



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- STORMW ATER 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: 88017

DATE VERIFIED: December 7, 2021

QUALITY ASSURANCE TECHNICIAN: Charles E. Lovett II

Charles E. Lovett II

LOCATION: WILLIAMSBURG, VIRGINIA

NOTES: CERTIFY & UPLOAD

1. Maintenance Agreement

2. Deeds/Easements/ Agreements/Property Records

3. Construction Certificate



Stormwater Conveyance and Stormwater Management / BMP Facilities Record Drawing and Construction Certification Forms

Standard Forms and Instructions

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Issue Date: February 1, 2001
Revised: July 1, 2014



Stormwater Conveyance and Stormwater Management / BMP Facilities Record Drawing and Construction Certification Forms

Note: In accordance with the Subdivision and Zoning ordinances of the County Code, plans of development have requirements to ensure that at the completion of the project and prior to release of surety, certified record drawings (as-builts) and construction certifications by a registered Professional Engineer, must be provided for constructed stormwater conveyance/drainage system and stormwater management/Best Management Practice (BMP) facilities. In addition, Sections 8-25 and 8-26 of Article II of Chapter 8 of the County Code, require the submission of construction record drawings and construction certifications for permanent stormwater management/BMP facilities and permanent stormwater conveyance systems such as inlets, pipes and channels. In addition, for stormwater management/BMP facilities involving the construction of an impounding structure or dam embankment, certification is required by a professional engineer who performed inspections during construction of the facility.

Section 1 - Site Information:

Project Name: Fire Station No. 4
Structure/BMP Name: Storm Systems and Underground Storage BMP
Project Location: 5312 Olde Towne Road
BMP Location: Parking Lot
County Plan No.: SP-0026-2013 VAHU6 HUC Code: JL31

Project Type: Residential Business Commercial Office Institutional Industrial Public Roadway Other _____
Tax Map/Parcel No.: 3240100027
County BMP ID Code (if known): _____
Zoning District: PL Public Lands (Jamestown District)
Land Use: Fire Station
Site Area (sf or acres): 2.73 acres

Brief Description of Stormwater Conveyance and/or Stormwater Management/BMP Facility:
Site consists of storm pipes collecting runoff and an underground storage system. Storm pipes consist of PVC roof drain and RCP storm drain. Underground storage system consists of 42" RCP pipes and and interior manhole outlet structure with interior weir wall.

Nearest Visible Landmark to SWM/BMP Facility: Fire Station #4 Building

Nearest Vertical Ground Control (if known):
 JCC Geodetic Ground Control USGS Temporary Arbitrary Other

Station Number or Name: 341, 342
Datum or Reference Elevation: _____
Control Description: _____
Control Location from Subject Facility: _____

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

Section 2 – Construction Information

Section 2A - Stormwater Conveyance System Construction Information (Pipes, Channels, etc.):

Pre-Construction Meeting Held: Yes No Unknown
Approx. Construction Start Date for System: 12/2013
System Milestone Inspection(s) by County Representative during Construction: Yes No Unknown
Name of Site Work Contractor Who Constructed System: JSG Corporation
Name of Professional Firm Who Monitored Construction: ECS Mid-Atlantic LLC
Date of Completion of System: 12/2014
Date of Record Drawing/Construction Certification Submittal: 8/3/16

Section 2B - 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: 12/2013
Facility Monitored by County Representative during Construction: Yes No Unknown
Name of Site Work Contractor Who Constructed Facility: JSG Corporation
Name of Professional Firm Who Monitored Construction: ECS Mid-Atlantic LLC
Date of Completion for SWM/BMP Facility: 1/2014
Date of Record Drawing/Construction Certification Submittal: 8/3/16

(Note: Record drawings and construction certifications are required within thirty (30) days of the completion of the stormwater conveyance system and/or stormwater management/ BMP facility construction. Record drawings and construction certifications must be reviewed and approved by the VESCP/VSMP authority prior to final inspection, acceptance, and surety release or reduction.)

Section 3 - Owner/Designer/Contractor Information:

Owner/Developer: *(Note: Site owner, operator, applicant or permittee responsible for development of the project.)*
Name: James City County
Mailing Address: 113 Tewning Road
Williamsburg, VA 23188
Business Phone: 757-259-4117 Fax: 757-258-1528
Email: Barry.Moses@jamescitycountyva.gov
Contact Person: Barry F. Moses, P.E. Title: Capital Projects Coordinator

Design Professional: *(Note: Professional Engineer, Certified Land Surveyor or other qualified professional responsible for the design and preparation of plans and specifications for the stormwater conveyance system and/or stormwater management/BMP facility.)*

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Road, Williamsburg, VA 23188
Business Phone/Fax: 757-253-0040
Email: __graham.corson@aesva.com
Name of Responsible Plan Preparer: Graham Corson, P.E.
Title: Project Manager
Plan Name: Site Plan for Fire Station No. 4
Firm's Project No. W10119-E-10
Plan/Revision Date: September 16, 2013 (Approval Date
Plan Sheet No.'s Applicable: R-01 / R-05 / _____ / _____ / _____ / _____ /

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

Site/Utility Contractor: *(Note: Contractor directly responsible for construction of the stormwater conveyance system and/or stormwater management/BMP facility.)*

Firm Name: JSG Corporation

Mailing Address: P.O. Box 646

Lightfoot, Virginia 23090

Business Phone/Fax: 757-645-4870

Email: michael.mullins@jsgcorp.com

Contact Person: Michael Mullins

Site Foreman/Supervisor: Mike Hubbard

Specialty Subcontractors and Purpose: _____

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 drawing, for the stormwater conveyance system for the project including any stormwater management/BMP facilities. A Registered Professional Engineer is responsible for the inspection, monitoring, and certification of stormwater conveyance systems and/or stormwater management / BMP facilities during its construction. See next page for the "simple" County provided certification form that can be used by qualified professionals to provide this information.)*



STANDARD CERTIFICATION FORM

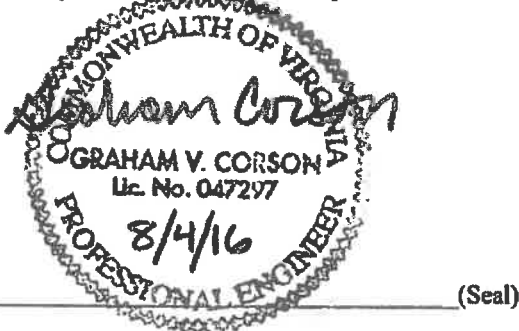
Record Drawing Certification

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Road
Williamsburg, VA 23188
Business Phone: 757-253-0040
Fax: _____
Name: Graham Corson, P.E.
Title: Project Manager
Signature: Graham Corson
Date: 8/4/16

I hereby certify to the best of my knowledge and belief that this record drawing represents the actual condition of the,

- Stormwater conveyance system
- Stormwater management / BMP facility

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



Virginia Registered Professional Engineer or Certified Land Surveyor

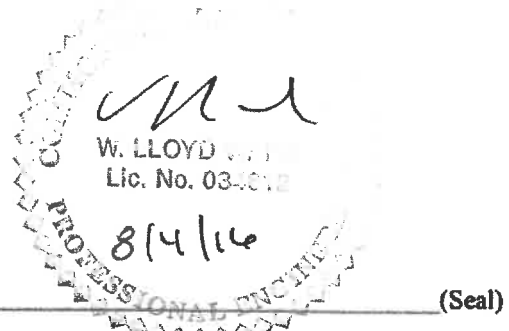
Construction Certification

Firm Name: ECS MID-ATLANTIC, LLC
Mailing Address: 1643 MEKUMAC TRAIL
WILLIAMSBURG, VA 23187
Business Phone: 757-229-6677
Fax: 757-229-9978
Name: W. LLOYD WARD, P.E.
Title: VP / SURVEY MANAGER
Signature: _____
Date: 08/04/16

I hereby certify to the best of my knowledge and belief that this,

- Stormwater conveyance system
- 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 here.



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.
- 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, geotextiles, 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 VESCP/VSMP authority 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 VESCP/VSMP authority 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 VESCP/VSMP authority.
- 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 (Temporary Sediment Basin & BMP) - 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.)

- In accordance with Sections 8-25 and 8-27 of the Chapter 8 of the County Code, an *internal closed-circuit television (CCTV)* post installation inspection, performed by the operator, is required as part of the asbuilt and construction certification process. CCTV inspections shall follow standards and specifications developed by the VSMP authority administrator.
- Record Drawings shall provide, at a minimum, all information as shown within these requirements, in accordance with standard industry practice, and in accordance with applicable **RECORD DRAWING CHECKLISTS** specific to the type of SWM/BMP facility being constructed. Other additional record data may be formally requested by the VESCP/VSMP authority. *(Note: Refer to the Virginia BMP Clearinghouse website and the current edition of the Virginia Stormwater Management Handbook for representative record drawing and construction certification checklists for the specific type of stormwater management/BMP facility being used. If none are available, the VSMP authority can provide this information if specifically requested.)*
- 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.

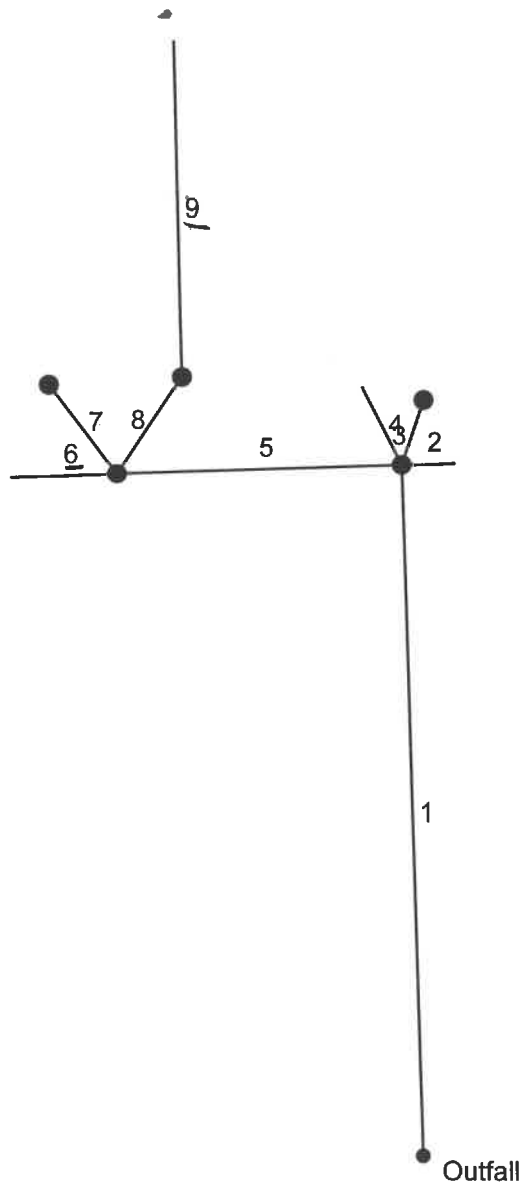
- ☑ Submission Requirements - Initial and subsequent submissions for review shall consist of a minimum of one (1) blue/black line set for record drawings and one copy of the construction certification documents with appropriate transmittal. Under certain circumstances, it is understood that the record 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's BMP database and GIS system, it is requested that the record drawings also be submitted to the VESCP/VSMP authority on a CD-ROM in an acceptable electronic file format such as *.pdf, *.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.

4. Record Drawings (As Built)

5. Construction Drawings

6. Design Calculations

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2012 Plan



Storm Sewer Tabulation

Station		Len (ft)	Drng Area		Rnoff coeff (C)	Area x C		Tc		Rain (l) (in/hr)	Total flow (cfs)	Cap full (cfs)	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr (ac)	Total (ac)		Incr	Total	Inlet (min)	Syst (min)					Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	160.000	0.03	1.67	0.85	0.03	1.11	5.0	10.2	6.0	7.01	8.24	5.25	18	0.52	102.00	102.84	103.01	103.96	0.00	105.75	1-1 to Outfall
2	1	12.000	0.54	0.54	0.70	0.38	0.38	10.0	10.0	6.1	2.29	4.95	2.22	15	0.50	102.95	103.01	103.96	103.96	105.75	103.01	1-2 to 1-1
3	1	16.000	0.43	0.43	0.65	0.28	0.28	10.0	10.0	6.1	1.69	4.95	1.67	15	0.50	102.95	103.03	103.96	103.96	105.75	105.07	1-3 to 1-1
4	1	20.000	0.16	0.16	0.65	0.10	0.10	5.0	5.0	7.5	0.78	11.60	1.47	15	2.75	102.95	103.50	103.96	103.91	105.75	103.50	1-4 to 1-1
5	1	65.000	0.00	0.51	0.00	0.00	0.32	0.0	6.8	6.9	2.55	6.07	3.27	15	0.75	102.99	103.48	103.96	104.12	105.75	105.65	1-5 to 1-1
6	5	24.000	0.25	0.25	0.65	0.16	0.16	5.0	5.0	7.5	1.22	17.61	2.53	15	6.33	103.48	105.00	104.12	105.44	105.65	105.00	1-6 to 1-5
7	5	26.000	0.00	0.00	0.00	0.00	0.00	5.0	5.0	0.0	0.36	4.95	0.67	15	0.50	103.48	103.61	104.12	104.12	105.65	109.25	1-9 to 1-5
8	5	27.000	0.00	0.26	0.00	0.00	0.16	0.0	6.3	7.0	1.10	7.00	2.39	15	1.00	103.48	103.75	104.12	104.17	105.65	107.00	1-7 to 1-5
9	8	77.000	0.26	0.26	0.60	0.16	0.16	5.0	5.0	7.5	1.17	11.69	3.17	15	2.79	103.75	105.90	104.17	106.33	107.00	105.90	1-8 to 1-7

Project File: W10119-E-10_Storm System #1.stm

Number of lines: 9

Run Date: 8/12/2013

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

7. Reports

8. Correspondence

9. Inspections

10. Permitting

11. Miscellaneous

(ex. photos)

12. Project Development Documents