

CERTIFICATE OF AUTHENTICITY

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

BMP NUMBER: CC-028

DATE VERIFIED: May 4, 2012

QUALITY ASSURANCE TECHNICIAN:

Leah Hardenbergh

beach Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA



Stormwater Division

MEMORANDUM

DATE:	March 10, 2010	
TO:	Michael J. Gillis, Virginia Correctional Enterprises Document Management Services	
FROM:	Jo Anna Ripley, Stormwater	
PO:	270712	
RE:	Files Approved for Scanning	

General File ID or BMP ID: CC028

PIN: 4820100002

Subdivision, Tract, Business or Owner

Name (if known):

Property Description:

Site Address:

(For internal use only)

Agreements: (in file as of scan date)

Ν

Box

10

Book or Doc#:

Williamsburg Landing
Senior Care/Retirment Facility
5700 Williamsburg Landing Drive
Drawer: 6

Page:

Comments

CC028

Contents for Stormwater Management Facilities As-built Files

Each file is to contain:

- ① As-built plan
- 2. Completed construction certification
- Construction Plan
- **Design Calculations**
- € Watershed Map
- 6. Maintenance Agreement
- 7. Correspondence with owners
- **(B)** Inspection Records
- 9. Enforcement Actions



Stormwater Division

MEMORANDUM

Date: May 4, 2012

To: Michael J. Gillis, Virginia Correctional Enterprises Document Management Services

From: Leah Hardenbergh

PO: 110426

Re: Files Approved for Scanning

General File ID or BMP ID: CC-028

PIN:

4820100002

PT RICH NECK

Owner Name (if known): WILLIAMSBURG LANDING

Legal Property Description:

Site Address:

5700 WILLIAMSBURG LANDING DR

(For internal use only):

Box # 1

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

This is a supplemental file for CC028, so it must be merged into the existing file.



CERTIFICATE OF AUTHENTICITY

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BMP NUMBER: CC028

DATE VERIFIED: October 11, 2018

QUALITY ASSURANCE TECHNICIAN:

Charles E. Lovett II

Charles E. Sovett II

LOCATION: WILLIAMSBURG, VIRGINIA

Maintenance Agreement

2.

Deeds/Easements/Ag reements/Property Records

Construction Certificate



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

Project Name: Williamsburg Landing
County Plan No.: 5P-135-04
Stormwater Management Facility Dry a wat pond - modification mircopool
BMP Phase #: DI DII VIII alistal
Information Package Received. Date/By: 1/15/06
Completeness Check:
Constructing Certification Date/By:
Ref. Construction Certain Control Date Dy Construction Control
A Inspondiate Agreement # / Date:
BMP Maintenance Plan Location: C-I SP- 15-04
• Other:
X Standard E&SC Note on Approved Plan Requiring RD/CC or County comment in plan review
XYes No Location: <u>9, C-6 Note 20</u>
Assign County BMP ID Code #: Code:
Preliminary Input/Log into Division's "As-Built Tracking Log"
Add Location to GIS Map. Obtain basic site information (GPIN, Owner, Address, etc.)
X relative Project File Peyjew (correspondence, H8.H, design computations, etc.)
Initial As-Ruilt File setun (Elle label folder, conviolandetails/design information, etc.)
Inspector Check of RD/CC (forward to Inspector using transmittal for cursory review).
Pre-Inspection Drawing Review of Approved Plan (Ouick look prior to Field Inspection).
★ Final Inspection (FI) Performed Date: 427/2007
Record Drawing (RD) Review Date: 4/27/2007
Construction Certification (CC) Review Date:
X Actions:
No comments.
Comments, Letter Forwarded, Date: Record Drawing (D)
Construction Certification (CC)
□ Site Issues (SI)
Other :
Second Submission:
Reinspection (if necessary):
Acceptable for SWM Purposes (RD/CC/CR/Other). Ok to proceed with bond release.
Complete "Surety Request Form".
Checky clean active file of any remaining material and missin. As-built, file,
Add to could be investigation schedule (rings et al., if of int).
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).
a 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
Plan Reviewer: Date: 5/1/2001

CC028_WILLIAMSBURG_LANDING - 004

*** See separate checklist, if needed.



James City County, Virginia Environmental Division

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	SEP 1 5 2006	
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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: Structure/BMP Project Location BMP Location: County Plan No	Will Name: 570 n: 570 570 570	tansburg inded Dr Owillran Owillran - 135	Landing Par y-Detention isburg Landi usburg Landi 	rking hot Facility ng Drive ng Orive	Addition
Brief Description	Residential Commercial Institutional Public Aother <u>Rettine</u> How on of Stormwater M	Business Office Industrial Roadway Cureut Ianagement/BMI	Tax Map/Parcel No.: BMP ID Code (if know Zoning District:: Land Use: Site Area (sf or acres): PFacility: The e	482010 m): <u>R5</u> <u>Retireur</u> <u>T1.63</u> xtsttug <u>B</u> D proute	2002 FOZ8 ent Howc MP C
Nearest Visible Nearest Vertical JCC Station Datum Contro Contro	Landmark to SWN Ground Control (Geodetic Ground Number or Name or Reference Elev 1 Description: 1 Location from Su	I/BMP Facility:_ if known): Control □ USC ation: £ the feature f	GS Temporary DI RTM IN S CG3.57 TSTING PI DI GOOLTED C	DArbitrary Parking Lot 20jacent C	Hother Adjacent BM

Section 2 - Stormwater Management / BMP Facility Construction Information:

PreConstruction Meeting Held for Construction of SWM/BMP Facility:	🗖 Yes	🗖 No	🗗 Unknown
Approx. Construction Start Date for SWM/BMP Facility: 304			
Facility Monitored by County Representative during Construction:	🛛 Yes	🗆 No	Unknown
Name of Site Work Contractor Who Constructed Facility: Toano Co	ntra	crous	Inc
Name of Professional Firm Who Routinely Monitored Construction: Unke	sur		· · · · · · · · · · · · · · · · · · ·
Date of Completion for SWM/BMP Facility: 8/06			
Date of Record Drawing/Construction Certification Submittal: 8(3)/96	•		

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

Section 3 - Owner / Designer / Contractor Information:

Owner/Developer:

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

 Name:
 Willramsburg
 Landing, Inc.

 Mailing Address:
 5700
 willramsburg
 Landing Drive

 willramsburg
 Va.
 23185

 Business Phone:
 233-0303
 Fax:

 Contact Person:
 Title:

Design Professional:

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

Firm Name:	and Ma-	-k Des	ran G	mour	>		
Mailing Address:	4029	Inonlo	und R	2,5	orte	100	
	willra	us burg	1, Va. 2	-3188	3		
Business Phone:	(757)	253-2	વંતર				
Fax:	(75T)	229-0	७५९				
Responsible Plan	Preparer: 🤸	tephen	Rom	0			
Title: La	nd Sur	veyon					
Plan Name: Pla	un of De	evelopm	ent wi	llraw	sburg	Land	Irug
Firm's Project No.	Pankon	a Lot	+1664	ton	2000?	312-a	<u>80.02</u>
Plan Date: Ma	14 31,20	യ്ട					
Sheet No.'s Applie	cable to SWM	BMP Facility	: C3/	1	1	1	

BMP Contractor:

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

Name: Toav	10 Contractors, Inc.
Mailing Address:	8589 Richmond Rd.
	Toano, Va. 23168
Business Phone: _	(757) 566-0097
Fax:	(757) 566-8874
Contact Person:	Randy Taylor
Site Foreman/Sup	ervisor: Randy Taylon
Specialty Subcont	ractors & Purpose (for BMP Construction Only):
· · · · · · · · · · · · · · · · · · ·	

Section 4 - Professional Certifications:

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

Record Drawing and Construction Certifications for Stormwater Management / BMP Facilities

Record Drawing Certification

Construction Certification

Firm Name: Law Tech Resources In
Mailing Address: 5810-F Hoorstown Rd
willraugburg, Va. 23188
Business Phone: (157) 565-1677
Fax: (151) 565-0782
Name: Matthew Connolly Title: Land Surveyor Signature: Mathematical Date: 9-15-2006

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

Firm Name:	
Mailing Address:	
Business Phone:	
Fax:	· · · · · · · · · · · · · · · · · · ·
Name:	
Title:	
Signature:	
Date:	

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



(Seal)

Virginia Registered Professional Engineer or Certified Land Surveyor (Seal)

Virginia Registered Professional Engineer

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

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

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

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

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

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

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

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

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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, <u>unless</u> a distinct hazard to the public's health, safety and welfare is determined by the Environmental Division due to the size or presence of the structure or due to evidence of improper construction.

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

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

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

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

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STORMWATER MANAGEMENT / BMP FACILITIES RECORD DRAWING CHECKLIST

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

- I. <u>Methods and Presentation:</u> (Required for all Stormwater Management / BMP facilities.)
- 1. All constructed facilities meet approved design plans, unless otherwise shown. Record information or deviations from approved design plan shown in clearly annotated format and/or boxed beside design values.
- 2. Elevations to the nearest 0.1' unless higher accuracy is needed to show positive drainage.
- 3. All plan sheets labeled with "RECORD DRAWING" in large text in lower right hand corner (Approved County Plan Number and BMP ID Code can be included if known).
 - 4.) All plan sheet revision blocks modified to indicate date and record drawing status.
 - 5. All plan sheets have certification statements and certifying professional's signature and seal.
- **II.** <u>Minimum Standards:</u> (Required for all Stormwater Management / BMP facilities, as applicable.)
- 1. All requirements of Section I (Methods and Presentation) apply to this section.
- 2. Plan Views: Show general location, arrangement and dimensions. Location and alignment shall generally match approved design plans.
- 2. 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.
- **VIA** 4. Top widths, berm widths and embankment side slopes.
- 5. Show length, width and depth of facility or grading, contours or spot elevations as required to verify permanent pool and design storage volumes were met or were reasonably close to the approved design. Evaluation of as-built grading, contours, spot elevations, or cross-sections, may be necessary by the professional to ensure approved design configurations, depths and volumes were closely maintained. If grading or elevations are significantly different from the approved plan, the Environmental Division shall be contacted immediately to determine whether the variation is acceptable or whether further evidence will be required. Facilities which do not closely resemble approved plan grades, elevations or configurations may require regrading by the Contractor; check volumetric computations; and/or a check hydraulic routing to ensure approved design water surface elevations, discharges or freeboard were closely maintained.
- 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.
- 7. Profile or elevations along the entire centerline of the emergency spillway. Emergency spillway may be steeper, but no flatter or narrower than design.
- 8. Elevation of the principal spillway crest or outlet crest of the structure.

	**	. 9.	Primary control structure (riser) diameter or dimensions, height, type of material and base size. Indicate provisions for access that are present such as steps, ladders, etc.
	XX	10.	Dimensions, locations and elevations of outlet orifices, weirs, slots and drains.
	4	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.
	NA	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.
	<u>AM</u>	13.	Top of impervious core embankment, core trench limits and elevation of cut-off trench bottom. May need to obtain this information during construction.
	XX	14.	Elevation of the principal spillway barrel (outlet pipe) inlet and outlet)invert.
	44	15.	Outlet barrel diameter, length, slope, type and thickness class of material and type of flared end sections, headwall or endwall.
	NA	16.	Outfall protection dimension, type and depth of rock and if underlain filter fabric is present.
_	<u>AU</u>	17.	BMP interior and periphery landscaping zones conform with arrangements and requirements of the approved design plan.
\langle	XX	18.	Maintenance plan taken from approved design plan transposed onto record drawing set.
	NA	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.
	XX	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: <u>XX</u> Acceptable <u>N/A</u> Not Applicable <u>Inc</u> Incomplete)

VIII. <u>Group F - Extended Dry Detention</u>

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

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

F16. No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed and no adverse affects to the function of the facility are anticipated.

4. Record Drawing (asbuilt plan)





STORM WATER GENERAL PERMIT NOTES

THE CONTRACTOR SHALL ENSURE COMPLIANCE WITH THE REQUIREMENTS OF VR 680-14-19- VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM (VPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION SITES, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: IMPLEMENTION, DOCUMENTATION, AND INSPECTIONS NECESSARY FOR THE COMPLIANCE WITH STORM WATER GENERAL PERMIT

1. IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN AS DEVELOPED FOR THE SITE AND IN ACCORDANCE WITH THE GENERAL PERMIT REQUIREMENTS WITH RECORD TO EROSION AND SEDIMENT CONTROL, POST- CONSTRUCTION STORM WATER MANAGEMENT, AND OTHER CONTROLS RECORDING SOLID MATERIALS, SEDIMENTS AND DUST, AND THE DEMONSTRATED COMPLIANCE WITH APPLICABLE STATE AND/OR LOCAL WASTE DISPOSAL, SANITARY SEWER OR SEPTIC SYSTEM REGULATIONS. 2. RETENTION OF THE STORM WATER POLLUTION PREVENTION PLAN AT THE CONSTRUCTION SITE. THE PLAN AND OTHER RELATED DOCUMENTS SHALL BE MADE AVAILABLE UPON REQUEST TO AUTHORIZED LOCAL, STATE, OR FEDERAL REPRESENTATIVES. 3. AMENDMENT OF THE STORM WATER POLLUTION PREVENTION PLAN WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS T THE SURFACE WATERS OF THE STATE, OR IF THE STORM WATER POLLUTION PREVENTION PLAN PROVES TO BE INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM THE CONSTRUCTION ACTIVITY. 4. DOCUMENTATION OF THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, AND WHEN STABILIZATION MEASURES ARE IMPLEMENTED. 5. INSPECTIONS OF DISTURBED AREAS OF THE CONSTRUCTION SITE AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION THAT HAVE NOT BEEN FINALLY STABILIZED, STRUCTURAL CONTROL MEASURES, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE CONDUCTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT THAT PRODUCES SURFACE RUNOFF AS REQUIRED BY THE GENERAL PERMIT REGULATIONS REPORTS SUMMARIZING THE INSPECTIONS SHALL BE MADE IN ACCORDANCE TO THE REGULATIONS S AND RETAINED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN.

6. ALL CONTRACTORS AND SUBCONTRACTORS SHALL SIGN A COPY OF THE CERTIFICATION STATEMENT AS DESCRIBED IN THE GENERAL PERMIT BEFORE CONDUCTING ANY PROFESSIONAL SERVICES AT THE SITE IDENTIFIED IN THE POLLUTION PLAN. ALL CERTIFICATIONS SHALL BE INCLUDED IN THE STORM WATER POLLUTION PREVENTION PLAN.

7. ALL DOCUMENTS, RECORDS, REPORTS, AND OTHER INFORMATION RELEVANT TO THE GENERAL PERMIT REGULATIONS SHALL BE GIVEN TO THE OWNER FOLLOWING FINAL STABILIZATION OF THE SITE. 8. WHERE THE SITE HAS BEEN FINALLY STABILIZED AND ALL STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES THAT ARE AUTHORIZED BY THE GENERAL PERMIT ARE ELIMINATED, A NOTICE OF TERMINATION SHALL BE PREPARED FOR THE OWNER TO SIGN AND SUBMIT TO THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, WATER DIVISION.

9. THE STRUCTURAL STABILITY OF THE PERMITTED FACILITIES SHALL BE ENSURED.

PROHIBITION AND REPORTING OF RELEASES OF SUBSTANCES OTHER THAN STORM WATER

10. EXECUTION OF REPORTING REQUIREMENTS ON THE EVENT OF NONCOMPLIANCE OF THE GENERAL PERMIT OR IF ANY UNPERMITTED, UNUSUAL OR EXTRAORDINARY DISCHARGE ENTERS OR COULD BE EXPECTED TO ENTER SURFACE WATERS OF THE STATE. 11. PROHIBITION OF NON-STORMWATER DISCHARGES EXCEPT AS PROVIDED FOR IN THE GENERALPERMIT. APPROPRIATE POLLUTION PREVENTION MEASURES FOR NON - STORM WATER COMPONENTS OF DISCHARGE SHALL BE IMPLEMENTED 12. EXECUTION OF REPORTING REQUIREMENTS OF 40 CFR PART 117 (1992) AND 40 CFR PART 302 (1992). IN ADDITION, THE DISCHARGE OF HAZARDOUS SUBSTANCES OR OIL IN THE STORM WATER DISCHARGE FROM THE CONSTRUCTION SITE SHALL BE PREVENTED OR MINIMIZED IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN.

13. PROHIBITION OF DISCHARGE OF HAZARDOUS SUBSTANCE, OIL, OR POLLUTANTS RESULTING FROM ON - SITE SPRILLS OR RELEASE.

MANAGEMENT MEASURES AND RESPONSE TO UNINTENTIONAL RELEASES 14. ALL WASTE COLLECTION, CONTROL, TREATMENT OF POLLUTANT ACTIVITIES AND DISPOSAL FACILITIES SHALL BE OPERATED IN A MANNER CONSISTENT WITH THE GENERAL PERMIT REGULATIONS. 15. ALL FEASIBLE STEPS TO MINIMIZE ANY ADVERSE IMPACTS TO STATE WATERS RESULTING FROM NON-COMPLIANCE WITH CONDITIONS SPECIFIED IN THE GENERAL PERMIT SHALL BE TAKEN. 16. ALL REASONABLE STEPS TO MINIMIZE, CORRECT OR PREVENT ANY DISCHARGE IN VIOLATION OF THE GENERAL PERMIT WHICH HAS A REASONABLE LIKELYHOOD OF ADVERSELY AFFECTING HUMAN HEALTH OR THE ENVIRONMENT SHALL BE TAKEN.

		EX. CMP ANTI- VORTEX DEVICE
, ,	RIP-RA	P CHECK DAM (TYP.) 2' INV.= ±
	TOP ELEV.=	= ±28.0
EXIST. FES INV.= 33.76 ELEV 63.57	BOTTO	M ELEV.= ±25.75
		6'X6'X2' MICRO POOL
FES INV.= 39.85		RENOVATE

D	PARCEL ID 4820100012				
ال					
D		CHORD	ARC	RADIUS	TANGENT
	RECORD DRAWING	164.38	180.90	120.50	112.39



- 8" PVC

2" INV.= ±26.9

NUMBER DELTA CHORD BEARING

86°00'46" S 45°19'36" E

TOP = 35.5

EX. 48" CMP RISER

EX. 30" RCP

EX. 18" PERFORATED PVC

18"X8' ECCENTRIC REDUCER

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(VSMP) AUTHORITY.

- SHALL APPLY TO THE PROJECT.
- APPLY TO THE PROJECT.

- **EXCAVATIONS.**

JAMES CITY COUNTY ENGINEERING AND RESOURCE PROTECTION DIVISION STANDARD COUNTY STORMWATER POLLUTION PREVENTION PLAN NOTES **REVISED JULY 1, 2014**

THE FOLLOWING STANDARD COUNTY NOTES SHALL BECOME PART OF ANY APPROVED STORMWATER POLLUTION PREVENTION PLAN (SWI FOR PLAN OF DEVELOPMENT PROJECTS IN JAMES CITY COUNTY, VIRGINIA. COMPONENTS OF A SWPPP MAY INCLUDE AS APPLICABLE. A SI EROSION AND SEDIMENT CONTROL (E&SC) PLAN, A SITE STORMWATER MANAGEMENT (SWM) PLAN, AND A SITE POLLUTION PREVENTION P (PPP). THE COUNTY'S DIVISION OF ENGINEERING AND RESOURCE PROTECTION IS DESIGNATED BY CHAPTER 8 OF THE COUNTY CODE AS 1 LOCAL VIRGINIA EROSION AND SEDIMENT CONTROL PROGRAM (VESCP) AUTHORITY AND VIRGINIA STORMWATER MANAGEMENT PROGRAM

1. ALL THE PROVISIONS OF VIRGINIA EROSION AND SEDIMENT CONTROL (E&SC) LAW AND REGULATIONS, THE VIRGINIA STORMWATER MANAGEMENT ACT AND REGULATIONS (VSMP), THE VIRGINIA BMP CLEARINGHOUSE WEBSITE, STATE EROSION AND SEDIMENT CONTROL A STORMWATER MANAGEMENT HANDBOOKS, AND ANY ASSOCIATED TECHNICAL BULLETINS AND GUIDANCE DOCUMENTS AS PUBLISHED BY STATE WATER CONTROL BOARD, THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ), AND THE LOCAL VESCP AND VSMP AUT

2. MINIMUM STANDARDS NO. 1 THROUGH NO. 19 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS 9VAC25-840 ET SEQ. SHA

3. THE OWNER, APPLICANT, OPERATOR, OR PERMITTEE SHALL BE RESPONSIBLE TO REGISTER FOR CONSTRUCTION GENERAL PERMIT (CGP) COVERAGE, AS APPLICABLE, IN ACCORDANCE WITH THE GENERAL VPDES PERMIT FOR DISCHARGE OF STORMWATER FROM CONSTRUCTION ACTIVITIES (VAR10) CHAPTER 880; THE VIRGINIA STORMWATER MANAGEMENT PROGRAM REGULATION\$ CHAPTER 870; AND IN ACCORDAN WITH CURRENT REQUIREMENTS OF THE VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP), THE STATE WATER CONTROL BOARD, T VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, CHAPTER 8 OF THE COUNTY CODE AND THE LOCAL VESCP/VSMP AUTHORITY.

4. THE OWNER, APPLICANT, OPERATOR OR PERMITTEE 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 LAND DISTURBING ACTIVITY. THIS WILL BE NECESSARY PRIOR TO ISSUANCE OF A LOCAL LAND DISTURBING AND/OR STORMWATER CONSTRUCTION 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

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). T CONTRACTOR SHALL MAINTAIN, INSPECT, AND REPAIR ALL EROSION AND SEDIMENT CONTROL MEASURES AS NEEDED THROUGHOUT THE OF THE PROJECT TO ENSURE CONTINUED ACCEPTABLE PERFORMANCE.

7. A PRECONSTRUCTION CONFERENCE (MEETING) SHALL BE HELD ON SITE AND INCLUDE REPRESENTATIVES FROM THE LOCAL VESCP/VSMF AUTHORITY, THE OWNER/APPLICANT/OPERATOR/PERMITTEE, THE RESPONSIBLE LAND-DISTURBER (RLD), AND THE CONTRACTOR, ENGINE AND OTHER RESPONSIBLE AGENCIES, AS APPLICABLE, PRIOR TO AUTHORIZATION AND ISSUANCE OF A LOCAL LAND DISTURBING OR

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PROFILE

4" MIN ON 6" MIN C

JAMES CITY COUNTY ENGINEERING AND RESOURCE PROTECTION DIVISION STANDARD COUNTY STORMWATER POLLUTION PREVENTION PLAN NOTES REVISED JULY 1, 2014

THE FOLLOWING STANDARD COUNTY NOTES SHALL BECOME PART OF ANY APPROVED STORMWATER POLLUTION PREVENTION PLAN (SW FOR PLAN OF DEVELOPMENT PROJECTS IN JAMES CITY COUNTY, VIRGINIA. COMPONENTS OF A SWPPP MAY INCLUDE AS APPLICABLE, A S EROSION AND SEDIMENT CONTROL (E&SC) PLAN, A SITE STORMWATER MANAGEMENT (SWM) PLAN, AND A SITE POLLUTION PREVENTION ((PPP). THE COUNTY'S DIVISION OF ENGINEERING AND RESOURCE PROTECTION IS DESIGNATED BY CHAPTER 8 OF THE COUNTY CODE AS LOCAL VIRGINIA EROSION AND SEDIMENT CONTROL PROGRAM (VESCP) AUTHORITY AND VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) AUTHORITY.

- SHALL APPLY TO THE PROJECT.
- APPLY TO THE PROJECT.

- EXCAVATIONS.

1. ALL THE PROVISIONS OF VIRGINIA EROSION AND SEDIMENT CONTROL (E&SC) LAW AND REGULATIONS, THE VIRGINIA STORMWATER MANAGEMENT ACT AND REGULATIONS (VSMP), THE VIRGINIA BMP CLEARINGHOUSE WEBSITE, STATE EROSION AND SEDIMENT CONTROL. STORMWATER MANAGEMENT HANDBOOKS, AND ANY ASSOCIATED TECHNICAL BULLETINS AND GUIDANCE DOCUMENTS AS PUBLISHED BY STATE WATER CONTROL BOARD, THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ), AND THE LOCAL VESCP AND VSMP AUT

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Construction Drawings

CC028_WILLIAMSBURG_LANDING - 014

THE OWNER OR ITS DESIGNATED REPRESENTATIVE WILL INSPECT THE SWM/BMP STRUCTURES AFTER EACH SIGNIFICANT RAINFALL EVENT OR THE FOLLOWING WORKING DAY IF A WEEKEND OR HOLIDAY OCCURS. A SIGNIFICANT RAINFALL FOR THIS STRUCTURE IS DEFINED AS ONE (1) INCH OR MORE OF GAUGED RAINFALL WITHIN A 24-HOUR PERIOD. ONCE PER YEAR, A REPRESENTATIVE OF THE COUNTY MAY JOINTLY INSPECT THE STRUCTURE.

THIS BASIN SERVES A DRAINAGE AREA OF 7.51 ACRES ASSOCIATED WITH "THE LANDING" AT WILLIAMSBURG LANDING DEVELOPMENT. THIS FACILITY IS A 4-POINT, EXTENDED DRY-DETENTION FACILITY. TYPICAL DRAWDOWN FOR THIS BASIN RANGES FROM 24 TO 72 HOURS AFTER A STORM EVENT. PRINCIPAL STRUCTURES ASSOCIATED WITH THIS BMP CONSIST OF ONE 3-INCH LOW FLOW ORIFICE, A 48-INCH VERTICAL CMP RISER AND A 30-INCH RCP OUTLET BARREL. THERE IS NO EMERGENCY SPILLWAY ASSOCIATED WITH THIS BASIN. DURING THE 100-YEAR STORM EVENT, THE MAXIMUM WATER LEVEL SHOULD RISE TO ABOUT 0.5 ABOVE THE TOP OF THE RISER AND WITHIN 15 FEET OF THE TOP OF THE DAM. IF FUNCTIONING PROPERLY, NORMAL STORM EVENTS SHOULD REACH THE ELEVATION AT THE TOP OF THE RISER.

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

- INSPECT FOR SEDIMENT BUILDUP BY VISUAL OBSERVATION AND A PHYSICAL DETERMINATION OF SEDIMENT DEPTH WITHIN THE POND STORAGE AREAS. IF THE DEPTH OF THE SEDIMENT REACHES THE DEPTH OF 2'-6" ABOVE THE BOTTOM OF THE POND, REMOVAL IS REQUIRED. AT THE SAME TIME, OR AT LEAST ONCE PER YEAR, CLEAN THE MICRO POOL, THE RISER BOTTOMS AND OUTLET PIPES OF ACCUMULATED SEDIMENTS. DISPOSE OF SEDIMENTS REMOVED FROM THE FACILITY AT AN ACCEPTABLE DISPOSAL AREA.

- PERFORM MAINTENANCE MOWING OF POND GRASSES AT LEAST TWICE EACH YEAR. GRASSES SUCH AS TALL FESCUE SHOULD BE MOWED IN EARLY SUMMER AFTER EMERGENCE OF THE HEADS OF COOL SEASON GRASSES AND IN LATE FALL TO PREVENT SEEDS OF ANNUAL WEEDS FROM MATURING. MOWING OF LEGUMES CAN BE LESS FREQUENT. TREES, SHRUBS AND WOODY VEGETATION ARE NOT PERMITTED TO GROW ALONG OR ON ANY PART OF THE EMBANKMENT THAT WAS CONSTRUCTED USING ENGINEERED (COMPACTED) FILLS.

- PERFORM SOIL SAMPLING ON STABILIZED POND SOIL AREAS AT LEAST ONCE EVERY 4 YEARS. SOIL SAMPLING AND TESTING SHOULD BE PERFORMED BY A QUALIFIED SOIL TESTING LABORATORY SUCH AS VPI&SU. CONTACT THE LOCAL OFFICE OF THE VIRGINIA COOPERATIVE EXTENSION FOR FURTHER INFORMATION. APPLY LIME AND FERTILIZER IN ACCORDANCE WITH TEST RECOMMENDATIONS.

- IN STABILIZED POND AREAS, IF VEGETATION COVERS LESS THAN 40% OF SOIL SURFACES, LIME, FERTILIZE AND SEED IN ACCORDANCE WITH RECOMMENDATIONS FOR NEW SEEDLINGS. IF VEGETATION COVERS MORE THAN 40% BUT LESS THAN 70% OF SOIL SURFACES. LIME. FERTILIZE AND OVER SEED IN ACCORDANCE WITH CURRENT SEEDING RECOMMENDATIONS OR REQUIREMENTS OF THE VESCH.

- PERFORM QUARTERLY INSPECTIONS OF THE RISER SECTION FOR THE OBSERVANCE OF COLLECTED TRASH AND DEBRIS. IMMEDIATELY REMOVE ANY TRASH OR DEBRIS THAT PREVENTS THE MOVEMENT OF WATER. REMOVE ANY TRASH AND LITTER DOWNSTREAM AND AT STORM DRAIN OR CHANNEL INFLOW LOCATIONS TO MAINTAIN THE INTEGRITY OF THE STRUCTURE AND PROVIDE AN ATTRACTIVE APPEARANCE.

- PERFORM YEARLY INSPECTIONS OF THE FACILITY FOR DAMAGE. STRUCTURAL INSPECTION SHALL BE PERFORMED ON THE CMP RISER. ANTI-VORTEX DEVICE, TRASH RACK, ORIFICES/WEIRS, OUTLET BARREL, AND POND EMBANKMENT. EXPOSED METAL SURFACES SHALL BE RE-PAINTED OR RE-GALVANIZED TO MINIMIZE RUST DAMAGE OR REPLACED IF RUST DAMAGE IS IRREVERSIBLE. IF DAMAGE IS EVIDENT. FURTHER INVESTIGATION BY A QUALIFIED PROFESSIONAL MAY BE REQUIRED TO ASSESS THE INTEGRITY OF THE STRUCTURE.

- PERFORM QUARTERLY INSPECTIONS OF THE GRADED SIDE SLOPES OF THE FACILITY FOR SIGNS OF ANIMAL/RODENT BURROWS OR SLOPE EROSION. IMMEDIATELY PERFORM NECESSARY REPAIRS, REFILLING OR RESEEDING.

- PERFORM YEARLY OBSERVATIONS OF PERIMETER AREAS SURROUNDING THE FACILITY TO ENSURE CHANGES IN LAND USE, TOPOGRAPHY OR ACCESS HAVE NOT OCCURRED AND DO NOT AFFECT THE OPERATION, MAINTENANCE, ACCESS OR SAFETY FEATURES AS PROVIDED. APPROPRIATE ACTION IS REQUIRED TO ENSURE ADEQUACY AND TO PROVIDE A CLEAR, SAFE PASSAGE FOR MAINTENANCE VEHICLES TO THE ENGINEERED EMBANKMENT AND PRINCIPAL FLOW CONTROL STRUCTURES.

RECORD KEEPING. THE OWNER OR DESIGNATED REPRESENTATIVE SHALL KEEP REASONABLE, ACCURATE WRITTEN RECORDS OF INSPECTIONS PERFORMED FOR THE STRUCTURE. RECORDS SHALL DOCUMENT ROUTINE MAINTENANCE AND/OR REPAIRS PERFORMED. COPIES SHALL BE PROVIDED TO THE COUNTY UPON REQUEST.

IAMSBURG LANDING - 016

CNUMBONINACNITAL DIVICIONE OF TANAES OTV COLINITY

THE FACILITY SHALL NOT ACCEPT ADDITIONAL DRAINAGE OR BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT OR APPROVAL BY THE

COPYRIGH

6. Design Calculations

9-135-04

Supporting Engineering Documents for Williamsburg Landing Parking Addition at "The Landing"

> November 24, 2004 Revised: March 3, 2005

- Erosion and Sediment Control Narrative
- Storm Drainage Calculations
- BMP Calculations
- Drainage Area Maps

LMDG Project No. 2000312-000.08

Scott HERE'S A NEW BMP FOR THE INVENTORY. LANDMARK IS GOING TO BRING IT UP TO CURRENT STO'S. CALCS ARE NTACHED.

Need to put in 619. ALREADT IN MS ALLESS CREATE FILE ONTO BOND

WILLIAMSBURG LANDING PARKING LOT ADDITION AT THE LANDING

EROSION AND SEDIMENT CONTROL NARRATIVE NOVEMBER, 2004 Revised: MARCH, 2005

PROJECT DESCRIPTION

Williamsburg Landing, Inc. proposes an additional parking area behind the existing "Landing" building in the Williamsburg Landing Retirement Community. Additional land in the amount of 1.5709 Acres will need to be acquired from Mary S. Waltrip to accommodate the proposed parking addition. Williamsburg Landing is also proposing to extend an emergency access road to existing Marclay Road, as well as extend an 8" waterline for fire service to the Waltrip property.

The existing Williamsburg Landing property is zoned R-5 (Mulifamily Residential District) and is identified as tax parcel (48-2) (01-02). The additional property (Mary S. Waltrip) to be acquired is zoned R-8 (Rural Residential District) and is identified as tax parcel (48-2) (01-12). As shown on the site plan, approximately 1.23 Acres will be disturbed for the proposed parking, water utilities, emergency access road and storm drainage system. The proposed storm drainage system will discharge into an existing dry detention BMP facility located to the west of the proposed parking addition.

EXISTING SITE CONDITIONS

The proposed site is undeveloped and lightly wooded with limited understory. The landform in the general area is a rolling terrain with slopes varying from relatively flat (2% to 10%) to steeper slopes (10% to 60%) along the BMP facility to the west of the project and also to the east of the site along an existing ravine. Elevations within the overall project limits range from elevation 40 to elevation 76. Overland drainage from the site is divided by two natural drainage ridges. On the western side of the of the west drainage ridge, drainage is directed through surface runoff to the existing BMP facility. On the eastern side of the east drainage ridge, drainage ridge, drainage is directly into College Creek. Between the west and east drainage ridges, drainage is directed through surface runoff to an existing parking lot and storm drainage system behind the existing "Landing" building that inevitably drains to the existing BMP facility to the west of the site.

STORMWATER MANAGEMENT

The proposed parking addition runoff will be directed through surface runoff to a proposed storm drainage system that will discharge into an existing BMP (Basin 5) to the northwest of the proposed site. LandMark Design Group has prepared an Exhibit entitled "Chesapeake Bay Preservation Ordinance Compliance Map – Williamsburg Landing", which shows that with the additional property (1.57 Acres) being added to the overall Williamsburg Landing property, the County's requirement of 10 BMP Points has been achieved. Therefore no further stormwater management measures are required with this parking addition project. Although, per a request by the James City County Environmental Division we are bringing the facility up to current standards to help achieve the release of the 1-year, 24-hour storm event over a 24 hour period.

<u>SOILS</u>

The predominate soil types which will be disturbed during the project construction are Craven-Uchee complex, Emporia fine sandy loam, Emporia Complex and Udorthents-Dumps complex, as depicted on soil mapping contained in the <u>USDA – Soil</u> <u>Conservation Service, Soil Survey of James City and York Counties and the City of</u> <u>Williamsburg, Virginia.</u>

11C – Craven-Uchee Complex, 6% to 10% slopes

Craven-Uchee complex consists of moderately well drained Craven soils and well-drained Uchee soils. Areas of this complex are on side slopes and narrow ridge tops. Typically, the surface layer of the Craven soils is dark grayish brown fine sandy loam about 4 inches thick. The subsurface layer is pale olive fine sandy loam 5 inches thick. The subsoil extends to a depth of 42 inches. It is yellowish brown clay in the upper part and yellowish brown sandy loam mottled with gray in the middle and lower parts. The substratum is brownish yellow fine sandy loam mottled with gray in the upper part and gray loamy fine sand with yellow mottles in the lower part, and extends to a depth of at least 72 inches.

Typically, the surface layer of Uchee soils is dark grayish brown and very pale brown loamy fine sand 19 inches thick. The subsoil extends to a depth of 56 inches. It is strong brown sandy clay loam and clay mottled with gray and red from 36 to 56 inches. The substratum from 56 to at least 65 inches is variegated red, brown and gray stratified sandy loam and sandy clay loam. In the Carven soils, permeability is slow, and in the Uchee soils, it is moderate in the upper part of the subsoil and moderately slow in the lower part. The available water capacity is moderate of the Caven soils and low or moderate for the Uchee soils. Surface runoff is rapid. The erosion hazard is severe. The subsoil of both soils has moderate shrink-swell potential. During winter and early spring a seasonal high water table is at a depth of 2 to 3 feet in the Craven soil and 3 ½ feet to 5 feet in the Uchee soils. This soil is in capability subclass IVe. The shrink-swell potential for the Craven and Uchee soils are low to moderate. The erosion factor "K" is from 0.32 to 0.37 for the Craven soil and 0.20 to 0.28 for the Uchee soil. Craven soils are in hydrological soils, Group "C"; Uchee soils are in hydrological soils, Group "A".

14B - Emporia Fine Sandy Loam, 2% to 6% slopes

The Emporia soil is well drained.

Typically, the surface layer is dark grayish brown fine sandy loam. The subsurface layer is pale brown loam. The subsoil is yellowish brown loam with mostly strong brown mottles in the upper part; yellowish brown, firm sandy clay loam with strong brown and gray mottles in the middle part; and mottled gray and brown, firm sandy loam in the lower part. The substratum is variegated gray, brown and red firm sandy clay loam.

The shrink/swell potential for the Emporia soils are low to moderate. The erosion factor "K" is form 0.20 to 0.28. Emporia soils are in hydrologic group "C".

15F – Emporia Complex, 25% to 50% slopes

Emporia complex appears on side slopes along drainage ways. Typically, the surface layer of this soil is dark grayish brown fine sandy loam about 4 inches thick. The subsoil extends to a depth of 45-50 inches and is yellowish brown loam with mostly strong brown mottles in the upper parts; yellowish brown, firm sandy clay loam with strong brown and gray mottles in the middle part; and mottled gray and brown, firm sandy clay loam in the lower part. The substratum is variegated gray, brown, and red, firm sandy clay loam to a depth of at least 75 inches. In this Emporia soil, permeability is moderate in the upper part of the subsoil and moderately slow to slow in the lower part. The available water capacity is moderate. Surface runoff is medium. The erosion hazard is moderate. The subsoil has moderate shrink-swell potential. A perched high water table is at a depth of 3 to 4 $\frac{1}{2}$ feet in winter and spring. This soil is in capability subclass VIIe. The hydrologic soil group for this soil is C.

36 - Udorthents-Dumps Complex

This complex consists of shallow to deep, excessively drained to moderately well drained soil material in areas that were disturbed during excavation. The excavations are partly filled with garbage, trees, stumps, metal, fly ash, or dredgings.

The permeability of the Udorthents in this complex ranges from moderately rapid to slow. The erosion hazard is light to severe.

CRITICAL EROSION AREAS

The soils identified on the site exhibit a moderate to severe erosion hazard. All disturbed slopes will be stabilized by vegetative cover.

EROSION AND SEDIMENT CONTROL MEASURES

Unless otherwise indicated all vegetative and structural erosion and sediment control practices will be constructed and maintained according to minimum standards and specifications of the <u>Virginia Erosion and Sediment Control Handbook, 1992</u>.

STRUCTURAL PRACTICE

The following practices are shown on the development plan sheets and detailed on the Erosion and Sediment Control Notes and Details sheet.

1. TEMPORARY CONSTRUCTION ENTRANCE (3.02)

A temporary construction entrance will be installed at the south west corner of the project site on Route 634.

2. <u>SILT FENCE (3.05)</u>

Silt fence will be installed where shown on the plan.

3. STORM DRAIN INLET PROTECTION (3.07)

Storm drain inlet protection will be installed for all drainage inlet structures where shown on the plan.

4. <u>TEMPORARY DIVERSION DIKE (3.09)</u>

Temporary diversion dike will be installed where shown on the plan.

5. <u>TEMPORARY RIGHT-OF-WAY DIVERSION (3.11)</u>

Temporary right-of-way diversion will be installed where shown on the plan.

6. <u>TEMPORARY SEDIMENT TRAP (3.13)</u>

Temporary sediment traps will be installed where shown on the plan to detain sediment-laden runoff from small disturbed areas.

7. OUTLET PROTECTION (3.18)

Outlet protection is be installed at all storm outlet conditions where shown on the plan.

8. <u>TEMPORARY SEEDING (3.31)</u>

All disturbed areas will be seeded per state minimum standards and specifications section 3.31.

9. PERMANENT SEEDING (3.32)

All disturbed areas will be fertilized, seeded and mulched per state minimum standards and specifications section 3.32.

10. SOIL STABILIZATION BANKET (3.36-1)

Soil stabilization blanket – Treatments 1 and 2 will be used as a protective covering for steep slopes as shown on the plan per minimum standards and specifications section 3.36.

11. TREE PRESERVATION AND PROTECTION (3.38)

Tree preservation and protection is to be installed along the "limits of clearing" shown on the plan per minimum standards and specifications section 3.38.

MANAGEMENT STRATEGIES AND CONSTRUCTION SEQUENCE

- 1. Mark limits of clearing and establish tree protection as shown on the plans.
- 2. Install temporary construction entrance as indicated on the plans. The construction entrance shall be in place immediately (no later than 24 hours) upon the start of construction.
- 3. Begin clearing operation for sediment trap #1 and storm sewer outfall (structures A-5 to A-7).
- 4. Install perimeter silt fence and diversion dikes where called for on the plans.
- 5. Install storm drainage outfall (structures A-5 to A-7) and associated outlet protection.

- 6. Construct sediment trap #1.
- 7. Begin clearing operation for remainder of storm drainage system and proposed temporary sediment traps #2 and #3.
- 8. Install remainder of storm drainage system.
- 9. Begin construction of sediment traps #2 and #3 and associated diversion dikes.
- 10. Once all sediment traps are in place and functioning properly, begin the remainder of clearing and grubbing operation.
- 11. If temporary stockpiles are used, the contractor shall install silt fence at the base to prevent sediment runoff.
- 12. Proceed with preparations of the sub-grade for the parking areas and drive aisles.

13. Install water utilities, curb and gutter and sub-base materials.

14. Apply permanent and temporary seeding where required.

- 15. During all phases of construction, the contractor shall perform daily inspections of erosion and sediment control measures. Accumulated sediment build up is to be removed and disposed of on-site after each storm event.
- 16. Upon achieving final site stabilization, the contractor shall remove all erosion and sediment measures and dispose of properly.
LANDMARK DESIGN GROUP INC

DATE: 10/13/04

PROJECT N(2000312-000.08

Storm Sewer Design Computations Williamsburg Landing Parking Addition - The Landing

185	=a	AREA	RUNOFF	С	A	INLET	RAIN	RUNO	FF "Q"	INVE	RT	PIPE			CAPA-	-	FLOW	REM/	ARKS
20.81	=b	DRAIN.	COEF.			TIME	FALL		, ,	ELEVAT	TIONS	LNGTH	SLOPE	DIA	CITY	VEL.	TIME		
10 YR S	ГМ	"A"																	
FROM	то			INCRE-	ACCUM-	MIN-		INCRE-	ACCUM-	UPPER	LOWER								
POINT	POINT	ACRES	C	MENT	ULATED	UTES	IN.\HR	MENT	ULATED	END	END	FT	FT./FT.	IN.	C.F.S.	F.P.S.	MIN.		
A-1	A-2	1.99	0.25	0.00	0.50	19.00	4.65	2.31	2.31	68.00	66.84	10	0.1160	15	23.82	19.42	0.01	ES-1	
A-2	A-3	0.56	0.64	0.36	0.86	19.00	4.65	1.67	3.98	66.74	65.85	178	0.0050	15	4.95	4.03	0.74	Top=70.66	5
A-3	A-4	0.00	0.00	0.00	0.86	19.00	4.65	0.00	3.98	65.75	64.75	200	0.0050	15	4.95	4.03	0.83	Rim-74.90)
A-4	A-5	0.82	0.56	0.46	1.32	19.00	4.65	2.13	6.11	64.65	61.83	188	0.0150	15	8.57	6.98	0.45	Rim=71.52	2
A-5	A-6	0.26	0.58	0.15	1.47	19.00	4.65	0.70	6.81	58.00	49.00	62	0.1452	15	26.65	21.73	0.05	Rim=66.10	0
A-6	A-7	0.00	0.00	0.00	1.47	19.00	4.65	0.00	6.81	40.12	40.00	25	0.0050	18	8.04	4.55	0.09	ES-1	
<u> </u>																			
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PROJECT 2000312-000.08

HEC12 Version: V2.91

Williamsburg Landing Parking Addition

INLET NUMBER A-2 LENGTH 2.5 STATION 16+24.73 DRAINAGE AREA =0.220 ACRESC VALUE = .900DRAINAGE AREA =0.020 ACRESC VALUE = .500DRAINAGE AREA =0.100 ACRESC VALUE = .250DRAINAGE AREA =0.080 ACRESC VALUE = .900DRAINAGE AREA =0.030 ACRESC VALUE = .500DRAINAGE AREA =0.110 ACRESC VALUE = .500DRAINAGE AREA =0.110 ACRESC VALUE = .250 CA = 0.198CA = 0.010CA = 0.025CA = 0.072CA = 0.015CA = 0.02756 FOR THE FIRST SIDE SUM CA= 0.233 INT= 5.17 CFS= 1.205 CO= 0.000 GUTTER FLOW= 1.205 FOR THE OTHER SIDE SUM CA= 0.115 INT= 5.17 CFS= 0.592 CO= 0.000 GUTTER FLOW= 0.592 AT THE INLET SUM CA= 0.348 INT= 5.17 CFS= 1.797 CO= 0.000 GUTTER FLOW= 1.797 GUTTER SLOPE = 0.0050 FT/FT PAVEMENT CROSS SLOPE = 0.0360 FT/FT SPREAD AT A SLOPE OF .005 (ft./ft.) AND 1.20 (cfs) IS 5.19 (ft.) XXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXXXX P EFFEC. LENGTH (ft) = 6.10H(ft) = 0.458DEPTH OF WATER (ft) = 0.25 SPREAD (ft) = 7.05

Run Date: 10-13-2004

LENGTH 4.0 STATION 12+44.48 INLET NUMBER A-4 DRAINAGE AREA =0.110 ACRESC VALUE = .900DRAINAGE AREA =0.040 ACRESC VALUE = .500DRAINAGE AREA =0.090 ACRESC VALUE = .250DRAINAGE AREA =0.280 ACRESC VALUE = .900DRAINAGE AREA =0.060 ACRESC VALUE = .500DRAINAGE AREA =0.270 ACRESC VALUE = .250 CA = 0.099CA = 0.020CA = 0.023CA = 0.2CA = 0.030- 0.068.35 FOR THE FIRST SIDE SUM CA= 0.141 INT= 5.03 CFS= 0.712 CO= 0.000 GUTTER FLOW= 0.712 FOR THE OTHER SIDE SUM CA= 0.350 INT= 5.03 CFS= 1.758 CO= 0.000 GUTTER FLOW= 1.758 AT THE INLET SUM CA= 0.491 INT= 5.03 CFS= 2.470 CO= 0.000 GUTTER FLOW= 2.470 GUTTER SLOPE = 0.0050 FT/FT PAVEMENT CROSS SLOPE = 0.0200 FT/FT SPREAD AT A SLOPE OF .005 (ft./ft.) AND 1.76 (cfs) IS 8.71 (ft.) XXXXXXXXX CURB INLET IN A SUMP XXXXXXXXXX P EFFEC. LENGTH (ft) = 7.60H (ft) = 0.458DEPTH OF WATER (ft) = 0.27SPREAD (ft) = 13.55INLET NUMBER A-5 LENGTH 6.0 STATION 10+19.81 DRAINAGE AREA = 0.110 ACRES C VALUE = .900 CA = 0.099

 DRAINAGE AREA =
 0.060 ACRES
 C VALUE = .500
 CA = 0.030

 DRAINAGE AREA =
 0.090 ACRES
 C VALUE = .250
 CA = 0.023

 SUM CA= 0.151 INT= 5.03 CFS= 0.762 CO= 0.000 GUTTER FLOW= 0.762 PAVEMENT CROSS SLOPE = 0.0200 FT/FT GUTTER SLOPE = 0.0300 FT/FTW/T SW Eo a S'W SE SPREAD W SW/SX 2.50 2.0 0.80 0.0833 4.2 1.00 3.5 0.147 0.166 XXXXXXXXX CURB INLET ON A CONTINUOUS GRADE XXXXXXXXXX REQUIRED LENGTH (ft) = 6.8 EFFICIENCY= 0.98 CFS INTERCEPTED= 0.75 CFS CARRYOVER= 0.02

A-1 to A-2 Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\wl parkfm2
Worksheet	A-1 to A-2
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	_	
Mannings Coefficient	0.012	
Channel Slope	0.1160	00 ft/ft
Diameter	15.00	in
Discharge	2.31	cfs

			_
Results			
Depth	0.26	ft	
Flow Area	0.19	ft²	
Wetted Perimeter	1.19	ft	
Top Width	1.02	ft	
Critical Depth	0.61	ft	
Percent Full	21.03		
Critical Slope	0.0048	02 ft/ft	
Velocity	12.31	ft/s	
Velocity Head	2.35	ft	
Specific Energy	2.62	ft	
Froude Number	5.05		
Maximum Discharge	25.64	cfs	
Full Flow Capacity	23.83	cfs	
Full Flow Slope	0.0010	90 ft/ft	
Flow is supercritical.			

Notes:

A-1 VDOT ST'D ES-1 INV.=68.00

10 L.F.-15" HDPE (N-12) @ 11.60%

A-2 to A-3 Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\wl parkfm2
Worksheet	A-2 to A-3
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data		_
Mannings Coefficient	0.012	
Channel Slope	0.0050	00 ft/ft
Diameter	15.00	in
Discharge	3.98	cfs

Results			
Depth	0.85	ft	
Flow Area	0.89	ft²	
Wetted Perimeter	2.42	ft	
Top Width	1.17	ft	
Critical Depth	0.81	ft	
Percent Full	67.93		
Critical Slope	0.0057	50 ft/ft	
Velocity	4.48	ft/s	
Velocity Head	0.31	ft	
Specific Energy	1.16	ft	
Froude Number	0.91		
Maximum Discharge	5.32	cfs	
Full Flow Capacity	4.95	cfs	
Full Flow Slope	0.0032	35 ft/ft	
Flow is subcritical.			

Notes:

A-2 VDOT ST'D DI-3A, L=2.5' TOP=70.66 INV. IN=66.84 INV. OUT=66.74

178 L.F.-15" HDPE (N-12) @ 0.50%

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A-3 to A-4 Worksheet for Circular Channel

_

Project Description	
Project File	c:\haestad\fmw\wl parkfm2
Worksheet	A-3 to A-4
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data			
Mannings Coefficient	0.012		
Channel Slope	0.00500	00 ft/ft	
Diameter	15.00	in	
Discharge	3.98	cfs	

Results			
Depth	0.85	ft	
Flow Area	0.89	ft²	
Wetted Perimeter	2.42	ft	
Top Width	1.17	ft	
Critical Depth	0.81	ft	
Percent Full	67.93		
Critical Slope	0.00576	50 ft/ft	
Velocity	4.48	ft/s	
Velocity Head	0.31	ft	
Specific Energy	1.16	ft	
Froude Number	0.91		
Maximum Discharge	5.32	cfs	
Full Flow Capacity	4.95	cfs	
Full Flow Slope	0.0032	35 ft/ft	
Flow is subcritical.			

Notes:

A-3 VDOT ST'D MH-1 RIM=74.90 INV. IN=65.85 INV. OUT=65.75

200 L.F.-15" HDPE (N-12) @ 0.50%

A-4 to A-5 Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\wl parkfm2
Worksheet	A-4 to A-5
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data	_		
Mannings Coefficient	0.012		
Channel Slope	0.0150	00 ft/ft	
Diameter	15.00	in	
Discharge	6.11	cfs	

		-	
Results			
Depth	0.78	ft	
Flow Area	0.81	ft²	
Wetted Perimeter	2.28	ft	
Top Width	1.21	ft	
Critical Depth	1.00	ft	
Percent Full	62.41		
Critical Slope	0.00799	96 ft/ft	
Velocity	7.59	ft/s	
Velocity Head	0.89	ft	
Specific Energy	1.67	ft	
Froude Number	1.64		
Maximum Discharge	9.22	cfs	
Full Flow Capacity	8.57	cfs	
Full Flow Slope	0.00762	24 ft/ft	
Flow is supercritical.			

Notes:

A-4 VDOT ST'D DI-3C, L=6' TOP=71.52 INV. IN=63.91 INV. OUT=63.81

188 L.F.-15" HDPE (N-12) @ 1.50%

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CC028_WILLIAMSBURG_LANDING - 031

- A-5 to A-6 Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\wl parkfm2
Worksheet	A-5 to A-6
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data			
Mannings Coefficient	0.012		
Channel Slope	0.1452	00 ft/ft	
Diameter	15.00	in	
Discharge	6.81	cfs	

Results			
Depth	0.43	ft	
Flow Area	0.37	ft²	
Wetted Perimeter	1.57	ft	
Top Width	1.19	ft	
Critical Depth	1.05	ft	
Percent Full	34.46		
Critical Slope	0.00911	1 ft/ft	
Velocity	18.17	ft/s	
Velocity Head	5.13	ft	
Specific Energy	5.56	ft	
Froude Number	5.70		
Maximum Discharge	28.68	cfs	
Full Flow Capacity	26.66	cfs	
Full Flow Slope	0.00947	1 ft/ft	
Flow is supercritical.			

Notes:

A-5 VDOT ST'D DI-3B, L=6' (TOP ON 4.2% SLOPE) TOP=65.97 INV. IN=61.83 INV. OUT=58.00

62 L.F.-15" HDPE (N-12) @ 14.52%

A-6 to A-7 Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\wl parkfm2
Morksheet	A-6 to A-7
VVOIKSHEEL	
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Channel Depth

Input Data			
Mannings Coefficient	0.012		
Channel Slope	0.0050	00 ft/ft	
Diameter	18.00	in	
Discharge	6.81	cfs	

Results		
Depth	1.06	ft
Flow Area	1.33	ft²
Wetted Perimeter	2.99	ft
Top Width	1.37	ft
Critical Depth	1.01	ft
Percent Full	70.59	
Critical Slope	0.005669	ft/ft
Velocity	5.11	ft/s
Velocity Head	0.41	ft
Specific Energy	1.46	ft
Froude Number	0.91	
Maximum Discharge	8.66	cfs
Full Flow Capacity	8.05	cfs
Full Flow Slope	0.003582	ft/ft
Flow is subcritical.		

Notes:

A-6 VDOT ST'D. MH-1 RIM=54.25 INV. IN=49.00 INV. OUT=40.12

25 L.F.-15" HDPE (N-12) @ 0.50%

PROJECT: Williamsburg Landing Parking Addition

LOCATION: James City County, Virginia

JOB NO.: 2000312-000.08

DATE: 11/10/2004

REVISION: 02-Mar-05

HYDRAULIC GRADE LINE

CONC	PIPE n=	0.012																					
NUET	OUTLET												JUNCTIC	N LOSS							EINIAI	INLET	DIM
STATION	N SURFACE	D(O)	O) Q(O)	L(O)	SF(O)	H(F)	V(O)	H(O)	Q(I)	D(I)	V(I)	Q*V	V^2/2G	H(I)	ANGLE	E K	H(>)	H(T)	1*3 H(T)	0.5* H(T)	H H	SURFACE ELEV	ELEV
A-6	40.00	18	6.8	25	0.0036	0.09	3.85	0.06	6.8	18	3.85	26	0.23	0.08	0	0.00	0.00	0.14	0.18	0.09	0.18	40.18	54.25
A-5	40.18	15	6.8	62	0.0095	0.59	5.54	0.12	6.1	15	4.97	30	0.38	0.13	30	0.00	0.00	0.25	0.33	0.16	0.75	40.93	66.10
A-4	40.93	15	6.1	190	0.0077	1.45	4.97	0.10	4.0	15	3.24	13	0.16	0.06	14	0.00	0.00	0.15	0.20	0.10	1.55	42.49	71.52
A-3	42.49	15	4.0	378	0.0033	1.23	3.24	0.04	4.0	15	3.24	13	0.16	0.06	0	0.00	0.00	0.10	0.13	0.06	1.30	43.78	74.90
A-2	43.78	15	4.0	378	0.0033	1.23	3.24	0.04	2.3	15	1.88	4	0.06	0.02	30	0.00	0.00	0.06	0.08	0.04	1.27	45.06	70.66
A-1	45.06	15	2.3	378	0.0011	0.42	1.88	0.01	0.0	15	0.00	0	0.00	0.00	0	0.00	0.00	0.01	0.02	0.01	0.42	45.48	68.00
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Subcatchment 2S: DA to BMP

Runoff =	14.78 cfs @	11.99 hrs, Volume=	0.727 af, Depth= 1.16"
----------	-------------	--------------------	------------------------

Runoff by SCS TR-20 method, UH=SCS, Time Span= 1.00-48.00 hrs, dt= 0.05 hrs Type II 24-hr 1 YR - JAMES CITY COUNTY Rainfall=2.80"

_	Area	(ac) C	N Dese	cription		
	2.	730 9	8 Pave	ed parking	& roofs	
	1.4	460 7	4 >759	% Grass c	over, Good,	HSG C
_	3.	320 7	0 <u>Woo</u>	ods, Good,	HSG C	
	7.	510 8	1 Wei	ghted Aver	age	
					0	
	Тс	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	·
	5.0					Direct Entry, Flow to A-1
	0.0	10	0.1160	19.4	23.83	Circular Channel (pipe), A-1 to A-2 HDPE Pipe
						Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
	0.7	178	0.0050	4.0	4.95	Circular Channel (pipe), A-2 to A-3 HDPE Pipe
						Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
	0.8	200	0.0050	4.0	4.95	Circular Channel (pipe), A-3 to A-4 HDPE Pipe
						Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
	0.4	188	0.0150	7.0	8.57	Circular Channel (pipe), A-4 to A-5 HDPE Pipe
				o / -	<u> </u>	Diam= 15.0" Area= 1.2 st Perim= 3.9' r= 0.31' n= 0.012
	0.0	62	0.1452	21.7	26.67	Circular Channel (pipe), A-5 to A-6 HDPE Pipe
	0.4	05	0.0050		• • -	Diam= 15.0" Area= 1.2 sf Perim= 3.9" r= 0.31" n= 0.012
	0.1	25	0.0050	4.6	8.05	Circular Channel (pipe), A-6 to A-7 HDPE Pipe
-				· · · · · · · · · · · · · · · · · · ·		Diam= 18.0" Area= 1.8 st Perim= 4.7' r= 0.38' n= 0.012
	7 0	000				

7.0 663 Total

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Subcatchment 2S: DA to BMP



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Pond 1P: BMP

Pre-developed 2 YR = 13.84 cfs Pre-developed 10 YR = 26.73 cfs

Inflow Area =	7.510 ac, $Inflow Depth = 1.16"$	for 1 YR - JAMES CITY COUNTY event
Inflow =	14.78 cfs @ 11.99 hrs, Volume=	0.727 af
Outflow =	0.66 cfs @ *13.67 hrs, Volume=	0.727 af, Atten= 96%, Lag= 100.8 min
Primary =	0.66 cfs @ 13.67 hrs, Volume=	0.727 af

Routing by Dyn-Stor-Ind method, Time Span= 1.00-48.00 hrs, dt= 0.05 hrs / 2 Peak Elev= 32.86' @ 13.67 hrs Surf.Area= 5,025 sf Storage= 15,543 cf Plug-Flow detention time= 261.2 min calculated for 0.727 af (100% of inflow) Center-of-Mass det. time= 260.6 min (1,104.6 - 844.0)

#	Invert	Avail.St	orage Sto	prage Des	scription		
1	25.00'	28,4	401 cf Cu	stom Sta	age Data (Irregular)) Listed below	
						-	
Elev	ation	Surf.Area	Perim.	Voids	Inc.Store	Cum.Store	Wet.Area
	(feet)	(sq-ft)	(feet)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>
2	25.00	67	32.0	40.0	0	0	67
	26.00	307	72.0	40.0	69	69	402
2	27.00	515	117.0	40.0	163	232	1,085
2	28.00	722	162.0	100.0	616	847	2,094
2	29.00	1,964	297.0	100.0	1,292	2,139	7,031
3	30.00	2,749	328.0	100.0	2,346	4,485	8,604
3	31.00	3,523	349.0	100.0	3,128	7,613	9,785
3	32.00	4,259	372.0	100.0	3,885	11,498	11,153
3	33.00	5,148	414.0	100.0	4,696	16,195	13,809
3	34.00	6,092	454.0	100.0	5,613	21,808	16,606
3	35.00	7,107	485.0	100.0	6,593	28,401	18,969
#_	Routing	Invert	Outlet Dev	rices			
1	Device 4	25.00'	28.0" x 2.	5' long C	MP Connection	CMP, square edge h	neadwall, Ke= 0.500
			Outlet Inve	ert= 25.00)' S= 0.0000 '/' n=	= 0.024 Cc= 0.900)
2	Device 1	25.00'	3.0" Vert.	Orifice/G	irate C= 0.600		
3	Device 1	33.50'	48.0" Horiz	z. Orifice	Grate Limited to	weir flow C= 0.600	3
4	Primary	25.00'	30.0" x 52	2.0' long (Culvert RCP, rour	nded edge headwal	I, Ke= 0.100
	-		Outlet Inve	ert = 24.48	3' S= 0.0100 '/' n=	= 0.013 Cc= 0.900)

Primary OutFlow Max=0.66 cfs @ 13.67 hrs HW=32.86' (Free Discharge)

4=Culvert (Passes 0.66 cfs of 75.97 cfs potential flow)

-1=CMP Connection (Passes 0.66 cfs of 53.27 cfs potential flow)

1-2=Orifice/Grate (Orifice Controls 0.66 cfs @ 13.4 fps)

-3=Orifice/Grate (Controls 0.00 cfs)

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Pond 1P: BMP



BMP Rational

VA-James City County 2-Year Duration=7 min, Inten=5.17 in/hr

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Subcatchment 2S: DA to BMP

Runoff 18.13 cfs @ 0.12 hrs, Volume= 0.266 af, Depth= 0.42" =

Runoff by Rational method, Rise/Fall=1.0/2.0 xTc, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs VA-James City County 2-Year Duration=7 min, Inten=5.17 in/hr

 Area ((ac)	C Des	cription		
2.	730 0.9	90 Imp	ervous		
1.4	460 0.3	30 Gra	SS		
 3.3	320 <u>0.</u> 2	20 Wo	ods		
7.	510 0.4	47 We	ighted Ave	rage	
			•	U	
Тс	Length	Slope	Velocity	Capacity	Description
 (min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	-
5.0					Direct Entry, Flow to A-1
0.0	10	0.1180	19.6	24.04	Circular Channel (pipe), A-1 to A-2 HDPE Pipe
					Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.7	178	0.0050	4.0	4.95	Circular Channel (pipe), A-2 to A-3 HDPE Pipe
					Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.8	200	0.0050	4.0	4.95	Circular Channel (pipe), A-3 to A-4 HDPE Pipe
					Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.4	188	0.0150	7.0	8.57	Circular Channel (pipe), A-4 to A-5 HDPE Pipe
			- · -		Diam= 15.0" Area= 1.2 st Perim= 3.9' r= 0.31' n= 0.012
0.0	62	0.1452	21.7	26.67	Circular Channel (pipe), A-5 to A-6 HDPE Pipe
	05	0.0050		0.05	Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.1	25	0.0050	4.6	8.05	Circular Channel (pipe), A-6 to A-7 HDPE Pipe
 					Diam= 18.0" Area= 1.8 st Perim= 4.7' r= 0.38' n= 0.012
7.0	663	Total			

Subcatchment 2S: DA to BMP



BMP RationalVA-James City County 2-Year Duration=82 min, Inten=1.24 in/hrPrepared by LandMark Design GroupHydroCAD® 7.00 s/n 001765 © 1986-2003 Applied Microcomputer Systems3/1/2005

Pond 1P: BMP

Pre-developed 2 YR = 13.84 cfs Pre-developed 10 YR = 26.73 cfs

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Inflow Area	a =	7.510 ac, li	nflow Depth = 0.83"	for 2-Year event
Inflow	=	4.40 cfs @	0.12 hrs, Volume=	0.518 af
Outflow	=	1.04 cfs @	1.54 hrs, Volume=	0.518 af, Atten= 76%, Lag= 85.5 min
Primary	= ^.	1.04 cfs @	1.54 hrs, Volume=	0.518 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 33.54' @ 1.54 hrs Surf.Area= 5,660 sf Storage= 19,239 cf Plug-Flow detention time= 262.0 min calculated for 0.518 af (100% of inflow) Center-of-Mass det. time= 261.8 min (308.1 - 46.3)

#	Invert	Avail.St	prage Storage Description						
_ 1	25.00'	28,4	28,401 cf Custom Stage Data (Irregular) Listed below						
Elevation Surf		Surf.Area	Perim.	Voids	Inc.Store	Cum.Store	Wet.Area		
((feet)	(sq-ft)	(feet)	(%)	(cubic-feet)	(cubic-feet)	(sq-ft)		
- 2	25.00	67	32.0	40.0	0	0	67		
2	26.00	307	72.0	40.0	69	69	402		
2	27.00	515	117.0	40.0	163	232	1,085		
2	28.00	722	162.0	100.0	616	847	2,094		
2	29.00	1,964	297.0	100.0	1,292	2,139	7,031		
3	30.00	2,749	328.0	100.0	2,346	4,485	8,604		
3	31.00	3,523	349.0	100.0	3,128	7,613	9,785		
3	32.00	4,259	372.0	100.0	3,885	11,498	11,153		
3	33.00	5,148	414.0	100.0	4,696	16,195	13,809		
3	34.00	6,092	454.0	100.0	5,613	21,808	16,606		
3	35.00	7,107	485.0	100.0	6,593	28,401	18,969		
#	Routing	Invert	Outlet Dev	ices					
1	Device 4	25.00'	28.0" x 2.5	5' long C	MP Connection C	MP, square edge h	neadwall, Ke= 0.500		
			Outlet Inve	rt= 25.00)' S= 0.0000 '/' n=	= 0.024 Cc= 0.900			
2	Device 1	25.00'	3.0" Vert. 0	Drifice/G	rate C= 0.600				
3	Device 1	33.50'	48.0" Horiz	z. Orifice	Grate Limited to v	weir flow C= 0.600	0		
4	Primary	25.00'	30.0" x 52 Outlet Inve	.0' long (rt= 24.48	Culvert RCP, roun 3' S= 0.0100 '/' n=	nded edge headwal = 0.013 Cc= 0.900	l, Ke= 0.100		

Primary OutFlow Max=1.04 cfs @ 1.54 hrs HW=33.54' (Free Discharge)

4=Culvert (Passes 1.04 cfs of 80.25 cfs potential flow)

-1=CMP Connection (Passes 1.04 cfs of 55.92 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.69 cfs @ 14.0 fps)

---3=Orifice/Grate (Weir Controls 0.36 cfs @ 0.7 fps)

Pond 1P: BMP



BMP RationalVA-James City County 10-Year Duration=7 min, Inten=6.65 in/hrPrepared by LandMark Design GroupHydroCAD® 7.00 s/n 001765 © 1986-2003 Applied Microcomputer Systems3/1/2005

Subcatchment 2S: DA to BMP

Runoff = 23.35 cfs @ 0.12 hrs, Volume= 0.342 af, Depth= 0.55"

Runoff by Rational method, Rise/Fall=1.0/2.0 xTc, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs VA-James City County 10-Year Duration=7 min, Inten=6.65 in/hr

_	Area	(ac)	C Des	cription		
	2.	730 0.9	90 Imp	ervous		
	1.	460 0.3	30 Gra	SS		
_	3.	<u>320 0.2</u>	<u>20 Wo</u>	ods		
	7.	510 0.4	47 Wei	ighted Ave	rage	
	Tc	Length	Slope	Velocity	Capacity	Description
_	(min)	(feet)	(ft/ft)_	(ft/sec)	(cfs)	
	5.0					Direct Entry, Flow to A-1
	0.0	10	0.1180	19.6	24.04	Circular Channel (pipe), A-1 to A-2 HDPE Pipe
						Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
	0.7	178	0.0050	4.0	4.95	Circular Channel (pipe), A-2 to A-3 HDPE Pipe
	0.0	000	0.0050	4.0	4.05	Diam= 15.0" Area= 1.2 st Perim= 3.9" r= 0.31" n= 0.012
	0.8	200	0.0050	4.0	4.95	Circular Channel (pipe), A-3 to A-4 HDPE Pipe
	0.4	100	0.0450	70	0 57	Diam= 15.0" Area= 1.2 st Perim= 3.9 r= 0.31 n= 0.012
	0.4	100	0.0150	7.0	0.07	Circular Channel (pipe), A-4 to A-5 HDFE Fipe Diam 15.0° Area 1.2 of Derim 3.0° r 0.31° n 0.012
	0.0	62	0 1/52	21.7	26.67	Diam 15.0 Area 1.2 Si Femm 5.9 $1-0.01$ $n=0.012$
	0.0	02	0.1452	21.7	20.07	Diam = 15.0" Area = 1.2 of Perim = 3.9' $r = 0.31'$ $n = 0.012$
	01	25	0.0050	46	8.05	Circular Channel (nine) A-6 to A-7 HDPF Pine
	0.1	20	0.0000	7.0	0.00	Diam= 18.0" Area= 1.8 sf Perim= 4.7' $r= 0.38'$ n= 0.012
-	7.0	663	Total			
	1.0	000	iuai			

Subcatchment 2S: DA to BMP



BMP Rational

Prepared by LandMark Design Group

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Pond 1P: BMP

Pre-developed 2 YR = 13.84 cfs Pre-developed 10 YR = 26.73 cfs

Inflow Are	ea =	7.510 ac, Ir	flow Depth = 1.04"	for 10-Year event
Inflow	=	10.66 cfs @	0.12 hrs, Volume=	0.653 af
Outflow	=	9.45 cfs @	0.71 hrs, Volume=	0.653 af, Atten= 11%, Lag= 35.4 min
Primary	=	9.45 cfs @	0.71 hrs, Volume=	0.653 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 33.86' @ 0.71 hrs Surf.Area= 5,957 sf Storage= 21,003 cf Plug-Flow detention time= 202.6 min calculated for 0.653 af (100% of inflow) Center-of-Mass det. time= 202.7 min (228.6 - 25.9)

#	Invert	Avail.St	orage Storage Description							
1	25.00'	28,4	28,401 cf Custom Stage Data (Irregular) Listed below							
Elevation		Surf.Area	Perim.	Voids	Inc.Store	Cum.Store	Wet.Area			
((feet)	<u>(sq-ft)</u>	(feet)	(%)	(cubic-feet)	(cubic-feet)	<u>(sq-ft)</u>			
2	25.00	67	32.0	40.0	0	0	67			
2	26.00	307	72.0	40.0	69	69	402			
2	27.00	515	117.0	40.0	163	232	1,085			
2	28.00	722	162.0	100.0	616	847	2,094			
2	29.00	1,964	297.0	100.0	1,292	2,139	7,031			
3	30.00	2,749	328.0	100.0	2,346	4,485	8,604			
3	31.00	3,523	349.0	100.0	3,128	7,613	9,785			
3	32.00	4,259	372.0	100.0	3,885	11,498	11,153			
3	33.00	5,148	414.0	100.0	4,696	16,195	13,809			
3	34.00	6,092	454.0	100.0	5,613	21,808	16,606			
3	35.00	7,107	485.0	100.0	6,593	28,401	18,969			
#	Routing	Invert	Outlet Dev	ces						
1	Device 4	25.00'	28.0" x 2.5	ö' long C	MP Connection C	MP, square edge h	eadwall, Ke= 0.500			
			Outlet Inve	rt= 25.00)' S= 0.0000 '/' n=	= 0.024 Cc= 0.900				
2	Device 1	25.00'	3.0" Vert. 0	Drifice/G	irate C= 0.600					
3	Device 1	33.50'	48.0" Horiz	z. Orifice	e/Grate Limited to v	weir flow C= 0.600)			
4 Primary 25.00' 30.0" x 52.0' long Culvert RCP, rounded edge headwall, Ke= 0.100 Outlet Invert= 24.48' S= 0.0100 '/' n= 0.013 Cc= 0.900							, Ke= 0.100			

Primary OutFlow Max=9.44 cfs @ 0.71 hrs HW=33.86' (Free Discharge)

-4=Culvert (Passes 9.44 cfs of 82.15 cfs potential flow)

-1=CMP Connection (Passes 9.44 cfs of 57.09 cfs potential flow)

2=Orifice/Grate (Orifice Controls 0.70 cfs @ 14.2 fps)

---3=Orifice/Grate (Weir Controls 8.75 cfs @ 2.0 fps)

Pond 1P: BMP



VA-James City County 100-Year Duration=7 min, Inten=9.10 in/hr **BMP** Rational Prepared by LandMark Design Group HydroCAD® 7.00 s/n 001765 © 1986-2003 Applied Microcomputer Systems

3/1/2005

Subcatchment 2S: DA to BMP

Runoff 0.468 af, Depth= 0.75" = 31.93 cfs @ 0.12 hrs, Volume=

Runoff by Rational method, Rise/Fall=1.0/2.0 xTc, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs VA-James City County 100-Year Duration=7 min, Inten=9.10 in/hr

A	rea	(ac)	C Des	cription		
	2.	730 0.9	90 Imp	ervous		
	1.	460 0.3	30 Gra	SS		
	3.	<u>320 0.2</u>	<u>20 Wo</u>	ods		
	7.	510 0.4	47 Wei	ighted Ave	rage	
	Tc	Length	Slope	Velocity	Capacity	Description
<u>(m</u>	<u>in)</u>	(feet)	(ft/ft)	(ft/sec)	(cfs)	
	5.0					Direct Entry, Flow to A-1
	0.0	10	0.1180	19.6	24.04	Circular Channel (pipe), A-1 to A-2 HDPE Pipe
						Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
	0.7	178	0.0050	4.0	4.95	Circular Channel (pipe), A-2 to A-3 HDPE Pipe
	~ ~					Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
	0.8	200	0.0050	4.0	4.95	Circular Channel (pipe), A-3 to A-4 HDPE Pipe
	~ 4	400	0.0450			Diam= 15.0" Area= 1.2 st Perim= 3.9" r= 0.31" n= 0.012
	0.4	188	0.0150	7.0	8.57	Circular Channel (pipe), A-4 to A-5 HDPE Pipe
	~ ~	~~~	0 4 4 5 0	04 7	00.07	Diam= 15.0" Area= 1.2 st Perim= 3.9" r= 0.31" n= 0.012
	0.0	62	0.1452	21.7	26.67	Circular Channel (pipe), A-5 to A-6 HDPE Pipe
	~ 4	05	0.0050	4.0	0.05	Diam= 15.0" Area= 1.2 st Perim= 3.9 r= 0.31 n= 0.012
	0.1	25	0.0050	4.6	8.05	Circular Unannel (pipe), A-6 to A-7 HUPE Pipe
			~ ()	_		Diam= 10.0 Area= 1.0 Si Penin= 4.7 1-0.30 n-0.012

1.0 663 lotal

Subcatchment 2S: DA to BMP



BMP RationalVA-James City County 100-Year Duration=25 min, Inten=5.74 in/hrPrepared by LandMark Design GroupHydroCAD® 7.00 s/n 001765 © 1986-2003 Applied Microcomputer Systems3/1/2005

Pond 1P: BMP

Pre-developed 2 YR = 13.84 cfs Pre-developed 10 YR = 26.73 cfs

Inflow Area	a =	7.510 ac, Inf	flow Depth = 1.28 "	for 100-Year event
Inflow	=	20.41 cfs @	0.12 hrs, Volume=	0.801 af
Outflow	=	18.45 cfs @	0.44 hrs, Volume=	0.801 af, Atten= 10%, Lag= 19.2 min
Primary	=	18.45 cfs @	0.44 hrs, Volume=	0.801 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs / 2 Peak Elev= 34.07' @ 0.44 hrs Surf.Area= 6,164 sf Storage= 22,278 cf Plug-Flow detention time= 162.5 min calculated for 0.801 af (100% of inflow) Center-of-Mass det. time= 162.3 min (180.2 - 18.0)

#	Invert	Avail.St	orage Storage Description						
1	25.00'	28,4	401 cf Custom Stage Data (Irregular) Listed below						
Elev	ation	Surf.Area	Perim.	Voids	Inc.Store	Cum.Store	Wet.Area		
(feet)		(sq-ft)	(feet)	(%)	(cubic-feet)	(cubic-feet)	(sq-ft)		
2	25.00	67	32.0	40.0	0	0	67		
2	26.00	307	72.0	40.0	69	69	402		
2	27.00	515	117.0	40.0	163	232	1,085		
2	28.00	722	162.0	100.0	616	847	2,094		
2	29.00	1,964	297.0	100.0	1,292	2,139	7,031		
3	30.00	2,749	328.0	100.0	2,346	4,485	8,604		
3	31.00	3,523	349.0	100.0	3,128	7,613	9,785		
3	32.00	4,259	372.0	100.0	3,885	11,498	11,153		
3	33.00	5,148	414.0	100.0	4,696	16,195	13,809		
3	34.00	6,092	454.0	100.0	5,613	21,808	16,606		
3	35.00	7,107	485.0	100.0	6,593	28,401	18,969		
#	Routing	Invert	Outlet Dev	ices					
1	Device 4	25.00'	28.0" x 2.	5' long C	MP Connection	CMP, square edge	headwall, Ke= 0.500		
			Outlet Inve	Outlet Invert= 25.00' S= 0.0000 '/' n= 0.024 Cc= 0.900					
2 Device 1		25.00'	3.0" Vert. (Orifice/G	Grate C= 0.600				
3	Device 1	33.50'	48.0" Horiz	z. Orifice	e/Grate Limited to	weir flow C= 0.60	0		
4	Primary	25.00'	30.0" x 52	.0' long	Culvert RCP, rou	nded edge headwa	II, Ke= 0.100		
			Outlet Inve	ert= 24.48	8' S= 0.0100 '/' n	= 0.013 Cc= 0.90	0		

Primary OutFlow Max=18.45 cfs @ 0.44 hrs HW=34.07' (Free Discharge)

4=Culvert (Passes 18.45 cfs of 83.42 cfs potential flow)

-1=CMP Connection (Passes 18.45 cfs of 57.89 cfs potential flow)

-2=Orifice/Grate (Orifice Controls 0.71 cfs @ 14.4 fps)

-3=Orifice/Grate (Weir Controls 17.74 cfs @ 2.5 fps)

BMP RationalVA-James City County 100-Year Duration=25 min, Inten=5.74 in/hrPrepared by LandMark Design GroupHydroCAD® 7.00 s/n 001765 © 1986-2003 Applied Microcomputer Systems3/1/2005

Pond 1P: BMP







7. Reports

8. Correspondence

9. Inspection Records



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

County BMP ID Code (if known): <u>CC - 02</u>8

Name of Facility: Williamsburg Landing BMP No.: of Date: 10/27/06
Location: Micro-pool upstream of propert control structure
Name of Owner: Williamsburg Landing Inc.
Name of Inspector: Joe Buchite
Type of Facility: Extended Dry Detention Facility
Weather Conditions: <u>Sunny</u> 70° Type: Final Inspection County BMP Inspection Program Owner Inspection

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

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

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

Facility Item	0.K.	Routine	Urgent	Comments					
Embankments and Side Slopes:									
Grass Height NA	THE								
Vegetation Condition									
Tree Growth	~								
Erosion	\checkmark								
Trash & Debris	\square			Trash and debris remared after site visit.					
Seepage	J								
Fencing or Benches N									
Interior Landscaping/Pla	anted Areas:	XNone 🗆 Constructe	ed Wetland/Shallow M	farsh D Naturally Established Vegetation					
Vegetated Conditions									
Trash & Debris									
Floating Material									
Erosion									
Sediment									
Dead Plant									
Aesthetics									
Other									
Notes:	Notes:								
Water Pools: 🗖 Per	manent Pool	(Retention Basin) 🗖 Shal	low Marsh (Detention	Basin) None, Dry (Detention Basin)					
Shoreline Erosion									
Algae									
	1	1							

~ Facility Item	0.К.	Routine	Urgent	Comments
Trash & Debris				
Sediment				
Aesthetics				
Other	·			
Inflows (Describe Types/	/Locations):	1		
Condition of Structure				
Erosion				
Trash and Debris				
Sediment				
Outlet Protection				
Other				
Principal Flow Control S	Structure - R	iser, Intake, etc. (Describe	туре):	
Condition of Structure	~			
Corrosion				
Trash and Debris	<u> </u>			
Sediment	<u> </u>			
Vegetation	-			
Other micro-pool				
Principal Outlet Structu	re - Barrel, (Conduit, etc. :		
Condition of Structure		· · · · · · · · · · · · · · · · · · ·		
Settlement				
Trash & Debris		· ·		
Erosion/Sediment				
Outlet Protection				
Other				
Emergency Spillway (Ov	verflow):	•		
Vegetation				
Lining				
Erosion				
Trash & Debris				
Other				· · · · · · · · · · · · · · · · · · ·
Notes:				
Nuisones Type Candida	ne:			
Mosquito Preeding		I		
A nimel Durrous				· · · · · · · · · · · · · · · · · · ·
Animai Burrows				

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Other		·			·		·
Surrounding Perimeter Cond	litions:						· · · · · · · · · · · ·
Land Uses							
Vegetation							
Trash & Debris							·
Aesthetics							
Access /Maintenance Roads or Paths				•			
Other							

Remarks:

Overall Environmental	Division	Internal Rating:	<

- 9 Buchite Date: 5/1/2007 Signature: <u>C</u> nspector Title: 1

 $SWMProg \verb|BMP|CoInspProg|DetRet.wpd|$

10. Misc. (ex. photos)
Date Record Created: Created By:	WS_BMPNO: Print CC028 Record		MAINTENANCE PLAN	Yes	TRL STRUC DESC	CMP		
WATERSHED BMP ID NO PLAN NO TAX PARCEL PIN NO CONSTRUCTION DATE PROJECT NAME FACILITY LOCATION CITY-STATE CURRENT OWNER OWNER ADDRESS 2	CC 028 SP-135-04 (48-02)(01-02)	PRINTED ON Wednesday, March 10, 201 2:35:08 PM	LAND USE old BMP TYP JCC BMP CODE POINT VALUE	Residential Dry Pond	OTLT BARRL DESC	RCP 30		
				F2 Dry ED with fores	EMERG SPILLWAY	No		
	4820100002 8/6/2006 Williamsburg Landing Parking South of Williamsburg Landing Drive James City County Williamsburg Landing, INC. 5700 Williamsburg Landing		SVC DRAIN AREA acres SERVICE AREA DESCRI IMPERV AREA acres RECV STREAM	7.51 Roads and residential	DESIGN HW ELEV PERM POOL ELEV 2-YR OUTFLOW cfs 10-YR OUTFLOW cfs REC DRAWING	34.07 n/a 1.04 9.45 Yes		
				0.84 CC	CONSTR CERTIF	No		
CITY-STATE-ZIP CODE OWNER PHONE	Williamsburg, VA 23185 (757) 253-2975 Yes		EXT DET-WQ-CTRL WTR QUAL VOL acre-ft CHAN PROT CTRL CHAN PROT VOL acre-ft	No LAST IN	ISP DATE 4/27/2007 In INTERNAL RATING MISC/COMMENTS	spected by:		
EMERG ACTION PLAN	No Poturn to Monu	turn to Manual		The Landing, parking additio No BMP to be upgraded. No		n. Dry pond		
Get Last DMP NO							的脉力	

 Additional Comments:



