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: **WC098**

DATE VERIFIED: **April 12, 2012**

QUALITY ASSURANCE TECHNICIAN: **Leah Hardenbergh**

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA

Stormwater Division

MEMORANDUM

DATE: 3/7/2012

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: WC098

PIN: 1210100044

Subdivision, Tract, or Business Owner: Avid Realty LLC

Name (if known): Avid Medical

Property Description: Parcel B Section B Stonehouse Commerce Park

Site Address: 9000 Westmont Drive

(For internal use only) ***Box*** *13* ***Drawer*** *8*

Agreements (in file as of scan date): ***Y***

Book or Document #: *980003355* *Page 712*

080001525

Return to:
County Attorney's Office
James City County
101-C Mounts Bay Road
Williamsburg, VA 23185

COUNTY OF JAMES CITY, VIRGINIA

DECLARATION OF COVENANTS
INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

THIS DECLARATION, made this 17TH day of DECEMBER, 20 07, between AVID REALTY LLC, and all successors in interest, ("COVENANTOR(S)"), owner(s) of the following property:

Parcel Identification Number: 1210100044 1210100042
Legal Description: PARCEL B - SECTION A & B STONEHOUSE COMMERCE PARK
Project or Subdivision Name: AVID MEDICAL & ESGI EXPANSION
Document No. 98 000 3355
OR Deed Book _____, Page No. _____,
and the County of James City, Virginia ("COUNTY.")

WITNESSETH:

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

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

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

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

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

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

Instrument # 080001525

Recorded on Jan. 14, 2008

6. The COVENANTOR(S) shall indemnify and save the COUNTY harmless from any and all claims for damages to persons or property arising from the installation, construction, maintenance, repair, operation or use of the SYSTEM.

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

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

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

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

COVENANTOR(S)

Signature

Michael Sahady CEO

Print Name and Title

ACKNOWLEDGMENT

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

I hereby certify that on this 17 day of December, 2007, before the subscribed, a Notary Public for the Commonwealth of Virginia, personally appeared Michael Sahady and did acknowledge the foregoing instrument to be his/her A
ct.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 17th day of DECEMBER, 2007.

[SEAL]

Rhonda K

Notary Public

Notary Registration Number: 207500

My Commission expires: 12-31-09

COVENANTOR(S)

_____
Signature

_____
Print Name and Title

ACKNOWLEDGMENT

COMMONWEALTH OF VIRGINIA
CITY/COUNTY OF _____, to wit:

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

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this _____ day of _____, 20____.

[SEAL]

_____
Notary Public

Notary Registration Number: _____

My Commission expires: _____

Approved as to form:

Adam Kinsman
County Attorney

This Declaration of Covenants prepared by:

Name: _____

Print Name: SCOTT OSEN

Title: TREASURER - FJORD CON. INC.

Address: 324 REDOUBT RD.
YORKTOWN, VA. 23692

Phone Number: 872.0007

(drainage1.pre)

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

Project Name: AVID MEDICAL EXPANSION
County Plan No.: SP-094-06
Stormwater Management Facility: FILTERRA BIORETENTION FACILITIES
BMP Phase #: ☐ I ☐ II ☐ III
☑ Information Package Received. Date/By: 11/16/09 MPM
☑ Completeness Check:
- ☑ Record Drawing Date/By: 11/13/09 - R. MANN
- ☑ Construction Certification Date/By: 11/13/09 - R. COSBY
- ☑ RD/CC Standard Forms (Required for all BMPs after Feb 1st 2001Only)
- ☑ Insp/Maint Agreement # / Date: 980003755/12/17/07
- ☑ BMP Maintenance Plan Location: APPROVED PLAN SHEET 9.2 (INCLUDED IN AS-BUILT FILE)
- ☐ Other:

☑ Standard E&SC Note on Approved Plan Requiring RD/CC or County comment in plan review
- ☑ Yes ☐ No Location: PLAN REVIEW NOTES

☑ Assign **County BMP ID Code #**: Code: WC097
☑ Preliminary Input/Log into Division's "As-Built Tracking Log"
☐ Add Location to GIS Map. Obtain basic site information (GPIN, Owner, Address, etc.)
☑ Preliminary Log into Access Database (BMP ID #, Plan No., GPIN, Project Name, etc.)
☐ Active Project File Review (correspondence, H&H, design computations, etc.).
☐ Initial As-Built File setup (File label, folder, copy plan/details/design information, etc.).
☑ Inspector Check of RD/CC (forward to Inspector using transmittal for cursory review).
☑ Pre-Inspection Drawing Review of Approved Plan (Quick look prior to Field Inspection).
☑ Final Inspection (FI) Performed Date: 11/17/09
☑ Record Drawing (RD) Review Date: 11/17/09 - WAC
☑ Construction Certification (CC) Review Date: 11/17/09 - WAC
☑ Actions:
- ☑ No comments.
- ☐ Comments. Letter Forwarded. Date:
- ☐ Record Drawing (RD)
- ☐ Construction Certification (CC)
- ☐ Construction-Related (CR)
- ☐ Site Issues (SI)
- ☐ Other :

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

Final Sign-Off

Inspector: _____ Date: _____

Chief Engineer: _____ Date: _____

*** See separate checklist, if needed.

Environmental Division

NOV 13 2009

RECEIVED

James City County, Virginia
Environmental Division

Stormwater Management / BMP Facilities
Record Drawing and Construction Certification Forms

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

Section 1 – Site Information:

Project Name: Avid Medical Expansion
Structure/BMP Name: Filterra Units
Project Location: Stonehouse Commerce Park (Avid Medical)
BMP Location: Parking Lot
County Plan No.: SP - 0094 - 2006

Project Type:
- ☐ Residential
- ☐ Commercial
- ☐ Institutional
- ☐ Public
- ☐ Other
- ☐ Business
- ☐ Office
- ☒ Industrial
- ☐ Roadway

Tax Map/Parcel No.: (12-1)(1-44)
BMP ID Code (if known):
Zoning District: MU
Land Use:
Site Area (sf or acres): 4.9 Ac.

Brief Description of Stormwater Management/BMP Facility: Structure F1 and F2 are Filterra (Manufactured Tree Box Filter) 6'x12' boxes

Nearest Visible Landmark to SWM/BMP Facility: Avid Medical Building

Nearest Vertical Ground Control (if known):
☒ JCC Geodetic Ground Control ☐ USGS ☐ Temporary ☐ Arbitrary ☐ Other
Station Number or Name: JCC Monuments 303, 340, 349
Datum or Reference Elevation: NGVD29
Control Description:
Control Location from Subject Facility: _____

Section 2 – Stormwater Management / BMP Facility Construction Information:

PreConstruction Meeting Held for Construction of SWM/BMP Facility: ☐ Yes ☒ No ☐ Unknown
Approx. Construction Start Date for SWM/BMP Facility: October 2007
Facility Monitored by County Representative during Construction: ☐ Yes ☒ No ☐ Unknown
Name of Site Work Contractor Who Constructed Facility: Fjord Construction
Name of Professional Firm Who Routinely Monitored Construction: AES Consulting Engineers
Date of Completion for SWM/BMP Facility: May 2009
Date of Record Drawing/Construction Certification Submittal: 11/13/2009

(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: Avid Reality LLC
Mailing Address: 9000 Westmont Drive
Toano, VA 23168
Business Phone: (757) 566-3510 Fax:(757) 566-9757
Contact Person: Michael Sahady Title:

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

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Rd., Suite 1
Williamsburg, VA 23188
Business Phone: (757) 253-0040
Fax: (757) 220-8994
Responsible Plan Preparer: Robert Cosby III, P.E.
Title: Project Manager
Plan Name: Avid Medical & ESGI Expansion
Firm's Project No. 8446-04
Plan Date: 06/28/2007
Sheet No.'s Applicable to SWM/BMP Facility: 7 / 9.2 / / / /

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

Name: Fjord Construction
Mailing Address: 324 Redoubt Road
Yorktown, VA 23692
Business Phone: (757) 872-0007
Fax: (757) 872-4464
Contact Person: Scott Olsen
Site Foreman/Supervisor: John Sweeny
Specialty Subcontractors & Purpose (for BMP Construction Only):
Hudgins Contracting Corp.

Section 4 – Professional Certifications:

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

Record Drawing and Construction Certifications for Stormwater Management / BMP Facilities

Record Drawing Certification

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Road, Suite 1
Williamsburg, VA 23188
Business Phone: (757) 253-0040
Fax: (757) 220-8994

Name: Robert S. Mann, L.S.
Title: Project Manager

Signature: _____
Date: _____

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.

COMMONWEALTH OF VIRGINIA
ROBERT D. MANN
Lic. No. 002509
11/13/09
LAND SURVEYOR

_____ (Seal)

Virginia Registered Professional Engineer
Or Certified Land Surveyor

Construction Certification

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Rd., Suite 1
Williamsburg, VA 23188
Business Phone: (757) 253-0040
Fax: (757) 220-8994

Name: Robert Cosby III, P.E.
Title: Project Manager

Signature: _____
Date: 11/13/09

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.

COMMONWEALTH OF VIRGINIA
ROBERT E. COSBY III
Lic. No. 035664
11/13/09
PROFESSIONAL ENGINEER

_____ (Seal)

Virginia Registered
Professional Engineer

James City County, Virginia
Environmental Division

Stormwater Management / BMP Facilities
Record Drawing and Construction Certification Forms

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

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Record Drawing and Construction Certifications for Stormwater Management / BMP Facilities

Record Drawing Certification

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Road, Suite 1
Williamsburg, VA 23188
Business Phone: (757) 253-0040
Fax: (757) 220-8994

Name: Robert S. Mann, L.S.
Title: Project Manager

Signature: _____
Date: _____

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.

_____ (Seal)

Virginia Registered Professional Engineer
Or Certified Land Surveyor

Construction Certification

Firm Name: AES Consulting Engineers
Mailing Address: 5248 Olde Towne Rd., Suite 1
Williamsburg, VA 23188
Business Phone: (757) 253-0040
Fax: (757) 220-8994

Name: Robert Cosby III, P.E.
Title: Project Manager

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

STORMWATER MANAGEMENT / BMP FACILITIES
RECORD DRAWING CHECKLIST

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

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

XX 1. All constructed facilities meet approved design plans, unless otherwise shown. Record information or deviations from approved design plan shown in clearly annotated format and/or boxed beside design values.

XX 2. Elevations to the nearest 0.1' unless higher accuracy is needed to show positive drainage.

XX 3. All plan sheets labeled with "RECORD DRAWING" in large text in lower right hand corner (Approved County Plan Number and BMP ID Code can be included if known).

XX 4. All plans sheet revision blocks modified to indicate date and record drawing status.

XX 5. All plan sheets have certification statements and certifying professional's signature and seal.

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

XX 1. All requirements of Section I (Methods and Presentation) apply to this section.

XX 2. Plan Views: Show general location, arrangement and dimensions. Location and alignment shall generally match approved design plans.

N/A 3. Profile or elevations along top or berm of the facility. At a minimum, elevations are required at each end, at intervals not to exceed 50 feet and where low spots may be present. Top of embankment or berm elevations must be no less than design elevation plus any settlement allowances.

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

N/A 5. Show length, width and depth of facility or grading, contours or spot elevations as required to verify permanent pool and design storage volumes were met or were reasonably close to the approved design. Evaluation of as-built grading, contours, spot elevations, or cross-sections, may be necessary by the professional to ensure approved design configurations, depths and volumes were closely maintained. If grading or elevations are significantly different from the approved plan, the Environmental Division shall be contacted immediately to determine whether the variation is acceptable or whether further evidence will be required. Facilities which do not closely resemble approved plan grades, elevations or configurations may require regrading by the Contractor; check volumetric computations; and/or a check hydraulic routing to ensure approved design water surface elevations, discharges or freeboard were closely maintained.

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

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

XX 8. Elevation of the principal spillway crest or outlet crest of the structure.

N/A	9.	Primary control structure (riser) diameter or dimensions, height, type of material and base size. Indicate provisions for access that are present such as steps, ladders, etc.
N/A	10.	Dimensions, locations and elevations of outlet orifices, weirs, slots and drains.
N/A	11.	Type and size of anti-vortex and trash rack device. Height, diameter, dimensions, bar spacings (if applicable) and elevations relative to the principal spillway crest. Indicate if lockable hatch is present or not.
N/A	12.	Type, location, size and number of anti-seep collars or documentation of other methods utilized for seepage control. **May need to obtain this information during construction.**
N/A	13.	Top of impervious core embankment, core trench limits and elevation of cut-off trench bottom. **May need to obtain this information during construction.**
N/A	14.	Elevation of the principal spillway barrel (outlet pipe) inlet and outlet invert.
N/A	15.	Outlet barrel diameter, length, slope, type and thickness class of material and type of flared end sections, headwall or endwall.
N/A	16.	Outfall protection dimension, type and depth of rock and if underlain filter fabric is present.
N/A	17.	BMP interior and periphery landscaping zones conform with arrangements and requirements of the approved design plan.
XX	18.	Maintenance plan taken from approved design plan transposed onto record drawing set.
N/A	19.	Fencing location and type, if applicable to facility.
N/A	20.	BMP vicinity properly cleaned of stockpiles and construction debris.
N/A	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: XX Acceptable N/A Not Applicable Inc Incomplete)

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

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

XX SD1. All requirements of Section II, Minimum Standards, apply to Storm Drainage Systems.

XX SD2. Horizontal location of all pipe and structures relative to the SWM/BMP facility.

XX SD3. Type, top elevation and invert elevation of all access type structures (inlets, manholes, etc.).

XX SD4. Material type, size or diameter, class, invert elevations, lengths and slopes for all pipe segments.

XX SD5. Class, length, width and depth of riprap and outlet protections or dimensions of special energy dissipation structures.

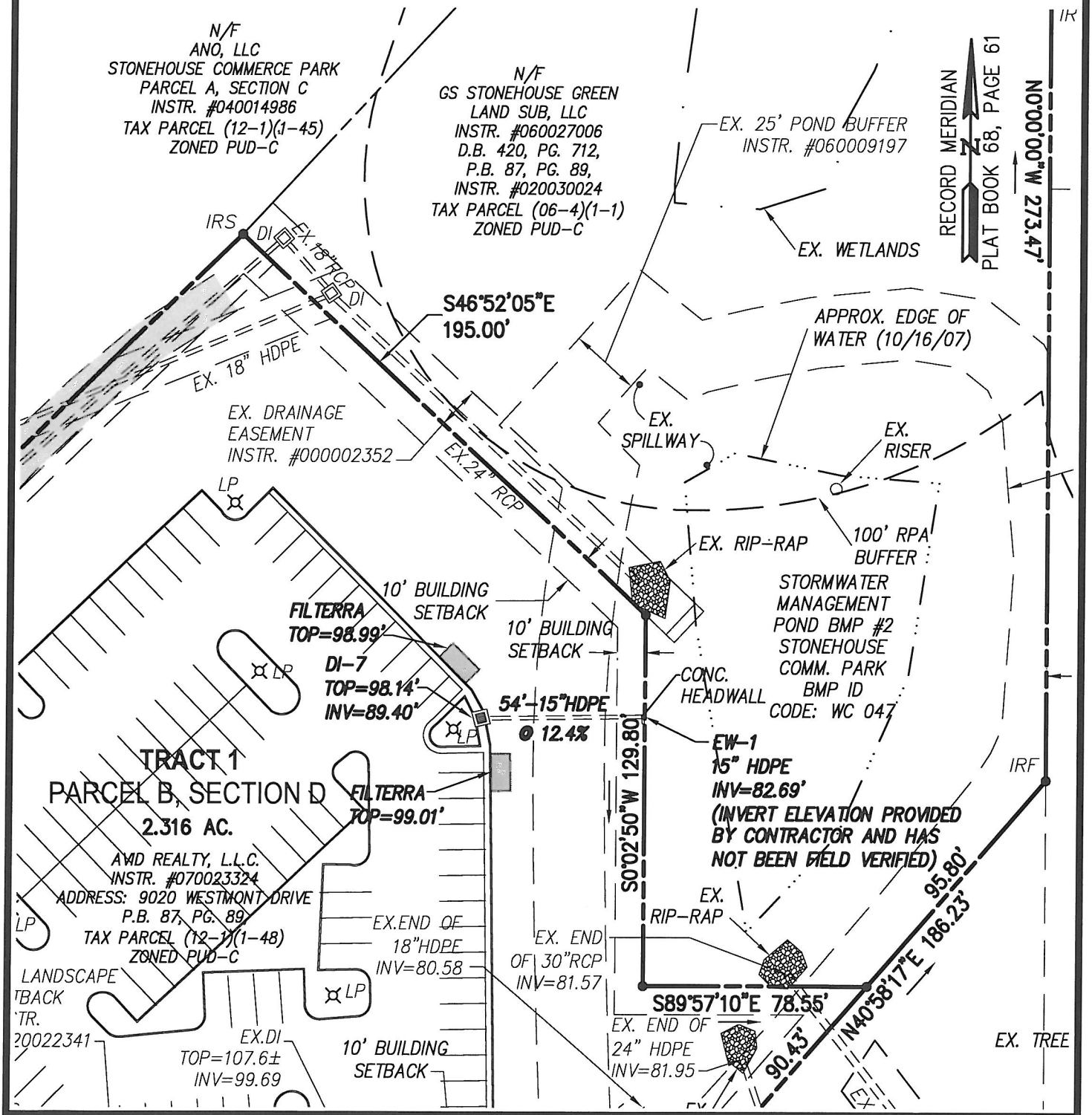
XII. Other Systems

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

XX O1. All requirements of Section II, Minimum Standards, apply to this section.

XX O2. Certification criteria to be determined on a case-by-case basis by the Environmental Division specific to the proposed SWM/BMP facility.

MAINTENANCE PER MANUFACTURERS RECOMMENDATIONS



BMP RECORD DRAWING

AVID MEDICAL EXPANSION

JCC# SP-94-06

Drawn By: AES	Scale: 1"=50'	Date: 11/10/09	Job No: 8446-04

CONSULTING ENGINEERS
WILLIAMSBURG • RICHMOND • GLOUCESTER • FREDERICKSBURG

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

FILTERRA MAINTENANCE PLAN

THE FILTERRAS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

FILTERRAS SHALL NOT ACCEPT ANY RUNOFF UNTIL ALL AREA DRAINING TO IT HAS BEEN STABILIZED. THE FILTERRA WILL BE FITTED WITH A BOARD THAT WILL KEEP THE FINES FROM AN UNSTABILIZED DRAINAGE AREA FROM ENTERING THE FILTERRA STRUCTURE.

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

1. REMOVING TRASH, DEBRIS, AND SEDIMENT: THE BEST WAY TO REMOVE SEDIMENT IS TO PREVENT IT FROM BEING THERE. DO NOT ALLOW AREAS OF SOIL TO BE EXPOSED TO RAIN; PLANT GRASS OR PROVIDE OTHER GROUND COVER. DURING WINTER, KEEP APPLICATION OF SUCH THINGS AS SAND AND CINDERS TO A MINIMUM. LITTER AND SEDIMENT DEPOSITS SHOULD BE REMOVED, PREFFERABLY BEFORE THEY GET TO THE FILTER STRIP. IF SEDIMENT DEPOSITS IN THE FILTER STRIP CAUSE WATER TO POND ON THE PAVEMENT, REMOVE THE SEDIMENT AND THE GRASS. REPLACE THE GRASS WITH TALL FESCUE SOD OR APPLY LIME FERTILIZER, SEED AND MULCH, AND INSTALL A TEMPORARY SILT FENCE ALONG THE EDGE OF THE TRENCH. COLLECT TRASH AND LITTER ON A DAILY BASIS.

2. SEDIMENT DISPOSAL: SEDIMENT DISPOSAL SHOULD BE IN ACCORDANCE WITH CURRENT PROCEDURES FOR DISPOSAL OF SEDIMENT. WHERE DEEMED NECESSARY OR DESIRABLE, THE SEDIMENT WILL BE TESTED FOR POLLUTANTS BEFORE FINAL DISPOSAL.

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

4. THE FACILITY SHALL NOT BE MODIFIED IN ANY WAY WITHOUT PRIOR CONSENT/APPROVAL OF THE COUNTY.

SNOUT MAINTENANCE PLAN

SNOUTS TO BE INSTALLED ON STRUCTURES 1A, 4, 6 AND 14. THE SNOUTS SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

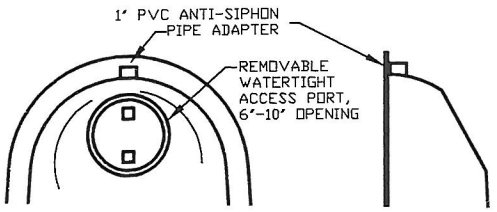
NORMAL MAINTENANCE CONSISTS OF ROUTINE INSPECTION AND RINSING WITH A HOSE OR PRESSURE WASHER DURING THE CLEANING SEQUENCE OF THE CATCH BASIN AND FLUSHING THE ANTI-SIPHON VENT WITH WATER OR AIR TO VERIFY THAT IT IS CLEAR.

EXCESS SEDIMENT, TRASH, & DEBRIS TO BE REMOVED FROM THE BOTTOM OF THE CATCH BASIN ON AN AS NEEDED BASIS.

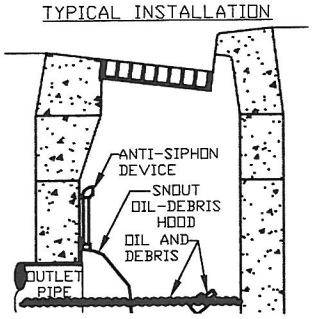
No.	DATE	REVISION / COMMENT / NOTE	REVISED BY	REVIEWED BY
4	2/12/08	SITE PLAN AMMENDMENT #1	REC	REC
3	6/28/07	SIGNATURE SET	TDW	BWS
2	12/15/06	3rd SUBMITTAL – ADDRESSED COUNTY COMMENTS	TDW	BWS
1	10/31/06	2nd SUBMITTAL – ADDRESSED COUNTY COMMENTS	TDW	BWS

COMMONWEALTH OF VIRGINIA
ROBERT E. COSBY III
Lic. No. 35664
2/12/08
PROFESSIONAL ENGINEER

CONFIGURATION DETAIL



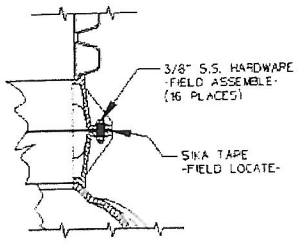
TYPICAL INSTALLATION



Suite 1
3188

GRADE MUST SLOPE AWAY FROM STATION

2014-160
NO BAFFLE



DETAIL, FIELD JOINT
SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS

BALLAST REQUIREMENTS

A CONCRETE ANCHOR IS REQUIRED ON ALL MODEL 2014-160 STATIONS

SPECIFIC CONCRETE DIMENSIONS ARE REQUIRED TO ACHIEVE NECESSARY BALLAST EFFECT

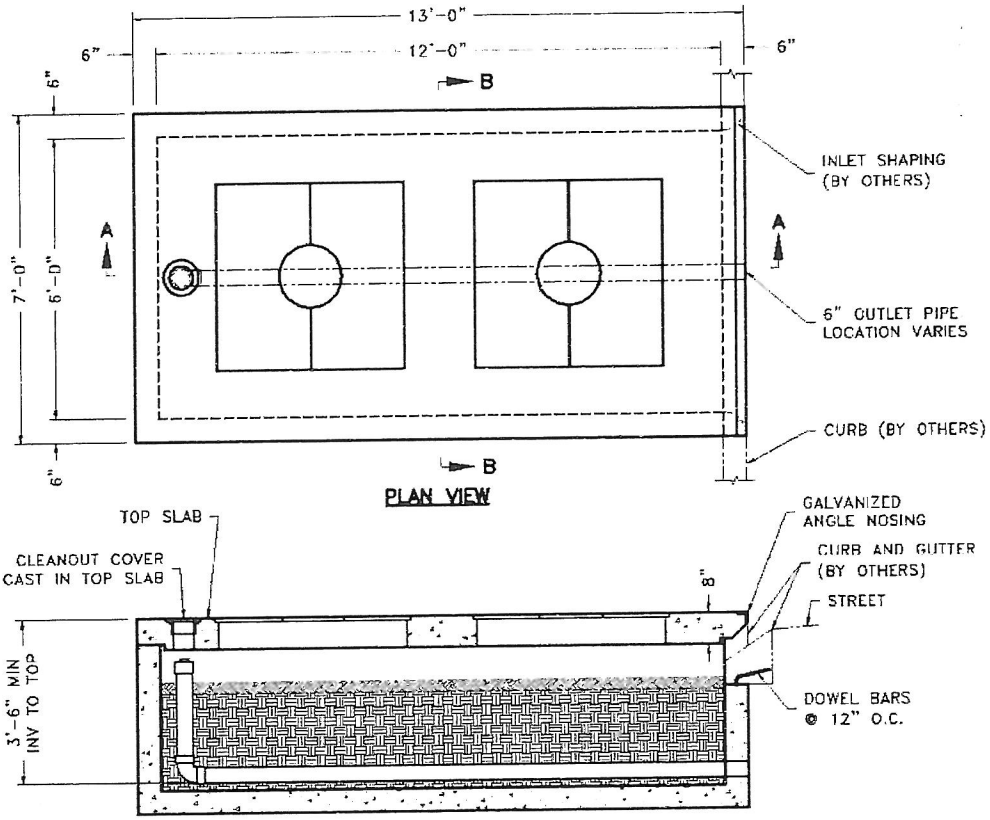
SEE INSTALLATION INSTRUCTIONS FOR BALLAST DETAILS

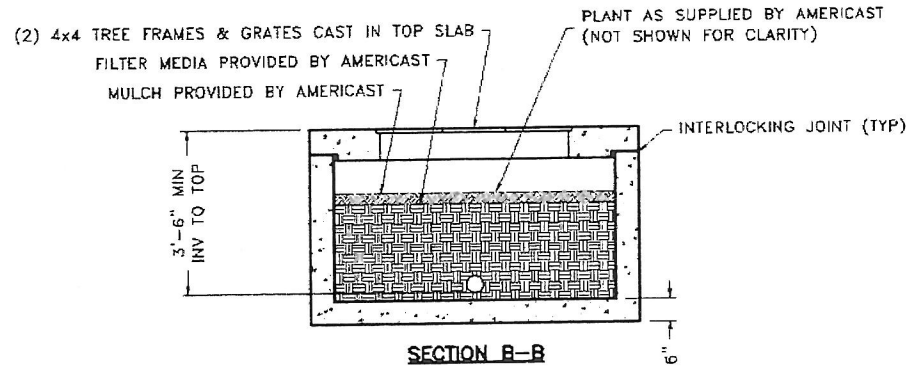
SGS	CAH	3-25-03	-	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE

e one SEWER SYSTEMS

MODEL 2014-160, NO BAFFLE

PA1337P15





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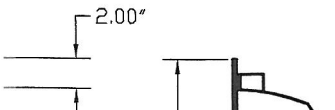
DATE: 06-27-03 | DWG: FT6X12-1

PRECAST 12'-0 x 6'-0
FILTERRA™ INLET
WITH 6'-0" THROAT

filterra™
US PAT 6,277,274 AND 6,569,321

REMOVABLE WATERTIGHT ACCESS PORT, 10" OPENING



1" ANTI-SIPHON VENT ADAPTER

10" WATERTIGHT ACCESS PORT

Avid Medical & ESGI Expansion

James City County Environmental

December 15, 2006

DEC 2006
RECEIVED
PLANNING DEPARTMENT

SP-94-06
3RD SUBMISSION

Prepared by:

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

CONSULTING ENGINEERS
Williamsburg (757) 253-0040
Gloucester (804) 693-4450
Richmond (804) 330-8040

Project	Avid
Project No.	8446-04
Subject	Sediment Trap # 1
Sheet No.	1 Of 1
Calculated By	KCR Date 12/1/06

Drainage Area to Sediment Trap = 2.43 Acres ✓

Required Wet Storage = 67 cy/acre * (Drainage Area) = 163 cubic yards, or 4,396 cubic feet

Required Dry Storage = 67 cy/acre * (Drainage Area) = 163 cubic yards, or 4,396 cubic feet

Determine Volume of Sediment Trap by Contour:

Elevation	Depth	Area (sq. ft.)	Volume (cu. ft.)	Volume (cu. yd.)	Sum Volume (cu. ft.)	Sum Volume (cu. yd.)
98	0	800	0	0	0	0
99	1	1196	998	37	998	37
100	1	1664	1430	53	2428	90
101	1	2204	1934	72	4362	162
102	1	2816	2510	93	6872	255
103	1	3500	3158	117	10030	371
103.6	0.6	3944.96	2233.488	83	12263	454

Width of Aggregate Outlet Weir = 6 ft./acre & (Drainage Area) = **14.58** feet ✓

Elevation of Wet Storage Volume = **101.01** ✓

Elevation of Dry Storage Volume = **102.61**

Elevation of accumulated sediment when sediment removed is required (1/2 wet storage volume) = **99.84**

October 2, 2006

Mr. Scott Thomas
Environmental Division Director
James City County
P.O. Box 8784, Building E
Williamsburg, Virginia 23187

RE: Avid Medical and ESGI Expansion
AES Project No. 8446-04

Dear Mr. Thomas:

AES Consulting Engineers, on behalf of Avid Realty LLC, respectfully requests an exception from the Director of the Environmental Division to the James City County restrictions of encroachment within a 25' pond setback/buffer. Along the western side of the pond grading will occur within the 25' setback/buffer for the construction of the additional parking area. All of the proposed development will remain outside of the 100-year water elevation. At the conclusion of construction the disturbed area will be returned to the pre-developed state. During construction the pond will be protected and the slopes reestablished through the following measures.

Super silt fence will be installed along the limits of construction adjacent to the pond. All disturbed slopes along the pond will be stabilized through the use of soil stabilization blankets and matting. A temporary slope drain will also be installed at the top of the slope to prevent erosion of newly graded areas.

We appreciate your help with this matter and hope you will not hesitate to call if you have any further questions.

Sincerely,

AES Consulting Engineers

Kevin Reichert
Project Engineer

R:\Jobs\9048\09-Condos-79-LaGrange\Admin\Correspondence\Letters\904809.steep slopes waiver.doc

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	116.8	0.00	6.89	0.90	0.00	5.71	5.0	12.2	5.6	32.21	93.10	10.36	24	14.44	98.81	81.95	100.71	85.50	108.80	83.95	E-2 TO E-1
2	1	12.1	0.56	6.06	0.76	0.43	5.00	5.0	12.2	5.6	28.21	32.25	8.98	24	1.73	99.02	98.81	101.31	101.15	109.00	108.80	1A TO E-2
3	2	155.2	0.56	2.51	0.76	0.43	1.88	5.0	11.5	5.8	10.87	17.26	3.46	24	0.50	99.79	99.02	103.82	103.51	110.58	109.00	1 TO 1A
4	3	422.2	0.28	1.95	0.78	0.22	1.46	5.0	9.0	6.2	9.10	17.32	2.90	24	0.50	101.90	99.79	104.70	104.12	108.90	110.58	2 TO 1
5	4	122.2	0.81	1.67	0.82	0.66	1.24	5.0	8.2	6.4	7.96	17.17	2.53	24	0.49	102.50	101.90	104.95	104.82	105.83	108.90	3 TO 2
6	5	204.7	0.28	0.86	0.67	0.19	0.58	5.0	5.7	7.0	4.06	17.13	1.35	24	0.49	103.50	102.50	105.22	105.17	106.30	105.83	E-5 TO 3
7	6	135.6	0.58	0.58	0.67	0.39	0.39	5.0	5.0	7.2	2.81	10.41	3.24	15	2.21	106.50	103.50	107.17	105.23	111.43	106.30	E-6 TO E-5
8	1	50.3	0.83	0.83	0.86	0.71	0.71	5.0	5.0	7.2	5.17	20.00	4.81	15	8.18	102.92	98.81	103.83	102.13	107.60	108.80	E-7 TO E-2
9	2	58.3	2.99	2.99	0.90	2.69	2.69	5.0	5.0	7.2	19.48	33.50	6.20	24	1.87	100.00	98.91	103.47	103.10	109.90	109.00	13 TO E-2

Project File: storm drain layout 4-14-06.stm | Number of lines: 9 | Run Date: 09-27-2006

NOTES: Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = 10 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	116.8	0.00	6.89	0.90	0.00	5.71	5.0	10.5	8.2	47.10	93.10	15.01	24	14.44	98.81	81.95	100.79	88.82	108.80	83.95	E-2 TO E-1
2	1	12.1	0.56	6.06	0.76	0.43	5.00	5.0	10.5	8.2	41.23	32.25	13.13	24	1.73	99.02	98.81	101.96	101.62	109.00	108.80	1A TO E-2
3	2	155.2	0.56	2.51	0.76	0.43	1.88	5.0	10.0	8.4	15.77	17.26	5.02	24	0.50	99.79	99.02	107.30	106.66	110.58	109.00	1 TO 1A
4	3	422.2	0.28	1.95	0.78	0.22	1.46	5.0	8.2	8.8	12.87	17.32	4.10	24	0.50	101.90	99.79	109.11	107.95	108.90	110.58	2 TO 1
5	4	122.2	0.81	1.67	0.82	0.66	1.24	5.0	7.7	9.0	11.14	17.17	3.55	24	0.49	102.50	101.90	109.61	109.35	105.83	108.90	3 TO 2
6	5	204.7	0.28	0.86	0.67	0.19	0.58	5.0	5.7	9.6	5.52	17.13	1.76	24	0.49	103.50	102.50	110.14	110.04	106.30	105.83	E-5 TO 3
7	6	135.6	0.58	0.58	0.67	0.39	0.39	5.0	5.0	9.8	3.82	10.41	3.11	15	2.21	106.50	103.50	110.57	110.17	111.43	106.30	E-6 TO E-5
8	1	50.3	0.83	0.83	0.86	0.71	0.71	5.0	5.0	9.8	7.02	20.00	5.72	15	8.18	102.92	98.81	104.29	103.79	107.60	108.80	E-7 TO E-2
9	2	58.3	2.99	2.99	0.90	2.69	2.69	5.0	5.0	9.8	26.46	33.50	8.42	24	1.87	100.00	98.91	106.63	105.95	109.90	109.00	13 TO E-2

Project File: storm drain layout 4-14-06.stm | Number of lines: 9 | Run Date: 09-27-2006

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	103.5	0.00	5.93	0.00	0.00	4.80	0.0	11.7	5.7	27.49	26.74	5.60	30	0.43	82.01	81.57	85.97	85.50	102.55	84.07	E-9 TO E-8
2	1	67.9	0.00	5.93	0.00	0.00	4.80	0.0	11.6	5.8	27.61	39.82	8.11	30	0.94	91.91	91.27	93.67	92.80	108.00	102.55	E-10 TO E-9
3	2	237.0	0.00	2.71	0.00	0.00	2.15	0.0	10.5	6.0	12.80	15.94	3.60	30	0.51	95.92	94.70	97.62	96.40	111.25	108.00	E-11 TO E-10
4	3	159.0	0.00	2.71	0.00	0.00	2.15	0.0	9.7	6.1	13.11	16.62	3.57	30	0.56	96.81	95.92	98.50	97.74	111.10	111.25	E-12 TO E-11
5	4	95.2	0.00	2.71	0.00	0.00	2.15	0.0	9.3	6.2	13.29	28.43	3.92	30	0.41	97.20	96.81	98.68	98.64	109.40	111.10	4 TO E-12
6	5	150.3	0.00	2.71	0.00	0.00	2.15	0.0	8.7	6.3	13.57	28.07	3.96	30	0.40	97.80	97.20	99.24	99.16	110.30	109.40	E-13 TO 4
7	6	126.4	0.41	0.41	0.81	0.33	0.33	5.0	5.0	7.2	2.40	14.79	2.96	15	4.47	104.20	98.55	104.82	99.84	108.20	110.30	5 TO E-13
8	6	102.8	0.00	1.47	0.90	0.00	1.07	5.0	8.0	6.5	6.92	11.53	2.53	24	0.89	98.71	97.80	100.15	99.82	109.00	110.30	E-14 TO E-13
9	8	133.0	0.40	1.47	0.69	0.28	1.07	5.0	7.5	6.6	7.04	10.11	4.77	18	0.79	99.76	98.71	100.77	100.20	109.50	109.00	E-15 TO E-14
10	9	169.9	0.00	1.07	0.00	0.00	0.79	0.0	6.8	6.8	5.37	7.14	3.70	18	0.39	100.43	99.76	101.45	101.11	110.60	109.50	E-16 TO E-15
11	10	82.1	0.28	0.58	0.79	0.22	0.44	5.0	5.5	7.1	3.14	17.10	3.47	15	5.97	105.33	100.43	106.04	101.90	109.40	110.60	E-17 TO E-16
12	11	92.0	0.30	0.30	0.74	0.22	0.22	5.0	5.0	7.2	1.61	3.79	2.92	12	0.97	106.22	105.33	106.76	106.27	109.50	109.40	E-18 TO E-17
13	10	95.9	0.11	0.49	0.73	0.08	0.35	5.0	6.0	7.0	2.44	10.52	2.10	18	0.86	101.25	100.43	101.99	101.97	108.30	110.60	E-19 TO E-16
14	13	54.1	0.00	0.38	0.00	0.00	0.27	0.0	5.6	7.1	1.92	9.41	2.28	18	0.68	101.62	101.25	102.21	102.22	107.40	108.30	E-20 TO E-19
15	14	33.7	0.23	0.23	0.67	0.15	0.15	5.0	5.0	7.2	1.12	17.91	2.15	15	6.56	103.83	101.62	104.25	102.47	107.10	107.40	E-21 TO E-20
16	14	51.7	0.15	0.15	0.78	0.12	0.12	5.0	5.0	7.2	0.85	9.36	1.41	18	0.68	101.97	101.62	102.41	102.42	108.20	107.40	E-22 TO E-20
17	2	72.3	0.00	3.22	0.76	0.00	2.65	5.0	7.4	6.6	17.48	32.75	9.95	18	8.29	98.00	92.01	99.45	93.91	110.30	108.00	6 TO E-10
18	17	245.2	0.00	1.52	0.00	0.00	1.12	0.0	6.4	6.8	7.66	12.85	5.05	18	1.28	101.13	98.00	102.19	100.71	112.70	110.30	7 TO 6
19	18	266.4	0.73	0.80	0.56	0.41	0.47	5.0	5.2	7.2	3.39	7.67	3.63	15	1.20	104.33	101.13	105.07	102.58	108.33	112.70	8 TO 7
20	19	5.8	0.07	0.07	0.90	0.06	0.06	5.0	5.0	7.2	0.46	10.05	0.44	15	2.07	104.45	104.33	105.37	105.37	108.83	108.33	9 TO 8
21	18	98.8	0.72	0.72	0.90	0.65	0.65	5.0	5.0	7.2	4.69	20.05	3.68	18	3.11	104.20	101.13	105.03	102.59	111.50	112.70	10 TO 7

Project File: storm drain layout (2) 4-14-06.stm | Number of lines: 24 | Run Date: 09-27-2006

NOTES: Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = 10 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
22	6	82.3	0.83	0.83	0.90	0.75	0.75	5.0	5.0	7.2	5.41	13.39	6.07	18	5.54	104.81	100.25	105.70	100.91	111.10	110.30	E-27 TO E-13
23	17	74.7	1.67	1.70	0.90	1.50	1.53	5.0	7.3	6.6	10.15	19.83	8.34	15	8.03	104.00	98.00	105.19	99.94	111.80	110.30	11 TO 6
24	23	21.9	0.03	0.03	0.90	0.03	0.03	5.0	5.0	7.2	0.20	13.38	0.16	15	3.66	104.80	104.00	106.29	106.29	107.80	111.80	12 TO 11

Project File: storm drain layout (2) 4-14-06.stm | Number of lines: 24 | Run Date: 09-27-2006

NOTES: Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = 10 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	103.5	0.00	5.93	0.00	0.00	4.80	0.0	12.6	7.8	37.29	26.74	7.60	30	0.43	82.01	81.57	89.68	88.82	102.55	84.07	E-9 TO E-8
2	1	67.9	0.00	5.93	0.00	0.00	4.80	0.0	12.5	7.8	37.41	39.82	8.95	30	0.94	91.91	91.27	93.96	93.20	108.00	102.55	E-10 TO E-9
3	2	237.0	0.00	2.71	0.00	0.00	2.15	0.0	11.4	8.0	17.28	15.94	3.52	30	0.51	95.92	94.70	98.63	97.20	111.25	108.00	E-11 TO E-10
4	3	159.0	0.00	2.71	0.00	0.00	2.15	0.0	10.6	8.2	17.64	16.62	3.59	30	0.56	96.81	95.92	99.67	98.66	111.10	111.25	E-12 TO E-11
5	4	95.2	0.00	2.71	0.00	0.00	2.15	0.0	10.2	8.3	17.87	28.43	3.64	30	0.41	97.20	96.81	99.86	99.71	109.40	111.10	4 TO E-12
6	5	150.3	0.00	2.71	0.00	0.00	2.15	0.0	9.5	8.5	18.23	28.07	3.71	30	0.40	97.80	97.20	100.30	100.06	110.30	109.40	E-13 TO 4
7	6	126.4	0.41	0.41	0.81	0.33	0.33	5.0	5.0	9.8	3.27	14.79	3.55	15	4.47	104.20	98.55	104.92	100.61	108.20	110.30	5 TO E-13
8	6	102.8	0.00	1.47	0.90	0.00	1.07	5.0	8.9	8.6	9.24	11.53	2.94	24	0.89	98.71	97.80	101.17	100.58	109.00	110.30	E-14 TO E-13
9	8	133.0	0.40	1.47	0.69	0.28	1.07	5.0	8.5	8.7	9.36	10.11	5.30	18	0.79	99.76	98.71	102.12	101.22	109.50	109.00	E-15 TO E-14
10	9	169.9	0.00	1.07	0.00	0.00	0.79	0.0	7.8	8.9	7.10	7.14	4.02	18	0.39	100.43	99.76	103.19	102.52	110.60	109.50	E-16 TO E-15
11	10	82.1	0.28	0.58	0.79	0.22	0.44	5.0	5.4	9.7	4.29	17.10	4.23	15	5.97	105.33	100.43	106.16	103.50	109.40	110.60	E-17 TO E-16
12	11	92.0	0.30	0.30	0.74	0.22	0.22	5.0	5.0	9.8	2.18	3.79	3.50	12	0.97	106.22	105.33	106.85	106.42	109.50	109.40	E-18 TO E-17
13	10	95.9	0.11	0.49	0.73	0.08	0.35	5.0	7.0	9.2	3.23	10.52	1.83	18	0.86	101.25	100.43	103.71	103.64	108.30	110.60	E-19 TO E-16
14	13	54.1	0.00	0.38	0.00	0.00	0.27	0.0	6.3	9.4	2.55	9.41	1.44	18	0.68	101.62	101.25	103.81	103.79	107.40	108.30	E-20 TO E-19
15	14	33.7	0.23	0.23	0.67	0.15	0.15	5.0	5.0	9.8	1.52	17.91	2.30	15	6.56	103.83	101.62	104.32	103.85	107.10	107.40	E-21 TO E-20
16	14	51.7	0.15	0.15	0.78	0.12	0.12	5.0	5.0	9.8	1.15	9.36	0.65	18	0.68	101.97	101.62	103.88	103.87	108.20	107.40	E-22 TO E-20
17	2	72.3	0.00	3.22	0.76	0.00	2.65	5.0	7.1	9.2	24.27	32.75	13.75	18	8.29	98.00	92.01	99.49	94.28	110.30	108.00	6 TO E-10
18	17	245.2	0.00	1.52	0.00	0.00	1.12	0.0	6.4	9.4	10.50	12.85	5.94	18	1.28	101.13	98.00	103.97	101.88	112.70	110.30	7 TO 6
19	18	266.4	0.73	0.80	0.56	0.41	0.47	5.0	5.2	9.8	4.61	7.67	3.75	15	1.20	104.33	101.13	105.98	104.82	108.33	112.70	8 TO 7
20	19	5.8	0.07	0.07	0.90	0.06	0.06	5.0	5.0	9.8	0.62	10.05	0.50	15	2.07	104.45	104.33	106.51	106.51	108.83	108.33	9 TO 8
21	18	98.8	0.72	0.72	0.90	0.65	0.65	5.0	5.0	9.8	6.37	20.05	4.46	18	3.11	104.20	101.13	105.16	104.84	111.50	112.70	10 TO 7

Project File: storm drain layout (2) 4-14-06.stm | Number of lines: 24 | Run Date: 09-27-2006

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
22	6	82.3	0.83	0.83	0.90	0.75	0.75	5.0	5.0	9.8	7.35	13.39	6.69	18	5.54	104.81	100.25	105.84	101.04	111.10	110.30	E-27 TO E-13
23	17	74.7	1.67	1.70	0.90	1.50	1.53	5.0	6.7	9.3	14.19	19.83	11.58	15	8.03	104.00	98.00	105.23	100.35	111.80	110.30	11 TO 6
24	23	21.9	0.03	0.03	0.90	0.03	0.03	5.0	5.0	9.8	0.27	13.38	0.22	15	3.66	104.80	104.00	107.32	107.32	107.80	111.80	12 TO 11

Project File: storm drain layout (2) 4-14-06.stm

Number of lines: 24

Run Date: 09-27-2006

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	58.3	1.28	1.28	0.90	1.15	1.15	5.0	5.0	7.2	8.34	28.94	6.97	15	20.08	93.20	81.50	94.33	85.50	98.20	82.75	14-13

Avid

Number of lines: 1

Run Date: 12-14-2006

NOTES: Intensity = 88.24 / (Inlet time + 15.50) ^ 0.83; Return period = 10 Yrs.

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	58.3	1.28	1.28	0.90	1.15	1.15	5.0	5.0	9.8	11.33	28.94	9.28	15	20.08	93.20	81.50	94.41	88.82	98.20	82.75	14-13

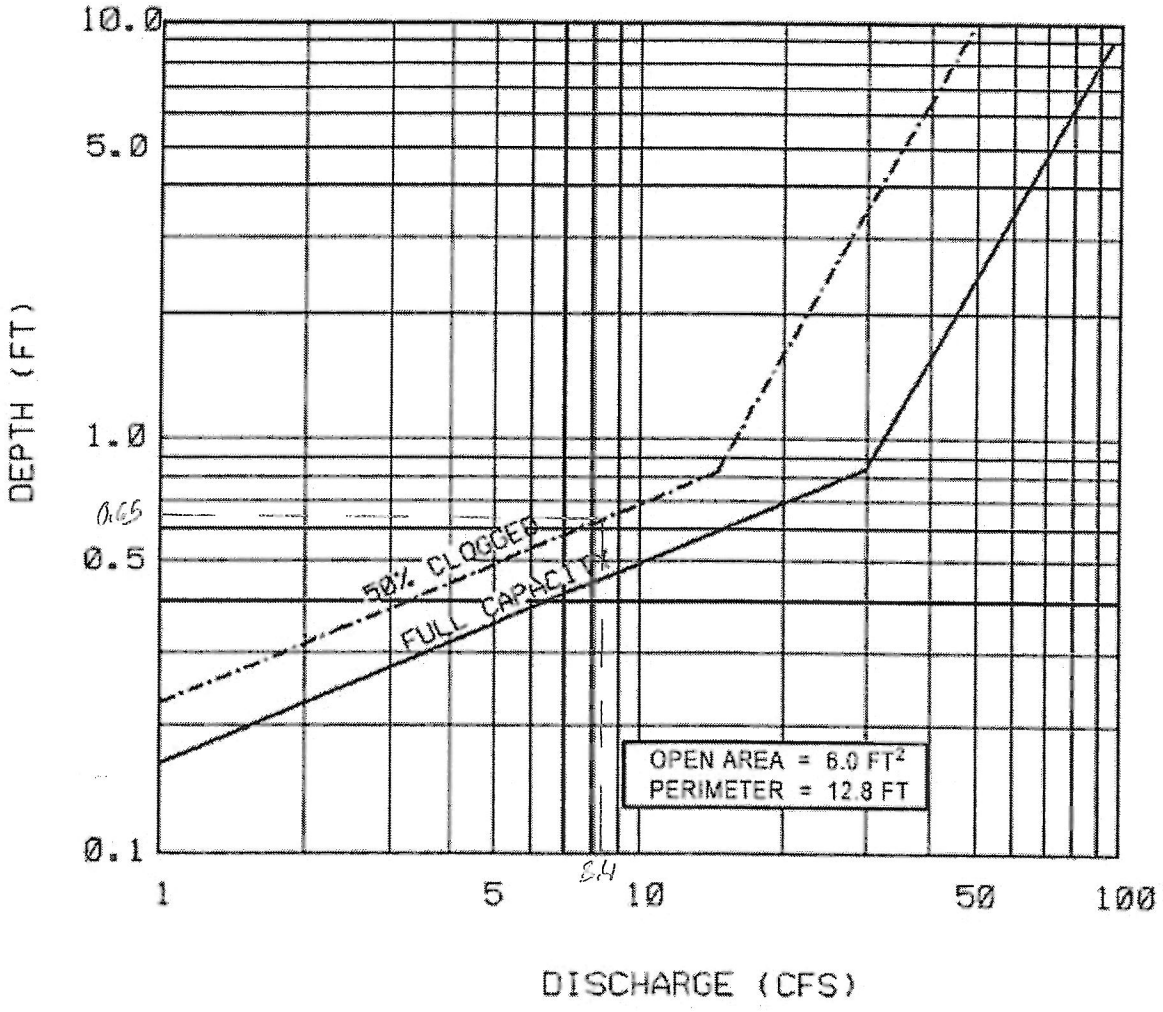
Avid

Number of lines: 1

Run Date: 12-14-2006

NOTES: Intensity = 127.16 / (Inlet time + 17.80) ^ 0.82; Return period = 100 Yrs.

Appendix 9C-14 Performance Curve DI-7 in a Sump



Str. # 14
Q = 8.40 cfs
Depth = 0.65'

Source: VDOT

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	103.5	52.1	MH	0.00	0.00	0.00	0.0	81.57	0.43	82.01	30	Cir	0.013	0.82	102.55	E-9 TO E-8
2	1	67.9	-52.1	MH	0.00	0.00	0.00	0.0	91.27	0.94	91.91	30	Cir	0.013	0.27	108.00	E-10 TO E-9
3	2	237.0	0.0	MH	0.00	0.00	0.00	0.0	94.70	0.51	95.92	30	Cir	0.024	0.15	111.25	E-11 TO E-10
4	3	159.0	-0.3	MH	0.00	0.00	0.00	0.0	95.92	0.56	96.81	30	Cir	0.024	0.20	111.10	E-12 TO E-11
5	4	95.2	9.6	MH	0.00	0.00	0.00	0.0	96.81	0.41	97.20	30	Cir	0.012	0.99	109.40	4 TO E-12
6	5	150.3	83.4	MH	0.00	0.00	0.00	0.0	97.20	0.40	97.80	30	Cir	0.012	0.96	110.30	E-13 TO 4
7	6	130.3	-72.2	Curb	0.00	0.41	0.81	5.0	98.55	4.34	104.20	15	Cir	0.012	1.00	108.20	5 TO E-13
8	6	102.8	-17.4	MH	0.00	0.00	0.90	5.0	97.80	0.89	98.71	24	Cir	0.024	0.38	109.00	E-14 TO E-13
9	8	133.0	19.3	Grate	0.00	0.40	0.69	5.0	98.71	0.79	99.76	18	Cir	0.012	0.50	109.50	E-15 TO E-14
10	9	169.9	0.0	MH	0.00	0.00	0.00	0.0	99.76	0.39	100.43	18	Cir	0.012	1.00	110.60	E-16 TO E-15
11	10	82.1	-89.8	Curb	0.00	0.28	0.79	5.0	100.43	5.97	105.33	15	Cir	0.012	1.50	109.40	E-17 TO E-16
12	11	92.0	-90.5	Curb	0.00	0.30	0.74	5.0	105.33	0.97	106.22	12	Cir	0.012	1.00	109.50	E-18 TO E-17
13	10	95.9	50.3	Curb	0.00	0.11	0.73	5.0	100.43	0.86	101.25	18	Cir	0.012	1.03	108.30	E-19 TO E-16
14	13	54.1	39.6	MH	0.00	0.00	0.00	0.0	101.25	0.68	101.62	18	Cir	0.012	1.00	107.40	E-20 TO E-19
15	14	33.7	90.0	Curb	0.00	0.23	0.67	5.0	101.62	6.56	103.83	15	Cir	0.012	1.00	107.10	E-21 TO E-20
16	14	51.7	0.0	Curb	0.00	0.15	0.78	5.0	101.62	0.68	101.97	18	Cir	0.012	1.00	108.20	E-22 TO E-20
17	2	72.3	13.1	MH	0.00	0.00	0.76	5.0	92.01	8.29	98.00	18	Cir	0.012	0.89	110.30	6 TO E-10
18	17	245.2	59.5	MH	0.00	0.00	0.00	0.0	98.00	1.28	101.13	18	Cir	0.012	0.96	112.70	7 TO 6
19	18	266.4	11.9	Curb	0.00	0.73	0.56	5.0	101.13	1.20	104.33	15	Cir	0.012	1.43	108.33	8 TO 7
20	19	5.8	70.5	Curb	0.00	0.07	0.90	5.0	104.33	2.07	104.45	15	Cir	0.012	1.00	108.83	9 TO 8
21	18	98.8	-72.0	MH	0.00	0.72	0.90	5.0	101.13	3.11	104.20	18	Cir	0.012	1.00	111.50	10 TO 7

Project File: storm drain layout (2) 4-14-06.stm | Number of lines: 24 | Date: 12-14-2006

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
22	6	82.3	3.0	MH	0.00	0.83	0.90	5.0	100.25	5.54	104.81	18	Cir	0.024	1.00	111.10	E-27 TO E-13
23	17	74.7	-12.4	MH	0.00	1.67	0.90	5.0	98.00	8.03	104.00	15	Cir	0.012	1.00	111.80	11 TO 6
24	23	21.9	90.0	Grate	0.00	0.03	0.90	5.0	104.00	3.66	104.80	15	Cir	0.012	1.00	107.80	12 TO 11

Project File: storm drain layout (2) 4-14-06.stm | Number of lines: 24 | Date: 12-14-2006

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	116.8	70.7	MH	0.00	0.00	0.90	5.0	81.95	14.44	98.81	24	Cir	0.012	1.00	108.80	E-2 TO E-1
2	1	12.1	0.0	MH	0.00	0.56	0.76	5.0	98.81	1.73	99.02	24	Cir	0.012	0.90	109.00	1A TO E-2
3	2	155.2	-61.6	Curb	0.00	0.56	0.76	5.0	99.02	0.50	99.79	24	Cir	0.012	1.32	110.58	1 TO 1A
4	3	209.2	59.0	MH	0.00	0.00	0.00	0.0	99.79	0.50	100.84	24	Cir	0.012	0.15	108.60	2A TO 1
5	4	213.1	0.0	Curb	0.00	0.28	0.78	5.0	100.84	0.50	101.90	24	Cir	0.012	0.67	108.90	2 TO 2A
6	5	122.2	23.0	Curb	0.00	0.81	0.82	5.0	101.90	0.49	102.50	24	Cir	0.012	1.46	105.83	3 TO 2
7	6	204.7	76.0	Grate	0.00	0.28	0.67	5.0	102.50	0.49	103.50	24	Cir	0.012	0.50	106.30	E-5 TO 3
8	7	135.6	5.5	Curb	0.00	0.58	0.67	5.0	103.50	2.21	106.50	15	Cir	0.012	1.00	111.43	E-6 TO E-5
9	1	50.3	-112.5	Curb	0.00	0.83	0.86	5.0	98.81	8.18	102.92	15	Cir	0.012	1.00	107.60	E-7 TO E-2
10	2	58.3	42.1	MH	0.00	2.99	0.90	5.0	98.91	1.87	100.00	24	Cir	0.012	1.00	109.90	13 TO E-2

Project File: storm drain layout 4-14-06.stm | Number of lines: 10 | Date: 12-14-2006

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr line No.	Line length (ft)	Defl angle (deg)	Junc type	Known Q (cfs)	Drng area (ac)	Runoff coeff (C)	Inlet time (min)	Invert El Dn (ft)	Line slope (%)	Invert El Up (ft)	Line size (in)	Line type	N value (n)	J-loss coeff (K)	Inlet/ Rim El (ft)	
1	End	58.3	169.8	Grate	0.00	1.28	0.90	5.0	81.50	20.08	93.20	15	Cir	0.013	1.00	98.20	14-13

Avid	Number of lines: 1	Date: 12-14-2006

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

County BMP ID Code (if known): WC-097

Name of Facility: AVID MEDICAL + ESGI EXPANSION BMP No.: 1 Date: 11/18/09

Location: STONEHOUSE COMMERCE PARK ; TOANO, VA

Name of Owner: AVID REALTY LLC

Name of Inspector: M. MAJDESKI

Type of Facility: BIO RETENTION

Weather Conditions: SUNNY 62° Type: ☑ Final Inspection ☐ County BMP Inspection Program ☐ Owner Inspection

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

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

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

Facility Item	O.K.	Routine	Urgent	Comments
Accessibility:				
Roads	✓			
Parking Areas	✓			
Gates	N/A			
Locks	N/A			
Safety Fencing	N/A			
Observation Wells/Areas:				
Trap Doors				
Manhole Covers	✓			
Grates				
Steps				
Pretreatment Devices: ☑ **Inlet** ☐ **Sump** ☐ **Forebay** ☐ **Other**				
Sediment	✓			
Trash & Debris	✓			
Structure	✓			
Other				
Inflow Structure (Describe Type/Location): CURB INLET				

Facility Item	O.K.	Routine	Urgent	Comments
Condition	✓			
Erosion				
Trash and Debris				
Sediment				
Aesthetics				
Other				
Primary Infiltration (Bioretention Cell) Area:				
Specialty Landscaping	✓			
Mulch Layer	N/A			
Planting Soil/Sand	✓			
Subgrade Soil	N/A			
Aggregate	N/A			
Underdrain	✓			
Sediment	✓			
Aesthetics	✓			
Overflow or Bypass Control Structure (Describe Type/Location):				
Condition	✓			
Erosion	✓			
Trash & Debris	✓			
Sediment	✓			
Other				
Outlet Structure (Describe Type/Location):				
Condition				
Erosion				
Trash & Debris				
Sediment				
Other				
Contributing Drainage Area/Perimeter Conditions:				
Land Use	✓			
Stabilization	✓			
Trash & Debris	✓			
Pollutant Hazard	✓			
Other				

Facility Item	O.K.	Routine	Urgent	Comments

Sketch and/or Remarks:

FILTERRA UNITS INSTALLED PER PLAN. FUNCTIONING WELL.

Overall Environmental Division Internal Rating: 4/5

Signature: Mia P. Min **Date:** 11/18/09

Title: SENIOR ENVIRONMENTAL INSPECTOR

SWMProg\BMP\CoInspProg\Bioret.wpd

Date Record Created: 11/18/2009

Created By: Michael Majdeski

If BMP is active in ERP please check box ☐

If BMP has been turned over to STW please check box ☐

Watershep and BMP ID Combined
Ex: SC003
WC098

WATERSHED	WC
BMP ID NO	098
PLAN NO	SP-094-06
TAX PARCEL	(12-1)(1-44)
PIN NO	1210100044
CONSTRUCTION DATE	5/1/2006
PROJECT NAME	Avid Medical Expansion
FACILITY LOCATION	Avid Medical ; Stonehouse Commerce Park
CITY-STATE	Toano, VA
CURRENT OWNER	Avid Realty LLC
OWNER ADDRESS	9000 Westmont Drive
OWNER ADDRESS 2	
CITY-STATE-ZIP CODE	Toano, VA 23168
OWNER PHONE	(757) 566-3510
MAINT AGREEMENT	No
EMERG ACTION PLAN	No

Get Last BMP No | Return to Menu

MAINTENANCE PLAN	No	CTRL STRUC DESC	
SITE AREA acre	4.9	CTRL STRUC SIZE inches	
LAND USE	Commercial	OTLT BARRL DESC	
old BMP TYP		OTLT BARRL SIZE inch	
JCC BMP CODE	D1 Bioretention		
POINT VALUE		EMERG SPILLWAY	No
		DESIGN HW ELEV	
		PERM POOL ELEV	
SVC DRAIN AREA acres	1.28	2-YR OUTFLOW cfs	0.00
		10-YR OUTFLOW cfs	0.00
		REC DRAWING	Yes
SERVICE AREA DESCRIP	Parking Lot		
IMPERV AREA acres	13.07	CONSTR CERTIF	Yes
RECV STREAM			
EXT DET-WQ-CTRL	No	LAST INSP DATE	
WTR QUAL VOL acre-ft		INTERNAL RATING	
CHAN PROT CTRL	No	MISC/COMMENTS	
CHAN PROT VOL acre-ft			
SW/FLOOD CONTROL	No		
GEOTECH REPORT	No		

Inspected by

Additional Comments: