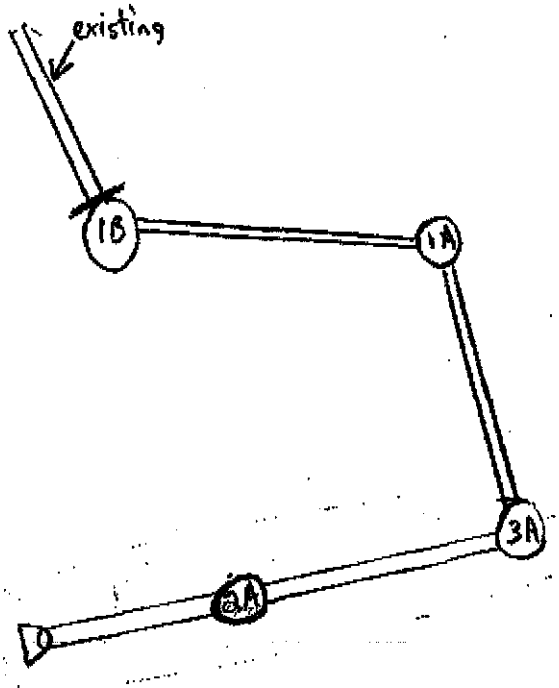
Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to observe the placement of the new storm drain system behind Littletown Quarters.

The undersigned observed the Ryan Construction crew placing mortar on the inside of the structures 1B, 1A, 3A, and 2A. The undersigned was informed by the crew leader, John Groenestyn with Ryan Construction, that compaction testing on the trenches will not be needed until Monday.

Note: On previous reports and attachments the undersigned mismarked the structure 2A for 3B. The attachment for today is marked correctly. Please refer to the attached sketch and Closed Storm Drain System Construction Inspection Checklist for further information.

By **Ryan Andrew Reynolds, — Field Technician** 1700



LOCATION: _____

TECHNICIAN: RAR

DATE: 2-22-13

ECS LLC MID-ATLANTIC

SITE DRAWING

ECS PROJECT NAME: Kingsmill Utility Line BackFill

ECS PROJECT NO.: 11512

WORK ORDER ID #: 70739

Project Name: Kingsmill Utility Line Backfill
Location: behind Littletown Quarters
Project Number: 1513
Date of Inspection: 2-22-13
Inspector(s): KAR
Date: 2-22-13
Time:

Closed Storm Drain System Construction Inspection Checklist

Development Status (Active, Inactive, Complete): Active

Stage of Construction (Pre-Construction, Installation, etc): Installation

Item	X	Comments
1. Type of closed pipe system		
a. Round	✓	
b. Elliptical		
c. Other		
2. Type of pipe material		
a. Reinforced concrete pipe (RCP)	✓	
b. HPDE		
c. Corrugated metal		
d. Other		

Item	S	U	N/A	Comments
1. Pre-construction meeting			✓	
a. Review of plan details, and sequence of construction	✓		✓	
b. Review of required inspections, geo-tech reports, checklists & certificates			✓	

Item	S	U	N/A	Comments
1. Pipe and structures delivered and inspected prior to construction	✓			
a. Inspect for material, diameter, dimensions and condition	✓			

Item	S	U	N/A	Comments
1. Excavation and grading conform to plans	✓			
a. Trench bottom shaped to provide barrel of pipe to be in direct contact with soil or bedding	✓			
b. Areas excavated below established grade shall be backfilled with VDOT #25 or 26 aggregate (unless water is encountered - then #57 aggregate shall be used).	✓			57 stone used

2. All earthwork shall be in conformance with VDOT Standard and Specification #303	✓			

Item	S	U	NA	Comments
1. Bedding per VDOT 302.03(a)2(b)				
a. Material shall be VDOT #26 or #28 aggregate or as specified on the approved plans (unless water is encountered - then #57 aggregate shall be used).	✓			
b. Shall be lightly compacted and shaped so pipe is in full contact with bedding	✓			
c. Shall be shaped to accommodate the bell when bell and spigot pipe is used	✓			
2. Placing Pipe per VDOT 302.03(a)2c				
a. Pipe shall be placed beginning at downstream end with bell or groove ends of rigid pipe facing upstream	✓			
b. Pipe shall be inspected before backfill is placed	✓			
3. Jointing Pipe per VDOT 302.03(a)2(d)				
a. Rigid pipe sections shall have ends fully entered and inner surfaces flush and even	✓			
b. Joints shall be sealed to form a leak-resistant joint	✓			
c. Flexible pipe sections shall be firmly joined by approved coupling bands to form a leak-resistant joint			✓	
d. Where pipes enter structure, the inside of the pipe/structure joint shall be flush and fully mortared	✓			mortared today
e. Lift holes in rigid pipe shall be plugged with a lift hole plug furnished by the manufacturer (302.03)			✓	
4. Backfill shall be completed in horizontal layers not more than six inches in thickness, loose measurement, VDOT 303.04(b)			✓	backfilled w/57 stone except last foot
5. Compaction of backfill shall be in accordance with VTM-1 to the following densities:			✓	
a. 95% beneath pavement, walks and road shoulders			✓	
b. 90% in other unpaved areas				
6. Testing and Inspection				
a. Each lift shall be tested for compaction on alternating sides of the pipe at intervals not to exceed 300 feet			✓	backfilled w/57 stone but soil not compacted today
b. Pipe shall be inspected before any backfill is placed. (VDOT 302.03(a)2c)	✓			

Item	S	U	N/A	Comments
1. Pipes and structures shall be free of sediment and debris	✓			
2. All inlet protection measures removed			✓	
3. All joints sealed			✓	
4. Outlet protection installed and operational			✓	
5. Configuration and dimensions of pipe system conforms with approved plans	✓			

Item	S	U	N/A	Comments
1. Construction certification submitted and			✓	
2. As-built plans submitted and approved			✓	
3. Performance bond status				
a. Not released			✓	
b. Partial release				
c. Full release				
4. Certificate of completion issued			✓	

2-22-13

Just the interior of the structures were mortared today

1. No action necessary; continue routine	✓	
2. Correct noted deficiencies		Correct by:
a.	1st notice	
b.	2nd notice	
3. Submit modifications to project plans		Submit by:

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

LETTER OF TRANSMITTAL

March 4, 2013

Kingsmill Community Service Association
300 McLaws Circle, Suite 106
Williamsburg, VA 23185

ATTN: Ms. Susan Sickal

RE: **Kingsmill Utility Line Backfill**
ECS Job # **07:11512**

Permits:
Location: **Tutter's Neck**
Williamsburg, VA

We are enclosing:

X Materials Engineering Division Reports
X For your use
X As requested

ENCL:

Field Report # 8	02/25/2013	Observations/FDT's
Field Report # 9	02/27/2013	Site Visit
Field Report # 10	02/28/2013	Observations
Field Report # 11	02/28/2013	Observations

COMMONWEALTH OF VIRGINIA
W. LLOYD WARD
No. 034[illegible]
PROFESSIONAL ENGINEER
MAR 4 2013

W. Lloyd Ward
Branch Manager, Principal Engineer

Sara B. Phillips
Staff Project Manager

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	8
Day & Date	Monday 02/25/2013
Weather	42°/ Cloudy
On-Site Time	7.75
Lab Time	0.50
Travel Time*	0.50
Total	8.75
Re Obs.Time	0.00

Project **Kingsmill Utility Line Backfill**
Location **Williamsburg, VA**
Client **Kingsmill Community Service Association - Susan**

Remarks **Observations/FDT's**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival **08:30A** Departure **04:15P**

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to observe the placement of rip rap stone for roughly 25 feet off the end of the flared outlet end of the storm drain pipe. The undersigned observed the construction crew placing geotextile fabric on the subgrade prior to rip rap stone placement.

While on-site, the undersigned also observed the placement and compaction of soils for the storm drain structure backfill from 2A to the flared outlet end. Please see the attached sketch.

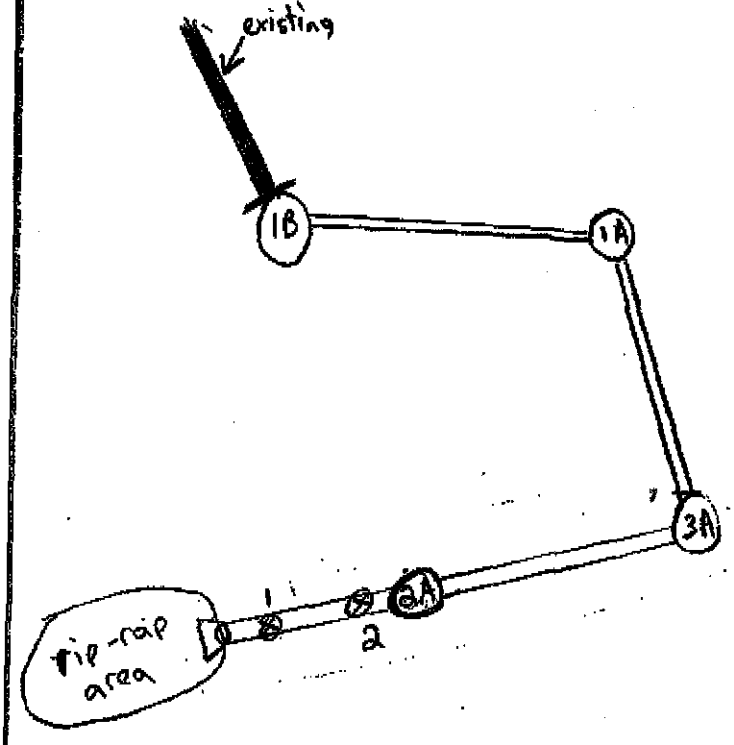
Utilizing the nuclear test method to check the compaction of soils; test results indicated that the compacted material, at the areas and elevations tested, met or exceeded the project requirements of 90% of the maximum dry density as obtained in our laboratory using the ASTM D 698-07 Method A Standard.

Locations and elevations of all tests are based on stakeout provided by others. We cannot be responsible for structures located off of the observed engineered pad, misaligned utilities or stakeout errors causing uncontrolled fill to be placed in structural areas.

The soils observed on this date appeared to be placed in accordance with project drawings and specifications with regard to lift thickness and moisture content.

Please refer to the attached sketch and Closed Storm Drain System Construction Inspection Checklist for further information.

By **Ryan Andrew Reynolds, — Field Technician** 1700



LOCATION:	ECS LLC MID-ATLANTIC	SITE DRAWING
		ECS PROJECT NAME: Kingsmill Utility Line Backfill
TECHNICIAN: RAR		ECS PROJECT NO.: 11512
DATE: 2-25-13		WORK ORDER ID #: 107226

Project Name: Kingsmill Utility Line Backfill
Location: behind Littletown Quarters
Project Number: 11512
Date of Inspection: 2-25-13
Inspector(s): RAR
Date: 2-25-13
Time:

Closed Storm Drain System Construction Inspection Checklist

Development Status (Active, Inactive, Complete): Active

Stage of Construction (Pre-Construction, Installation, etc): Installation

Item	X	Comments
1. Type of closed pipe system		
a. Round	✓	
b. Elliptical		
c. Other		
2. Type of pipe material		
a. Reinforced concrete pipe (RCP)	✓	
b. HPDE		
c. Corrugated metal		
d. Other		

Item	S	U	N/A	Comments
1. Pre-construction meeting			✓	
a. Review of plan details, and sequence of construction	✓		✓	
b. Review of required inspections, geo-tech reports, checklists & certificates			✓	

Item	S	U	N/A	Comments
1. Pipe and structures delivered and inspected prior to construction	✓			
a. Inspect for material, diameter, dimensions and condition	✓			

Item	S	U	N/A	Comments
1. Excavation and grading conform to plans	✓			
a. Trench bottom shaped to permit barrel of pipe to be in direct contact with soil or bedding	✓			
b. Areas excavated below established grade shall be backfilled with VDOT #25 or 26 aggregate (unless water is encountered - then #57 aggregate shall be used).	✓			57 stone used

2. All earthwork shall be in conformance with VDOT Standard and Specification #303	✓			

Item	S	U	N/A	Comments
1. Bedding per VDOT 302.03(a)2(b)				
a. Material shall be VDOT #25 or #26 aggregate or as specificied on the approved plans (unless water is encountered - then #57 aggregate shall be used).	✓			
b. Shall be lightly compacted and shaped so pipe is in full contact with bedding	✓			
c. Shall be shaped to accommodate the bell when bell and spigot pipe is used	✓			
2. Placing Pipe per VDOT 302.03(a)2c				
a. Pipe shall be placed beginning at downstream end with bell or groove ends of rigid pipe facing upstream	✓			
b. Pipe shall be inspected before backfill is placed	✓			
3. Joining Pipe per VDOT 302.03(a)2(d)				
a. Rigid pipe sections shall have ends fully entered and inner surfaces flush and even	✓			
b. Joints shall be sealed to form a leak-resistant joint	✓			
c. Flexible pipe sections shall be firmly joined by approved coupling bands to form a leak-resistant joint			✓	
d. When pipes enter structure, the inside of the pipe/structure joint shall be flush and fully mortared	✓			
e. Lift holes in rigid pipe shall be plugged with a lift hole plug furnished by the manufacturer (302.03)			✓	
4. Backfill shall be compacted in horizontal layers not more that six inches in thickness, loose measurement, VDOT 303.04(b)	✓			backfilled using soil from structure 2A until the end
5. Compaction of backfill shall be in accordance with VTM-1 to the following densities:			✓	
a. 95% beneath pavement, walks and road shoulders			✓	
b. 90% in other unpaved areas	✓			
6. Testing and Inspection				
a. Each lift shall be tested for compaction on alternating sides of the pipe at intervals not to exceed 300 feet	✓			backfilled using soil from structure 2A until the end
b. Pipe shall be inspected before any backfill is placed. (VDOT 302.03(a)2c)	✓			

Item	S	U	N/A	Comments
1. Pipes and structures shall be free of sediment and debris	✓			
2. All inlet protection measures removed			✓	
3. All joints sealed			✓	
4. Outlet protection installed and operational			✓	
5. Configuration and dimensions of pipe system conforms with approved plans	✓			

Item	S	U	N/A	Comments
1. Construction certification submitted and			✓	
2. As-built plans submitted and approved			✓	
3. Performance bond status				
a. Not released			✓	
b. Partial release				
c. Full release				
4. Certificate of completion issued			✓	

2-25-13

- backfilled with onsite soil today from structure 2A until the flared outlet end

- rip rap placed on the end of the storm drain

1. No action necessary; continue routine	✓	
2. Correct noted deficiencies		Correct by:
a.	1st notice	
b.	2nd notice	
3. Submit modifications to project plans		Submit by:

Field Compaction Summary, ASTM D6938

ECS MID-ATLANTIC, LLC

Project No: 11512 Project Name: Kingsmill Utility Line Backfill Date: 02/25/13

Client: Kingsmill Community Service Association

Contractor: None Listed

Technician: Ryan Andrew Reynolds

Test Method ASTM D6938			
Nuclear Gauge No. 10			
Make		Density Std	2203
Model		Moisture Std	610
Ser. No.	78941		

Sample: **B-1** Description: **Silty Fine to Medium SAND, w/ Clay Pockets, Brown,** Proctor Method: **Standard Proctor Method (ASTM D-698)** Uncorrected Max. Density: **119.70** Uncorrected Opt. MC: **12.90**

Test No.	Test Mode	Probe Depth	Station / Location	Lift / Elev	% Oversize	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture Content (%)	Test Data: Wet Density (pcf)	Test Data: Dry Density (pcf)	Test Data: Moisture Content (%)	Test Data: Percent Comp. (%)	P / F	Comments

Sample: **B-2** Description: **Clayey F-M SAND, Orange - Brown, Moist** Proctor Method: **ASTM D 698-07 Method A Standard** Uncorrected Max. Density: **114.40** Uncorrected Opt. MC: **16.40**

Test No.	Test Mode	Probe Depth	Station / Location	Lift / Elev	% Oversize	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture Content (%)	Test Data: Wet Density (pcf)	Test Data: Dry Density (pcf)	Test Data: Moisture Content (%)	Test Data: Percent Comp. (%)	P / F	Comments

Test Mode: DT = Direct Transmission BS = Back Scatter

Field Compaction Summary, ASTM D6938

ECS MID-ATLANTIC, LLC

Project No: 11512 Project Name: Kingsmill Utility Line Backfill Date: 02/25/13

Client: Kingsmill Community Service Association

Contractor: None Listed

Technician: Ryan Andrew Reynolds

Test Method ASTM D6938			
Nuclear Gauge No. 10			
Make		Density Std	2203
Model		Moisture Std	610
Ser. No.	78941		

Sample: **B-3** Description: **Mix of B-1 and B-2** Proctor Method: **ASTM D 698-07 Method A Standard** Uncorrected Max. Density: **118.20** Uncorrected Opt. MC: **13.50**

Test No.	Test Mode	Probe Depth	Station / Location	Lift / Elev	% Oversize	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture Content (%)	Test Data: Wet Density (pcf)	Test Data: Dry Density (pcf)	Test Data: Moisture Content (%)	Test Data: Percent Comp. (%)	P / F	Comments

Sample: **B-4** Description: **Sandy CLAY, Brown, Moist** Proctor Method: **ASTM D 698-07 Method A Standard** Uncorrected Max. Density: **97.50** Uncorrected Opt. MC: **23.20**

Test No.	Test Mode	Probe Depth	Station / Location	Lift / Elev	% Oversize	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture Content (%)	Test Data: Wet Density (pcf)	Test Data: Dry Density (pcf)	Test Data: Moisture Content (%)	Test Data: Percent Comp. (%)	P / F	Comments

Test Mode: DT = Direct Transmission BS = Back Scatter

Field Compaction Summary, ASTM D6938

ECS MID-ATLANTIC, LLC

Project No: 11512 Project Name: Kingsmill Utility Line Backfill Date: 02/25/13

Client: Kingsmill Community Service Association

Contractor: None Listed

Technician: Ryan Andrew Reynolds

Test Method ASTM D6938			
Nuclear Gauge No. 10			
Make		Density Std	2203
Model		Moisture Std	610
Ser. No.	78941		

Sample: **B-5** Description: **Brown,fine to medium, SILTY SAND** Proctor Method: **Standard Proctor Method (ASTM D-698)** Uncorrected Max. Density: **116.00** Uncorrected Opt. MC: **14.70**

Test No.	Test Mode	Probe Depth	Station / Location	Lift / Elev	% Oversize	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture Content (%)	Test Data				P / F	Comments
								Wet Density (pcf)	Dry Density (pcf)	Moisture Content (%)	Percent Comp. (%)		
1	DT	4	structure 2A to the flared outlet end	-6" BFG	0.00	116.00	14.70	121.2	105.1	15.3	90.6	P	storm drain, green area
2	DT	4	structure 2A to the flared outlet end	FG	0.00	116.00	14.70	123.0	106.2	15.8	91.6	P	storm drain, green area

Test Mode: DT = Direct Transmission BS = Back Scatter

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	9
Day & Date	Wednesday 02/27/2013
Weather	45°/ Cloudy
On-Site Time	0.50
Lab Time	0.50
Travel Time*	0.50
Total	1.50
Re Obs.Time	0.00

Project	Kingsmill Utility Line Backfill
Location	Williamsburg, VA
Client	Kingsmill Community Service Association - Susan

Remarks **Site Visit**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival Departure
08:30A 09:00A

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on site, as requested, to observe the work on the storm drain system behind Littletown Quarters.

Upon arrival, the undersigned discovered that Ryan Construction was not on-site. The undersigned waited on-site until 9:00am. Cancellation calls were not received by the ECS office from Ryan Construction. ECS called Ryan Construction to determine a schedule of work.

By **Ryan Andrew Reynolds, — Field Technician** 1700

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	10
Day & Date	Thursday 02/28/2013
Weather	40°/ Cloudy
On-Site Time	1.25
Lab Time	0.50
Travel Time*	0.50
Total	2.25
Re Obs.Time	0.00

Project	**Kingsmill Utility Line Backfill**
Location	**Williamsburg, VA**
Client	**Kingsmill Community Service Association - Susan**

Remarks **Observations**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival **09:45A** Departure **11:00A**

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to observe the placement of VDOT No. 57 Stone for the utility lines.

While the undersigned was on site, backfilling operations were not performed. ECS technician (Ryan Reynolds) arrived to relieve the undersigned. Please see Ryan Reynolds report on this date for specific information regarding backfilling for utility lines.

By **Catherine Lynn Stetzer, — Field Technician** 1800

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	**07:11512**
Report No.	**11**
Day & Date	**Thursday 02/28/2013**
Weather	**55°/ Cloudy**
On-Site Time	**5.00**
Lab Time	**0.50**
Travel Time*	**0.50**
Total	**6.00**
Re Obs.Time	**0.00**

Project	**Kingsmill Utility Line Backfill**
Location	**Williamsburg, VA**
Client	**Kingsmill Community Service Association - Susan**

Remarks **Observations**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival Departure
10:45A 03:45P

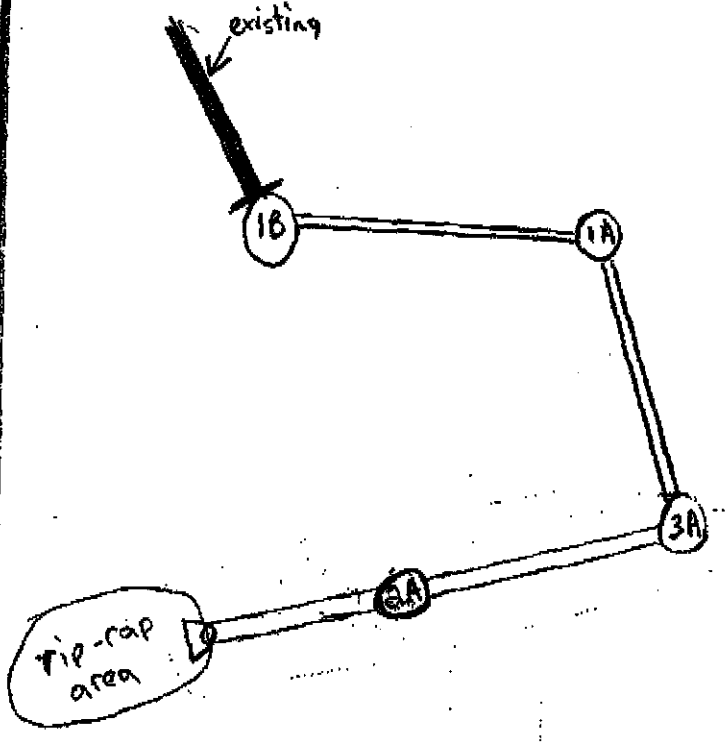
* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

The undersigned arrived on-site, as requested, to observe the placement of stone for the the storm drain located behind Littletown Quarters.

The undersigned arrived on-site to relieve ECS technician Catherine Stetzer. Ryan Construction was observed to be in the process backfilling the pipe trenches with VDOT No. 57 Stone. The stone was filled in the trenches from structure 1B to 1A, from 1A to 3A, and 3A to 2A. The stone was backfilled to approximately 12-inches below the finished soil subgrade elevation. Soil backfill will be placed tomorrow. Please refer to the attached sketch and Closed Storm Drain System Construction Inspection Checklist for further information.

By **Ryan Andrew Reynolds, — Field Technician** 1700



LOCATION:	ECS LLC MID-ATLANTIC	SITE DRAWING
		ECS PROJECT NAME: Kingsgrill Utility Line Backfill
TECHNICIAN: RAR		ECS PROJECT NO.: 11512
DATE: 2-28-13		WORK ORDER ID #:

Project Name: Kingsmill Utility Line Backfill
Location: behind Littletown Quarters
Project Number: 1512
Date of Inspection: 2-28-13
Inspector(s): RAR
Date: 2-28-13
Time:

Closed Storm Drain System Construction Inspection Checklist

Development Status (Active, Inactive, Complete): Active

Stage of Construction (Pre-Construction, Installation, etc): Installation

Item	X	Comments
1. Type of closed pipe system		
a. Round	✓	
b. Elliptical		
c. Other		
2. Type of pipe material		
a. Reinforced concrete pipe (RCP)	✓	
b. HPDE		
c. Corrugated metal		
d. Other		

Item	S	U	N/A	Comments
1. Pre-construction meeting			✓	
a. Review of plan details, and sequence of construction	✓		✓	
b. Review of required inspections, geo-tech reports, checklists & certificates			✓	

Item	S	U	N/A	Comments
1. Pipe and structures delivered and inspected prior to construction	✓			
a. Inspect for material, diameter, dimensions and condition	✓			

Item	S	U	N/A	Comments
1. Excavation and grading conform to plans	✓			
a. Trench bottom sloped to permit barrel of pipe to be in direct contact with soil or bedding	✓			
b. Areas excavated below established grade shall be backfilled with VDOT #25 or 26 aggregate (unless water is encountered - then #57 aggregate shall be used).	✓			57 stone used

2. All earthwork shall be in conformance with VDOT Standard and Specification #303	✓			

Item	S	U	N/A	Comments
1. Bedding per VDOT 302.03(a)2(b)	✓			
a. Material shall be VDOT #25 or #26 aggregate or as specificied on the approved plans (unless water is encountered - then #57 aggregate shall be used).	✓			
b. Shall be lightly compacted and shaped so pipe is in full contact with bedding	✓			
c. Shall be shaped to accommodate the bell when bell and spigot pipe is used	✓			
2. Placing Pipe per VDOT 302.03(a)2c				
a. Pipe shall be placed beginning at downstream end with bell or groove ends of rigid pipe facing upstream	✓			
b. Pipe shall be inspected before backfill is placed	✓			
3. Joining Pipe per VDOT 302.03(a)2(d)				
a. Rigid pipe sections shall have ends fully entered and inner surfaces flush and even	✓			
b. Joints shall be sealed to form a leak-resistant joint	✓			
c. Flexible pipe sections shall be firmly joined by approved coupling bands to form a leak-resistant joint			✓	
d. When pipes enter structure, the inside of the pipe/structure joint shall be flush and fully mortared	✓			
e. Lift holes in rigid pipe shall be plugged with a lift hole plug furnished by the manufacturer (302.03)			✓	
4. Backfill shall be compacted in horizontal layers not more that six inches in thickness, loose measurement. VDOT 303.04(b)	✓			backfilled using soil from structure 2A until the end/57 stone used elsewhere until 1 foot from surface
5. Compaction of backfill shall be in accordance with VTM-1 to the following densities:			✓	
a. 95% beneath pavement, walks and road shoulders			✓	
b. 90% in other unpaved areas	✓			
6. Testing and Inspection				
a. Each lift shall be tested for compaction on alternating sides of the pipe at intervals not to exceed 300 feet	✓			backfilled using soil from structure 2A until the end/57 stone used elsewhere
b. Pipe shall be inspected before any backfill is placed. (VDOT 302.03(a)2c)	✓			

Item	S	U	N/A	Comments
1. Pipes and structures shall be free of sediment and debris	✓			
2. All inlet protection measures removed			✓	
3. All joints sealed			✓	
4. Outlet protection installed and operational			✓	
5. Configuration and dimensions of pipe system conforms with approved plans	✓			

Item	S	U	N/A	Comments
1. Construction certification submitted and			✓	
2. As-built plans submitted and approved			✓	
3. Performance bond status				
a. Not released			✓	
b. Partial release				
c. Full release				
4. Certificate of completion issued			✓	

2-28-13

- backfilled with #57 stone in the storm drain trenches until 1 foot from surface from structure 1B upto structure 2A

1. No action necessary; continue routine		✓	
2. Correct noted deficiencies			Correct by:
a.	1st notice		
b.	2nd notice		
3. Submit modifications to project plans			Submit by:

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

LETTER OF TRANSMITTAL

March 5, 2013	RE: **Kingsmill Utility Line Backfill**
Kingsmill Community Service Association 300 McLaws Circle, Suite 106 Williamsburg, VA 23185	ECS Job # **07:11512**
ATTN: Ms. Susan Sickal	Permits: Location: **Tutter's Neck** **Williamsburg, VA**

We are enclosing:

_X_ Materials Engineering Division Reports
_X_ For your use
_X_ As requested

ENCL:

Field Report # 12 03/01/2013 Observations/FDT's

COMMONWEALTH OF VIRGINIA
W. LLOYD WARD
No. 0346
PROFESSIONAL ENGINEER
MAR 5 2013

W. Lloyd Ward
Branch Manager, Principal Engineer

Sara B. Phillips
Staff Project Manager

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677 [Phone]
(757) 229-9978 [Fax]

FIELD REPORT

Project No.	07:11512
Report No.	12
Day & Date	Friday 03/01/2013
Weather	48°/ Cloudy
On-Site Time	3.50
Lab Time	0.50
Travel Time*	0.50
Total	4.50
Re Obs.Time	0.00

Project	Kingsmill Utility Line Backfill
Location	Williamsburg, VA
Client	Kingsmill Community Service Association - Susan

Remarks **Observations/FDT's**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival Departure
08:45A 12:15P

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

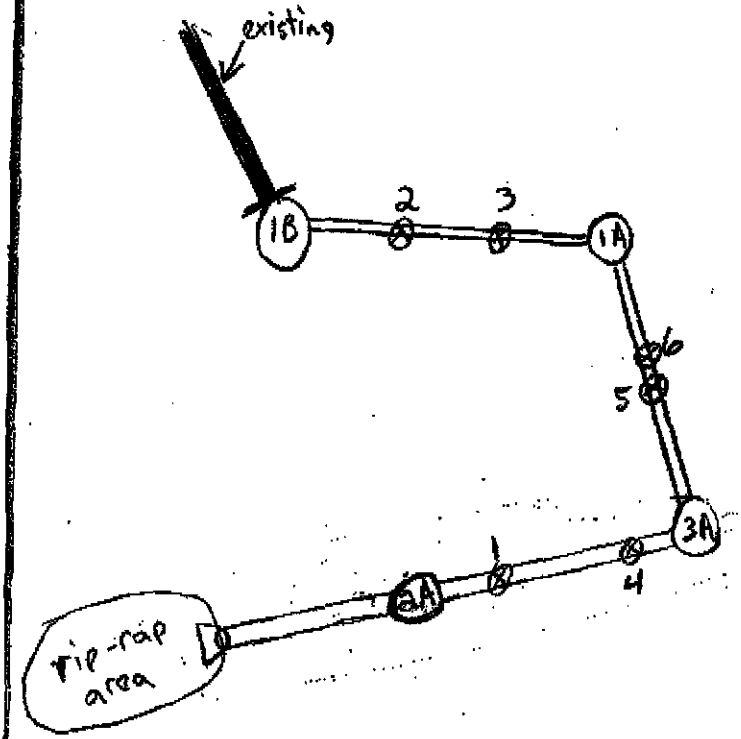
The undersigned arrived on site, as requested, to observe the placement and compaction of soil backfill for the storm drain trench from structure 1B to 2A. Please refer to the attached sketch and Closed Storm Drain System Construction Inspection Checklist for further information.

Utilizing the nuclear test method to check the compaction of soils; test results indicated that the compacted material, at the areas and elevations tested, met or exceeded the project requirements of 90% of the maximum dry density as obtained in our laboratory using the Standard Proctor Method (ASTM D 698).

Locations and elevations of all tests are based on stakeout provided by others. We cannot be responsible for structures located off of the observed engineered pad, misaligned utilities or stakeout errors causing uncontrolled fill to be placed in structural areas.

The soils observed on this date appeared to be placed in accordance with project drawings and specifications with regard to lift thickness and moisture content.

By **Ryan Andrew Reynolds, — Field Technician** 1700



LOCATION:	ECS LLC MID-ATLANTIC	SITE DRAWING
		ECS PROJECT NAME: Kingsmill Utility Line Backfill
TECHNICIAN: RAR		ECS PROJECT NO.: 11512
DATE: 3-1-13		WORK ORDER ID #: 70820

Project Name: Kingsmill Utility Line Backfill
Location: behind Littletown Quarters
Project Number: 1152
Date of Inspection: 3-12-13
Inspector(s): KAR
Date: 3-12-13
Time:

Closed Storm Drain System Construction Inspection Checklist

Development Status (Active, Inactive, Complete): Active

Stage of Construction (Pre-Construction, Installation, etc): Installation

Initial Questions

Item	X	Comments
1. Type of closed pipe system		
a. Round	✓	
b. Elliptical		
c. Other		
2. Type of pipe material		
a. Reinforced concrete pipe (RCP)	✓	
b. HPDE		
c. Corrugated metal		
d. Other		

Pre-Construction

Item	S	U	N/A	Comments
1. Pre-construction meeting			✓	
a. Review of plan details, and sequence of construction	✓		✓	
b. Review of required inspections, geo-tech reports, checklists & certificates			✓	

Site Preparation

Item	S	U	N/A	Comments
1. Pipe and structures delivered and inspected prior to construction	✓			
a. Inspect for material, diameter, dimensions and condition	✓			

Excavation and Grading

Item	S	U	N/A	Comments
1. Excavation and grading conform to plans	✓			
a. Trench bottom shaped to permit barrel of pipe to be in direct contact with soil or bedding	✓			
b. Areas excavated below established grade shall be backfilled with VDOT #25 or 26 aggregate (unless water is encountered - then #57 aggregate shall be used).	✓			57 stone used

2. All earthwork shall be in conformance with VDOT Standard and Specification #303	✓			

Item	S	U	NA	Comments
1. Bedding per VDOT 302.03(a)2(b)	✓			
a. Material shall be VDOT #26 or #28 aggregate or as specificied on the approved plans (unless water is encountered - then #57 aggregate shall be used).	✓			
b. Shall be lightly compacted and shaped so pipe is in full contact with bedding	✓			
c. Shall be shaped to accommodate the bell when bell and spigot pipe is used	✓			
2. Placing Pipe per VDOT 302.03(a)2c				
a. Pipe shall be placed beginning at downstream end with bell or groove ends of rigid pipe facing upstream	✓			
b. Pipe shall be inspected before backfill is placed	✓			
3. Joining Pipe per VDOT 302.03(a)2(d)				
a. Rigid pipe sections shall have ends fully entered and inner surfaces flush and even	✓			
b. Joints shall be sealed to form a leak-resistant joint	✓			
c. Flexible pipe sections shall be firmly joined by approved coupling bands to form a leak-resistant joint			✓	
d. When pipes enter structure, the inside of the pipe/structure joint shall be flush and fully mortared	✓			
e. Lift holes in rigid pipe shall be plugged with a lift hole plug furnished by the manufacturer (302.03)			✓	
4. Backfill shall be compacted in horizontal layers not more that six inches in thickness, loose measurement, VDOT 303.04(a)	✓			backfilled using soil from structure 2A until the end/57 stone used elsewhere until 1 foot from surface where soil used
5. Compaction of backfill shall be in accordance with VTM-1 to the following densities:	✓			
a. 95% beneath pavement, walks and road shoulders			✓	
b. 90% in other unpaved areas	✓			
6. Testing and inspection				
a. Each lift shall be tested for compaction on alternating sides of the pipe at intervals not to exceed 300 feet	✓			backfilled using soil from structure 2A until the end/57 stone used elsewhere until 1 foot from soil grade where soil was used the last foot
b. Pipe shall be inspected before any backfill is placed. (VDOT 302.03(a)2c)	✓			

Item	S	U	NA	Comments
1. Pipes and structures shall be free of sediment and debris	✓			
2. All inlet protection measures removed	✓			
3. All joints sealed	✓			
4. Outlet protection installed and operational	✓			
5. Configuration and dimensions of pipe system conforms with approved plans	✓			

Item	S	U	NA	Comments
1. Construction certification submitted and			✓	
2. As-built plans submitted and approved			✓	
3. Performance bond status			✓	
a. Not released				
b. Partial release				
c. Full release			✓	
4. Certificate of completion issued				

3-1-13

- observed Ryan Construction placing soil on the last foot of backfill in the storm drain trenches from structure 1B to 2A
- compaction tests were taken on the soil

1. No action necessary; continue routine	✓	
2. Correct noted deficiencies		Correct by:
a.	1st notice	
b.	2nd notice	
3. Submit modifications to project plans		Submit by:

Field Compaction Summary, ASTM D6938

ECS MID-ATLANTIC, LLC

Project No: 11512 Project Name: Kingsmill Utility Line Backfill Date: 03/01/13

Client: Kingsmill Community Service Association

Contractor: None Listed

Technician: Ryan Andrew Reynolds

Test Method ASTM D6938			
Nuclear Gauge No. 10			
Make		Density Std	2120
Model		Moisture Std	632
Ser. No.	17394		

Sample: **B-4** Description: **Brown, Sandy CLAY, (CL)** Proctor Method: **Standard Proctor ASTM D 698** Uncorrected Max. Density: **97.50** Uncorrected Opt. MC: **23.20**

Test No.	Test Mode	Probe Depth	Station / Location	Lift / Elev	% Oversize	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture Content (%)	Test Data				P / F	Comments
								Wet Density (pcf)	Dry Density (pcf)	Moisture Content (%)	Percent Comp. (%)		
1	DT	6	storm drain backfill between structure 2A and 3A	-6" BFG	0.00	97.50	23.20	114.8	91.6	25.3	93.9	P	green area
2	DT	6	storm drain backfill between structure 1A and 1B	-6" BFG	0.00	97.50	23.20	114.0	90.1	26.5	92.4	P	green area
3	DT	6	storm drain backfill between structure 1A and 1B	FG	0.00	97.50	23.20	116.5	92.4	26.1	94.8	P	green area
4	DT	6	storm drain backfill between structure 2A and 3A	FG	0.00	97.50	23.20	115.3	91.7	25.7	94.1	P	green area
5	DT	6	storm drain backfill between structure 1A and 3A	-6" BFG	0.00	97.50	23.20	116.9	93.8	24.7	96.2	P	green area
6	DT	0	storm drain backfill between structure 1A and 3A	FG	0.00	97.50	23.20	117.3	92.0	27.5	94.4	P	green area

Test Mode: DT = Direct Transmission BS = Back Scatter

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Williamsburg, VA 23188
(757) 229-6677

LETTER OF TRANSMITTAL

April 27, 2012

Kingsmill Community Service Association
PO Box 348
Williamsburg, VA 23187

ATTN: Ms. Susan Sickal

RE: **Kingsmill Utility Line Backfill**

ECS Job # **07:11512**

Permits:

Location: **Tutter's Neck**
Williamsburg, VA

We are enclosing:

X Materials Engineering Division Reports
X For your use
X As requested

ENCL:

Field Report # 1	04/25/2012	Compaction Testing

COMMONWEALTH OF VIRGINIA
W. LLOYD WARD
No. 034[illegible]
PROFESSIONAL ENGINEER
APR 27 2012

W. Lloyd Ward
Branch Manager, Principal Engineer

Sara B. Phillips
Staff Project Manager

ECS Mid-Atlantic, LLC
108 Ingram Road
Suite 1
Willlamsburg, VA 23188
(757) 229-6677

FIELD REPORT

Project No.	07:11512
Report No.	1
Day & Date	Wednesday 04/25/2012
Weather	68°/ Sunny
On-Site Time	4.00
Lab Time	0.50
Travel Time*	0.50
Total	5.00
Re Obs.Time	0.00

Project	**Kingsmill Utility Line Backfill**
Location	**Williamsburg, VA**
Client	**Kingsmill Community Service Association - Susan**

Remarks **Compaction Testing**

Trip Charges* Tolls/Parking* Mileage* **20**

Chargeable Items

Time of Arrival Departure
11:00A 03:00P

* Travel time and mileage will be billed in accordance with the contract.

Summary of Services Performed (field test data, locations, elevations & depths are estimates) & Individuals Contacted.

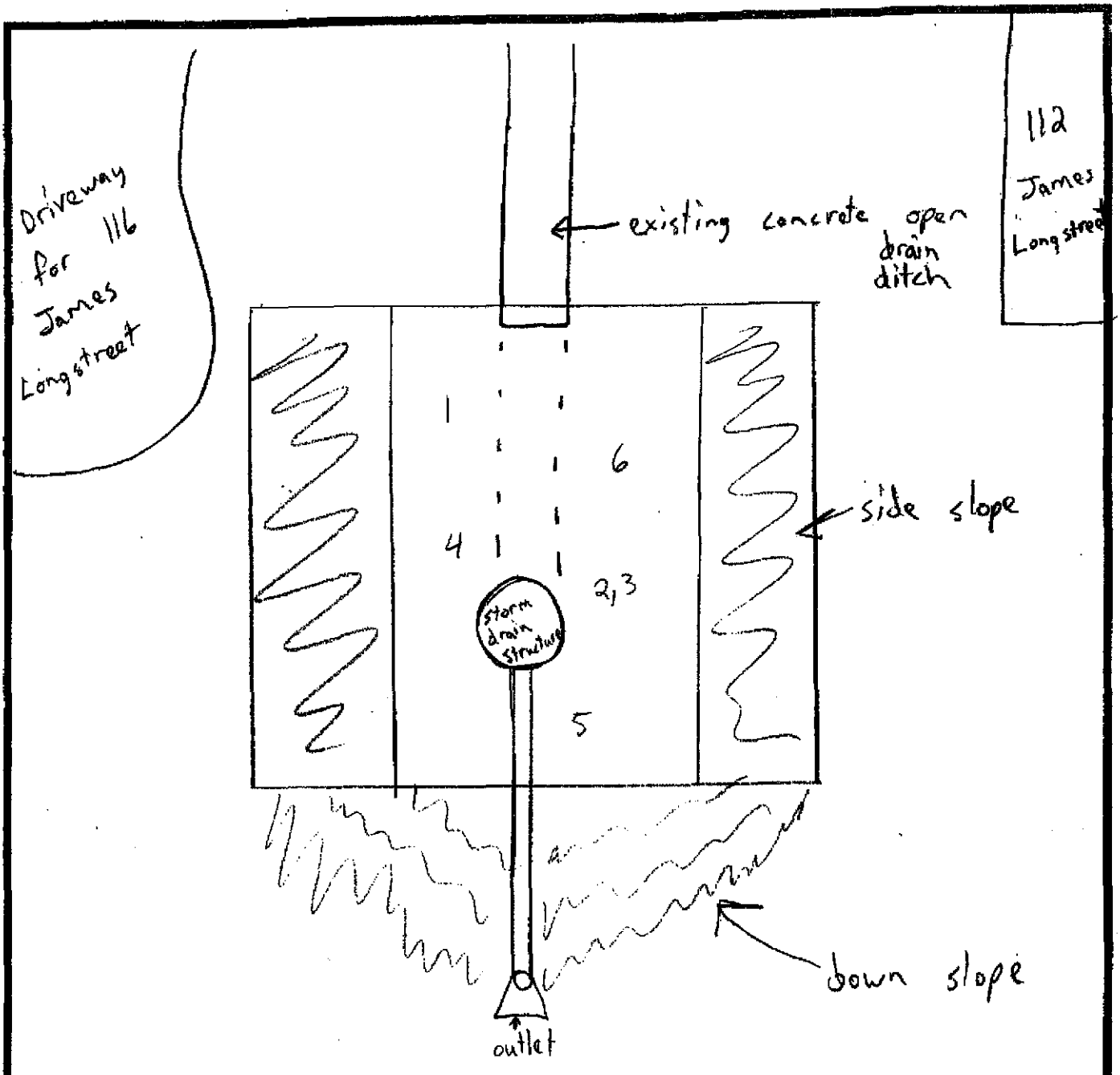
The undersigned arrived on-site, as requested, to observe the placement and compaction of soils for backfill under the future drainage ditch to the storm drain structure between residential addresses 112 and 116 James Longstreet in James City County, Virginia. Please see the attached sketch.

Utilizing the nuclear test method to check the compaction of soils; test results indicated that the compacted material, at the areas and elevations tested, met or exceeded the project requirements of 90-102% of the maximum dry density as obtained in our laboratory using the Standard Proctor Method (ASTM D-698).

Locations and elevations of all tests are based on stakeout provided by others. We cannot be responsible for structures located off of the observed engineered pad, misaligned utilities or stakeout errors causing uncontrolled fill to be placed in structural areas.

The soils observed on this date appeared to be placed in accordance with project drawings and specifications with regard to lift thickness and moisture content. It should be noted that compaction test #2 failed due to very high moisture content. Therefore, the lift was removed and new, dry soil was placed and retested (compaction test #3).

By **Ryan Andrew Reynolds, — Field Technician** 1700



LOCATION: _____

TECHNICIAN: [redacted] RAR

DATE: [redacted] 4-25-12

ECS LLC MID-ATLANTIC

SITE DRAWING

ECS PROJECT NAME: Kingsmill Utility Line

ECS PROJECT NO.: 11512

WORK ORDER ID #: 64244

Field Compaction Summary, ASTM D6938

ECS MID-ATLANTIC, LLC

Project No: 11512 Project Name: Kingsmill Utility Line Backfill Date: 04/25/12

Client: Kingsmill Community Service Association

Contractor: None Listed

Technician: Ryan Andrew Reynolds

Test Method ASTM D6938			
Nuclear Gauge No. 28970			
Make		Density Std	2560
Model		Moisture Std	632
Ser. No.	28970		

Sample: **b-1** Description: **fine to medium silty sand, brown to tan** Proctor Method: **Standard Proctor Method (ASTM D-698)** Uncorrected Max. Density: **112.20** Uncorrected Opt. MC: **13.30**

Test No.	Test Mode	Probe Depth	Station / Location	Lift / Elev	% Oversize	Corrected Maximum Dry Density (pcf)	Corrected Optimum Moisture Content (%)	Test Data				P / F	Comments
								Wet Density (pcf)	Dry Density (pcf)	Moisture Content (%)	Percent Comp. (%)		
1	DT	6	backfill under the future drainage ditch	-2 ft	0.00	112.20	13.30	125.2	109.2	14.6	97.3	P	
2	DT	6	backfill under the future drainage ditch	-1.5 ft	0.00	112.20	13.30	117.1	95.6	22.5	85.2	F	high moisture content and low compaction results
3	DT	6	backfill under the future drainage ditch	-1.5 ft	0.00	112.20	13.30	121.6	105.2	15.6	93.8	P	retest for compaction test #2
4	DT	6	backfill under the future drainage ditch	-1 ft	0.00	112.20	13.30	119.7	104.4	14.7	93.0	P	
5	DT	6	backfill under the future drainage ditch	-1 ft	0.00	112.20	13.30	119.8	103.2	16.1	92.0	P	
6	DT	6	backfill under the future drainage ditch	-0.5 ft	0.00	112.20	13.30	119.6	104.1	14.9	92.8	P	

Test Mode: DT = Direct Transmission BS = Back Scatter

Douglas W. Domenech
Secretary of Natural Resources

David A. Johnson
Director

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street
Richmond, Virginia 23219-2010
(804) 786-1712

January 21, 2011

Xanterra Kingsmill, LLC a DE LLC
6312 South Fiddlers Green Circle, Ste 600 North
Greenwood Village, CO 80111

RE: Transfer of VSMP Permit No. VAR10-10-100750, Kingsmill Resort

Dear Chris Lane:

The Department of Conservation and Recreation (DCR) staff has received and reviewed the request to transfer permit number VAR10-10-100750 to Chris Lane, Xanterra Kingsmill, LLC a DE LLC. Based on staff review, the project has been determined to be eligible for transfer and coverage under the VSMP General Permit for Discharges of Stormwater from Construction Activities (VAR10). The date of transfer of the General Permit is 8/1/2010 and your permit number is **VAR10-10-100750.**

A copy of the complete General Permit (VAR10) can be found on the DCR web page at http://www.dcr.virginia.gov/soil_and_water/documents/vsmpgenpermvar10.pdf. Please print and read the permit thoroughly, as you are responsible for meeting all permit conditions during the permitted land disturbing activity. In addition, the General Permit expires on June 30, 2014.

A copy of this permit transfer coverage letter must be retained with the General Permit and the Stormwater Pollution Prevention Plan at the construction site from the date of commencement of construction activity to the date of final stabilization.

If you have any questions or cannot print a copy of the permit, please contact Holly Sepety at (804) 225-2613.
If you have any questions please contact Holly Sepety at (804) 225-2613.

Sincerely,

J. Douglas Fritz
Acting VSMP Construction Permitting Manager

DRAINAGE CALCULATIONS

FOR

DRAINAGE IMPROVEMENTS AT KINGSMILL'S RIVER COURSE HOLE #8 AND LITTLETOWN QUARTER

February 14, 2012

Prepared by:

AES Consulting Engineers
5248 Olde Towne Road. Suite 1
Williamsburg, VA 23188
(757) 253-0040 Fax: (757) 220-8994
http://www.aesva.com

COMMONWEALTH OF VIRGINIA
NICHOLAS BOTTA
Lic. No. 24730
2/19/12
PROFESSIONAL ENGINEER

AES Project No. 7753-37

INTRODUCTION

This project, known as "Drainage Improvement Plan for Kingsmill – River Course Hole #8 and Littletown Quarter", includes design for the restoration of a severely eroded ravine. This ravine is located on two different parcels; the upstream end is located within the Littletown Quarter subdivision and owned by the Kingsmill Community Services Association and the downstream end is located within the River Golf Course which is owned by Xanterra Kingsmill, LLC. The improvements will take place at the two ends of the ravine with the majority of the work at the upstream end. The project area lies in the James River watershed.

II EXISTING SITE CONDITIONS

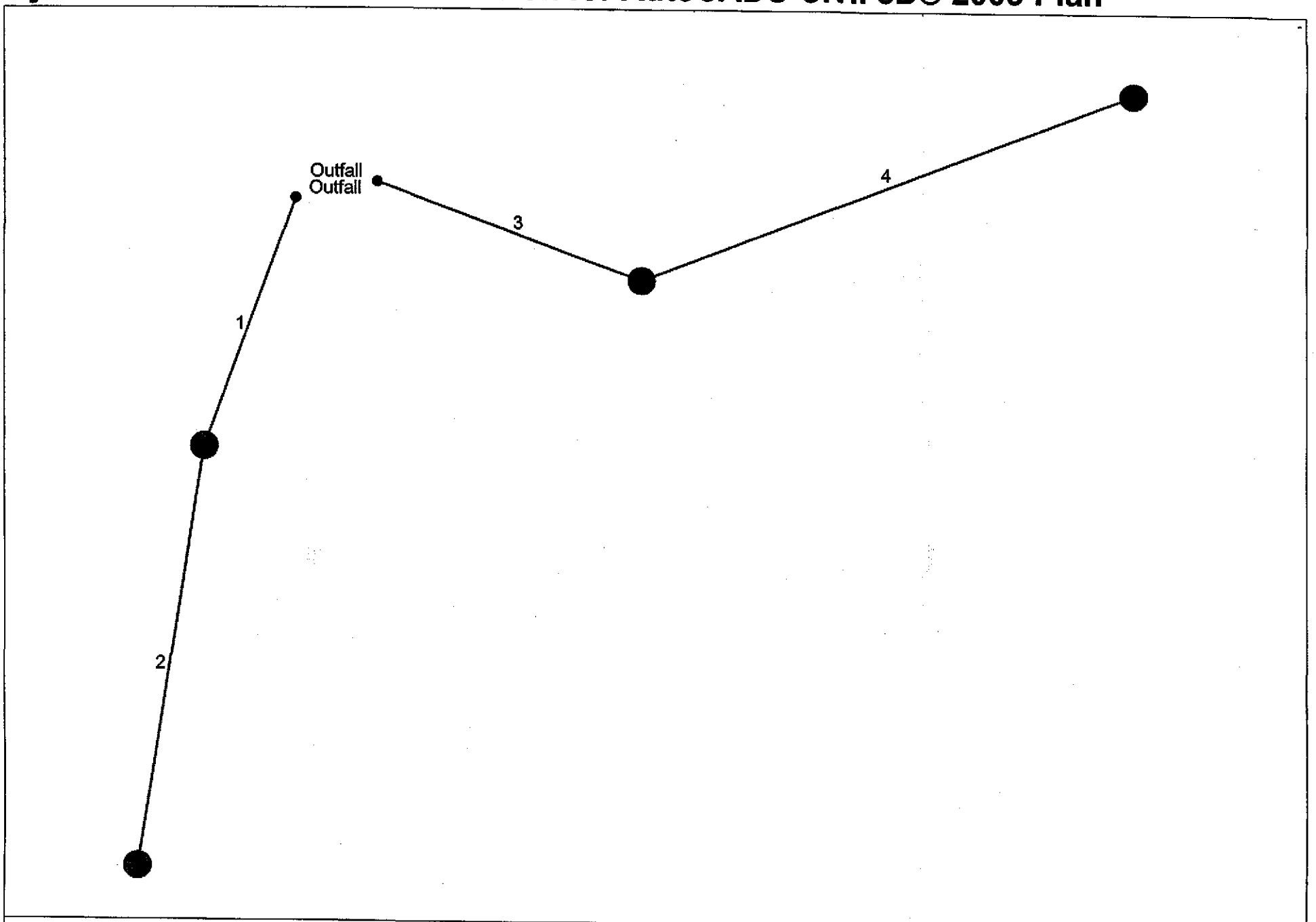
Two storm drainage outfalls in the Littletown Quarter subdivision discharge into the upstream end of the ravine. One outfall (System "A" - 24-inch pipe) is from a storm drainage system that collects runoff from a 3.17 acre drainage area, while the other outfall (System "B" - 15-inch) drains a 2.31 acre area. Upon discharge from these two outfalls, stormwater flows through the ravine southeasterly towards the 8th hole of the River Golf Course. At the downstream end of the ravine, the stormwater collects in a pipe that conveys it under the fairway of the golf course and discharges it into Wareham's Pond.

III PROPOSED SITE CONDITIONS

The two storm drainage outfalls in the Littletown Quarter subdivision will be extended so that they discharge at the bottom of the ravine. A riprap basin will receive the stormwater from these two outfalls to dissipate the erosive energy of the flow. A permanent check dam will be installed at the limit of disturbance, downstream of the riprap basin, to provide an additional measure to control erosion. The side slopes of the three sides of the upstream end of the ravine will be reconstructed and stabilized. The soil that has collected at the downstream end of the ravine will be removed and the side slope will be reconstructed and stabilized.

The total land disturbance area will be approximately 0.15 acres. The disturbance at the upstream end of the ravine will be approximately 0.13 acres, and the disturbance at the downstream end will be approximately 0.02 acres. No additional impervious area is proposed.

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2009 Plan



Project File: 775337 LQ Storm.stm	Number of lines: 4	Date: 02-15-2012

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Dmg area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line shape	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	41.000	110.000	MH	0.00	0.00	0.00	0.0	27.00	21.95	36.00	24	Cir	0.013	0.23	45.00	2A - 1A
2	1	66.000	-11.000	DrGrt	0.00	3.17	0.75	15.0	41.50	7.92	46.73	24	Cir	0.013	1.00	0.00	3A - 2A
3	End	44.000	20.000	MH	0.00	0.00	0.00	0.0	27.00	40.91	45.00	15	Cir	0.013	0.70	54.00	2B - 1B
4	3	82.000	-41.000	Curb	0.00	2.31	0.75	15.0	49.09	1.88	50.63	15	Cir	0.013	1.00	0.00	3B - 2B

Project File: 775337 LQ Storm.stm

Number of lines: 4

Date: 02-15-2012

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(In/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	41.000	0.00	3.17	0.00	0.00	2.38	0.0	15.4	5.1	12.08	106.0	5.68	24	21.95	27.00	36.00	28.34	37.23	0.00	45.00	2A - 1A
2	1	66.000	3.17	3.17	0.75	2.38	2.38	15.0	15.0	5.1	12.21	63.67	10.17	24	7.92	41.50	46.73	42.09	48.27	45.00	0.00	3A - 2A
3	End	44.000	0.00	2.31	0.00	0.00	1.73	0.0	15.5	5.1	8.78	41.30	7.35	15	40.91	27.00	45.00	28.20	46.15	0.00	54.00	2B - 1B
4	3	82.000	2.31	2.31	0.75	1.73	1.73	15.0	15.0	5.1	8.90	8.85	7.74	15	1.88	49.09	50.63	50.12	51.88	54.00	0.00	3B - 2B

Project File: 775337 LQ Storm.stm

Number of lines: 4

Run Date: 02-15-2012

NOTES: Intensity = 55.61 / (Inlet time + 10.00) ^ 0.74; *Return period* = 10 Yrs. ; c = cir e = ellip b = box

AES
CONSULTING ENGINEERS

Project:	River Course #8 - LQ Drainage Improv.
Project No.:	7753-37
Subject:	Riprap Basin
	For Circular Culvert
Date:	February 14, 2012
Calculated By:	NB

Hydraulic Design of Energy Dissipators for Culverts and Channels
Hydraulic Engineering Circular No. 14, Third Edition
U.S. Department of Transportation Federal Highway Administration - July 2006

Outfall Description: **Littletown Quarter**

Pipe Diameter (D) or (W_o) = **2.00** FT.

Flow (Q) = **25.00** CFS

Tailwater Depth (TW) = **0.50** FT.

Determine brink depth (y_o):

$$(K_u)\frac{Q}{D^{2.5}} = (1)\frac{25}{5.66} = 4.42$$

$$\frac{TW}{D} = \frac{0.50}{2.00} = 0.25$$

y_o / D = **0.73** From Figure 3.4

y_o = y_o / D x D = **0.73** x **2.00** = **1.46** FT.

Determine culvert outlet velocity (V_o):

$$\frac{TW}{y_o} = \frac{0.50}{1.46} = 0.342$$

A / D^2 = **0.6143** From Table B.2 where y_o / D = d / D

A = A / D^2 x D^2 = **0.6143** x **4.00** = **2.46** SF

V_o = Q ÷ A = **25.0** ÷ **2.46** = **10.2** FT/S

Determine Froude number (Fr):

$y_e = (A / 2)^{1/2}$ = **1.11** FT.

$Fr = V_o / [(32.2)(y_e)]^{1/2}$ = **1.70**

Try d_{50} / y_e = **0.44** d_{50} = **0.44** x **1.11** = **0.49** FT. or **5.9** IN.

Tailwater Parameter, C_o	Equation 10.2		
TW / y_e = **0.50** ÷ **1.11** = **0.45**			
$TW / y_e < 0.75$	C_o =	1.4	
$0.75 < TW / y_e < 1.0$	C_o =	4.0 (TW/y_e) - 1.6	
	=	4.0 (**0.45**) - 1.6 =	**0.20**
$1.0 < TW / y_e$	C_o =	2.4	

h_s / y_e = 0.86 $(d_{50} / y_e)^{-0.55}$ (Fr) - C_o Equation 10.1

h_s / y_e = 0.86 (**0.44**)$^{-0.55}$ (**1.70**) - **1.40**

h_s / y_e = **0.9005**

h_s = **0.9005** x **1.11** = **1.00** FT.

Check

hs / d_{50} = **2.05** ≥ 2 OK

d_{50} / y_e = **0.44** ≥ 0.1 OK

Riprap Basin Size

Length of Dissipator Pool

L_s = 10 x h_s = **10.0** FT.

or L_s = 3 x W_o = **6.0** FT. Use Larger Value L_s = **10.0** FT.

Total Length

L_B = 15 x h_s = **15.0** FT.

or L_B = 4 x W_o = **8.0** FT. Use Larger Value L_B = **15.0** FT.

Width of Apron

W_B = W_o + 2 $(L_B/3)$ = **12.0** FT.

Length of Apron

L_A = L_B - L_S

= **15.0** - **10.0** = **5.0** FT.

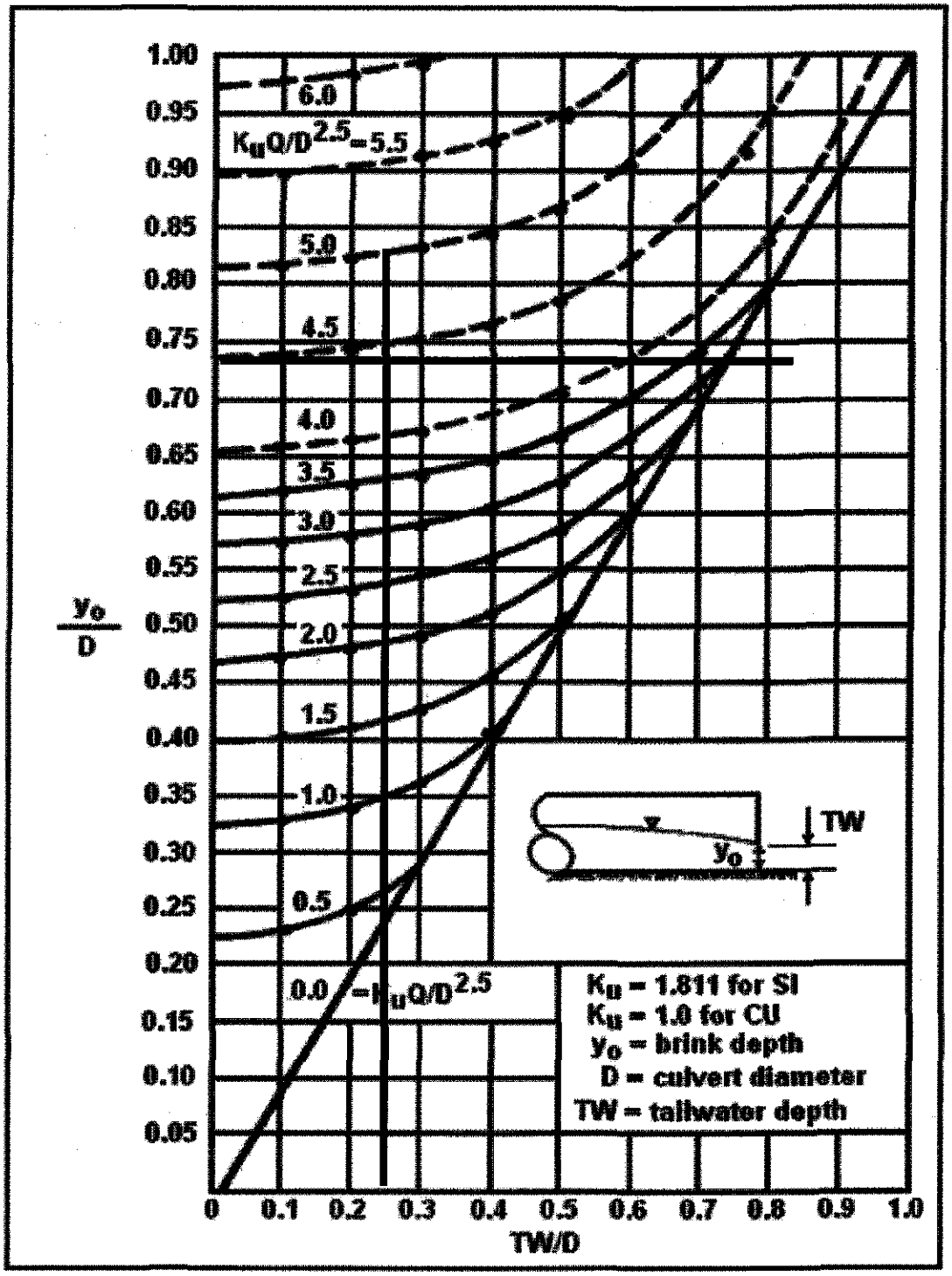


Figure 3.4. Dimensionless Rating Curves for the Outlets of Circular Culverts on Horizontal and Mild Slopes (Simons, 1970)

Table B.2. Uniform Flow in Circular Sections Flowing Partly Full

y/D	A/D^2	R/D	$\frac{(\alpha Qn)}{(D^{8/3} S^{1/2})}$	$\frac{(\alpha Qn)}{(y^{8/3} S^{1/2})}$	y/D	A/D^2	R/D	$\frac{(\alpha Qn)}{(D^{8/3} S^{1/2})}$	$\frac{(\alpha Qn)}{(y^{8/3} S^{1/2})}$
0.01	0.0013	0.0066	0.00007	15.04	0.51	0.4027	0.2531	0.239	1.442
0.02	0.0037	0.0132	0.00031	10.57	0.52	0.4127	0.2562	0.247	0.415
0.03	0.0069	0.0197	0.00074	8.56	0.53	0.4227	0.2592	0.255	1.388
0.04	0.0105	0.0262	0.00138	7.38	0.54	0.4327	0.2621	0.263	1.362
0.05	0.0147	0.0325	0.00222	6.55	0.55	0.4426	0.2649	0.271	1.336
0.06	0.0192	0.0389	0.00328	5.95	0.56	0.4526	0.2676	0.279	1.311
0.07	0.0294	0.0451	0.00455	5.47	0.57	0.1626	0.2703	0.287	1.286
0.08	0.0350	0.0513	0.00604	5.09	0.58	0.4724	0.2728	0.295	1.262
0.09	0.0378	0.0575	0.00775	4.76	0.59	0.4822	0.2753	0.303	1.238
0.10	0.0409	0.0635	0.0097	4.49	0.60	0.4920	0.2776	0.311	1.215
0.11	0.0470	0.0695	0.0118	4.25	0.61	0.5018	0.2799	0.319	1.192
0.12	0.0534	0.0755	0.0142	4.04	0.62	0.5115	0.2821	0.327	1.170
0.13	0.0600	0.0813	0.0167	3.86	0.63	0.5212	0.2842	0.335	1.148
0.14	0.0668	0.0871	0.0195	3.69	0.64	0.5308	0.2862	0.343	1.126
0.15	0.0739	0.0929	0.0225	3.54	0.65	0.5405	0.2988	0.350	1.105
0.16	0.0811	0.0985	0.0257	3.41	0.66	0.5499	0.2900	0.358	1.084
0.17	0.0885	0.1042	0.0291	3.28	0.67	0.5594	0.2917	0.366	1.064
0.18	0.0961	0.1097	0.0327	3.17	0.68	0.5687	0.2933	0.373	1.044
0.19	0.0139	0.1152	0.0365	3.06	0.69	0.5780	0.2948	0.380	1.024
0.20	0.1118	0.1206	0.0406	2.96	0.70	0.5872	0.2962	0.388	1.004
0.21	0.1199	0.1259	0.0448	2.87	0.71	0.5964	0.2975	0.395	0.985
0.22	0.1281	0.1312	0.0492	2.79	0.72	0.6054	0.2987	0.402	0.965
0.23	0.1365	0.1364	0.0537	2.71	0.73	0.6143	0.2998	0.409	0.947
0.24	0.1449	0.1416	0.0585	2.63	0.74	0.6231	0.3008	0.416	0.928
0.25	0.1535	0.1466	0.0634	2.56	0.75	0.6319	0.3042	0.422	0.910
0.26	0.1623	0.1516	0.0686	2.49	0.76	0.6405	0.3043	0.429	0.891
0.27	0.1711	0.1566	0.0739	2.42	0.77	0.6489	0.3043	0.435	0.873
0.28	0.1800	0.1614	0.0793	2.36	0.78	0.6573	0.3041	0.441	0.856
0.29	0.1890	0.1662	0.0849	2.30	0.79	0.6655	0.3039	0.447	0.838
0.30	0.1982	0.1709	0.0907	2.25	0.80	0.6736	0.3042	0.453	0.821
0.31	0.2074	0.1756	0.0966	2.20	0.81	0.6815	0.3043	0.458	0.804
0.32	0.2167	0.1802	0.1027	2.14	0.82	0.6893	0.3043	0.463	0.787
0.33	0.2260	0.1847	0.1089	2.09	0.83	0.6969	0.3041	0.468	0.770
0.34	0.2355	0.1891	0.1153	2.05	0.84	0.7043	0.3038	0.473	0.753
0.35	0.2450	0.1935	0.1218	2.00	0.85	0.7115	0.3033	0.453	0.736
0.36	0.2546	0.1978	0.1284	1.958	0.86	0.7186	0.3026	0.458	0.720
0.37	0.2642	0.2020	0.1351	1.915	0.87	0.7254	0.3018	0.485	0.703
0.38	0.2739	0.2062	0.1420	1.875	0.88	0.7320	0.3007	0.488	0.687
0.39	0.2836	0.2102	0.1490	1.835	0.89	0.7384	0.2995	0.491	0.670
0.40	0.2934	0.2142	0.1561	1.797	0.90	0.7445	0.2980	0.494	0.654
0.41	0.3032	0.2182	0.1633	1.760	0.91	0.7504	0.2963	0.496	0.637
0.42	0.3130	0.2220	0.1705	1.724	0.92	0.7560	0.2944	0.497	0.621
0.43	0.3229	0.2258	0.1779	1.689	0.93	0.7612	0.2921	0.498	0.604
0.44	0.3328	0.2295	0.1854	1.655	0.94	0.7662	0.2895	0.498	0.588
0.45	0.3428	0.2331	0.1929	1.622	0.95	0.7707	0.2865	0.498	0.571
0.46	0.3527	0.2366	0.201	1.590	0.96	0.7749	0.2829	0.496	0.553
0.47	0.3627	0.2401	0.208	1.559	0.97	0.7785	0.2787	0.494	0.535
0.48	0.3727	0.2435	0.216	1.530	0.98	0.7817	0.2735	0.489	0.517
0.49	0.3827	0.2468	0.224	1.500	0.99	0.7841	0.2666	0.483	0.496
0.50	0.3927	0.2500	0.232	1.471	1.00	0.7854	0.2500	0.463	0.463

y = depth of flow, m (ft)
D = diameter of pipe, m (ft)
A = area of flow, m^2 (ft^2)
R= hydraulic radius, m (ft)
Source: USBR (1974)

Q = discharge by Manning's Equation, m^3/s (ft^3/s)
n = Manning's coefficient
S = channel bottom and water surface slope
α = units conversion = 1.49 for SI, 1 for CU

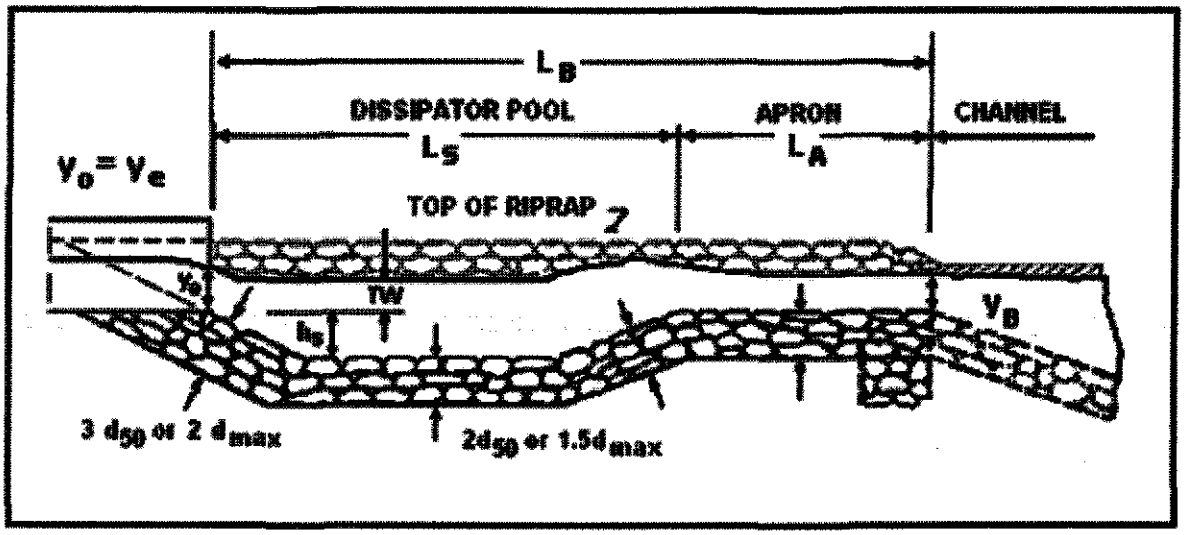


Figure 10.1. Profile of Riprap Basin

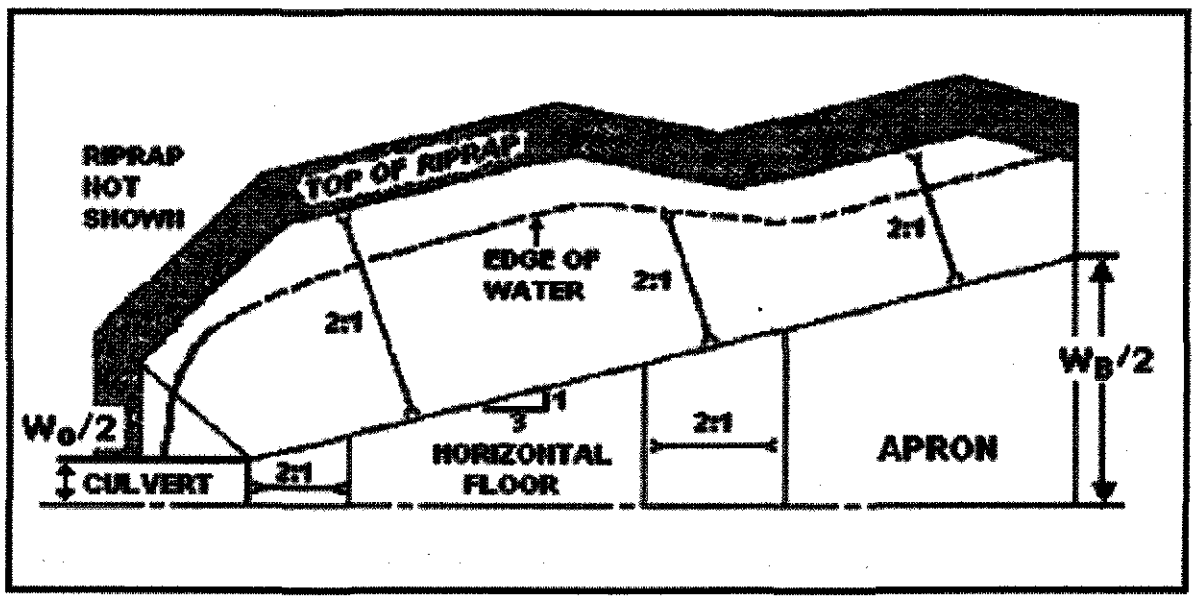
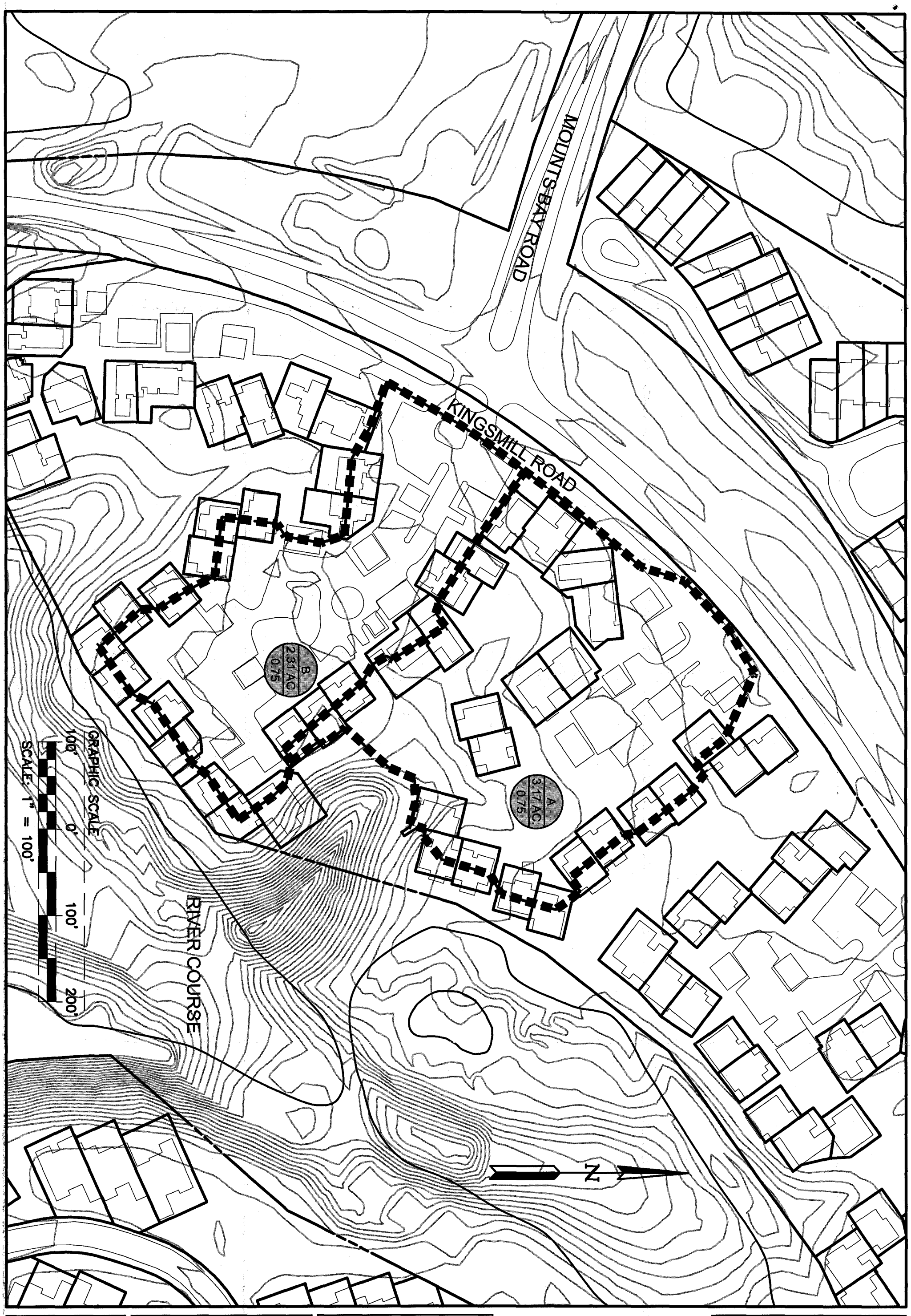


Figure 10.2. Half Plan of Riprap Basin



DRAINAGE IMPROVEMENT PLAN FOR
KINGSMILL
RIVER COURSE HOLE #8
AND
LITTLETOWN QUARTER
ROBERTS DISTRICT JAMES CITY COUNTY, VIRGINIA

Project Contacts: NB
Project Number: 7753-37
Scale: 1"=100'
Date: 2/14/12
Sheet Title: DRAINAGE AREA MAP
Sheet Number 1

AES CONSULTING ENGINEERS
6421 Canon Way
Gloucester, Virginia 23061-5194
Phone: (804) 693-4450
Fax: (804) 693-2520
www.aesva.com
Hampton Roads | Central Virginia | Middle Peninsula

Rev.	Date	Description	Revised By

James City County Environmental Division Stormwater Management/BMP Record Drawing and Construction Certification Review Tracking Form

Project Name: DRAINAGE Improvement - River Counties Hole #18/Littletown Quarters
County Plan No.: SP-0016-2012
Stormwater Management Facility: _____
BMP Phase #: ☐ I ☐ II ☐ III
☒ Information Package Received. Date/By: 4/30/2013 - Nick Bate
☒ Completeness Check:
- ☒ Record Drawing — Date/By: 4/23/13 Nick Bate
- ☒ Construction Certification — Date/By: 4/23/13 W. Lloyd Ward
- ☒ RD/CC Standard Forms (Required for all BMPs after Feb 1st 2001Only)
- ☒ Insp/Maint Agreement # / Date: 120025767 12/13/12
- ☐ BMP Maintenance Plan Location: _____
- ☐ Other: _____

☒ Standard E&SC Note on Approved Plan Requiring RD/CC or County comment in plan review
☐ Yes ☐ No Location: Pg 6 #21
☒ Assign **County BMP ID Code #:** Code: JR 008
☐ Preliminary Input/Log into Division's "As-Built Tracking Log"
☐ Add Location to GIS Map. Obtain basic site information (GPIN, Owner, Address, etc.)
☒ Preliminary Log into Access Database (BMP ID #, Plan No., GPIN, Project Name, etc.)
☒ Active Project File Review (correspondence, H&H, design computations, etc.).
☒ Initial As-Built File setup (File label, folder, copy plan/details/design information, etc.).
☒ Inspector Check of RD/CC (forward to Inspector using transmittal for cursory review).
☒ Pre-Inspection Drawing Review of Approved Plan (Quick look prior to Field Inspection).
☒ Final Inspection (FI) Performed Date: 7/1/2013
☒ Record Drawing (RD) Review Date: 7/1/2013
☒ Construction Certification (CC) Review Date: 7/1/2013
☒ Actions:
- ☐ No comments.
- ☒ Comments. Letter Forwarded. Date: 8/22/13
- ☐ Record Drawing (RD)
- ☐ Construction Certification (CC)
- ☒ Construction-Related (CR)
- ☐ Site Issues (SI)
- ☐ Other : _____

☐ Second Submission: _____
☒ Reinspection (if necessary): 9/12/2013
☒ Acceptable for SWM Purposes (RD/CC/CR/Other). Ok to proceed with bond release.
☒ Complete "Surety Request Form".
☒ Check/Clean active file of any remaining material and finish "As-Built" file.
☐ Add to County BMP Inventory/Inspection schedule (Phase I, II or III).
☐ Copy Final Inspection Report into County BMP Inspection Program file.
☐ Obtain Digital Photographs of BMP and save into County BMP Inventory.
☐ Request mylar/reproducible from As-Built plan preparer.
☒ Complete "As-built Tracking Log".
☐ Last check of BMP Access Database (County BMP Inventory).
☐ Add BMP to JCC Hydrology & Hydraulic database (optional).
☐ Add BMP to Municipal BMP list (if a County-owned facility)
☐ Add BMP to PRIDE BMP ratings database.

Final Sign-Off

Inspector: _____ Date: 8/26/13
Chief Engineer: _____ Date: 9/25/13

*** See separate checklist, if needed.