



TRANSMITTAL SHEET
ENGINEERING & RESOURCE PROTECTION → STORMWATER

Project: Jamestown High School Aux Gym

County Plan No.: SP-11-10

Assigned BMP No.: PC -287

BMP Type: Infiltration

Information Enclosed:

- Record Drawings (Asbuilts)
- Construction Certification
- Computations
- Other :

Name: Gregory B. Johnson

Date: 7/11/13

Signature: _____



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

Project Name: JAMESTOWN HIGH SCHOOL Auxiliary Gym
 County Plan No.: SP-01-10
 Stormwater Management Facility: SWale BMP - Infiltration
 BMP Phase #: I II III
 Information Package Received. Date/By: 4-10-2013
 Completeness Check:
 Record Drawing Date/By: 4/3/13 Jeffrey J. Vierrether
 Construction Certification Date/By: 4/3/13 MICHAEL GADDY
 RD/CC Standard Forms (Required for all BMPs after Feb 1st 2001Only)
 Insp/Maint Agreement # / Date: NA
 BMP Maintenance Plan Location: Sheet C5.0
 Other: _____
 Standard E&SC Note on Approved Plan Requiring RD/CC or County comment in plan review
 Yes No Location: Sheet C.0 Item 21
 Assign County BMP ID Code #: Code: PC-287
 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: 5/17/2013
 Record Drawing (RD) Review Date: 5/17/2013
 Construction Certification (CC) Review Date: 5/17/2013
 Actions:
 No comments.
 Comments. Letter Forwarded. Date: _____
 Record Drawing (RD)
 Construction Certification (CC)
 Construction-Related (CR)
 Site Issues (SI)
 Other : _____
 Second Submission: _____
 Reinspection (if necessary): _____
 Acceptable for SWM Purposes (RD/CC/CR/Other). Ok to proceed with bond release. **NO BOND**
 Complete "Surety Request Form".
 Check/Clean active file of any remaining material and finish "As-Built" file.
 Add to County BMP Inventory/Inspection schedule (Phase I, II or III).
 Copy Final Inspection Report into County BMP Inspection Program file.
 Obtain Digital Photographs of BMP and save into County BMP Inventory.
 Request mylar/reproducible from As-Built plan preparer.
 Complete "As-built Tracking Log".
 Last check of BMP Access Database (County BMP Inventory).
 Add BMP to JCC Hydrology & Hydraulic database (optional).
 Add BMP to Municipal BMP list (if a County-owned facility)
 Add BMP to PRIDE BMP ratings database.

Final Sign-Off

Greg
Johnson

Inspector: Date: 5/23/2013
 Chief Engineer: _____ Date: _____

*** See separate checklist, if needed.



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: Jamestown High School Auxiliary Gymnasium Addition
Structure/BMP Name: Dry Swale BMP
Project Location: 3751 John Tyler Hwy, Williamsburg, VA
BMP Location: adjacent to gymnasium addition
County Plan No.: SP-011-10

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Project Type: Residential Business Commercial Office Institutional Industrial Public Roadway Other
Tax Map/Parcel No.: 46010100002D
BMP ID Code (if known): _____
Zoning District: PL
Land Use: Public Land Use
Site Area (sf or acres): 76.987 AC

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Brief Description of Stormwater Management/BMP Facility: _____
Dry swale BMP adjacent to gymnasium addition with outfall to existing storm water system.

Nearest Visible Landmark to SWM/BMP Facility: gymnasium addition

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

Station Number or Name: "320"
Datum or Reference Elevation: NGVD29, elevation = 30.18'
Control Description: Brass Disk
Control Location from Subject Facility: _____
Station "320" located on Parcel 4620100019A

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

Section 2 - Stormwater Management/BMP Facility Construction Information:

Pre-Construction Meeting Held for Construction of SWM/BMP Facility: Yes No Unknown
Approx. Construction Start Date for SWM/BMP Facility: 7-1-11
Facility Monitored by County Representative during Construction: Yes No Unknown
Name of Site Work Contractor Who Constructed Facility: Wolf Contractors, Inc
Name of Professional Firm Who Routinely Monitored Construction: MSA, PC
Date of Completion for SWM/BMP Facility: 6-1-12
Date of Record Drawing/Construction Certification Submittal: 4-3-13

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

Section 3 - Owner/Designer/Contractor Information:

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

Name: Williamsburg - James City County Public Schools
Mailing Address: 597 Jolly Pond Road, Williamsburg, VA 23188
Business Phone: 757-259-3600 Fax: 757-565-1462
Contact Person: Alan Robertson Title: _____

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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: MSA, PC
Mailing Address: 5033 Rouse Drive, VA Beach, VA 23462
Business Phone: 757-490-9264
Fax: 757-490-0634
Responsible Plan Preparer: Michael S. Gaddy, P.E.
Title: Project Engineer
Plan Name: Jamestown Highschool Auxiliary Gymnasium Addition
Firm's Project No. 09113
Plan Date: 6-8-11
Sheet No.'s Applicable to SWM/BMP Facility: C5.0 / _____ / _____ / _____ / _____

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

Firm Name: Wolf Constracors, Inc
Mailing Address: 473 Wolf Drive, Newport News, VA 23601
Business Phone: 757-596-1660

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

Fax: 757-596-9421
Contact Person: Gerry Schulte
Site Foreman/Supervisor: Gerry Schulte
Specialty Subcontractors and Purpose (for BMP Construction Only): APR 10 2013
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Section 4 - Professional Certifications:

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

Record Drawing and Construction Certifications for Stormwater Management/BMP Facilities

Record Drawing Certification

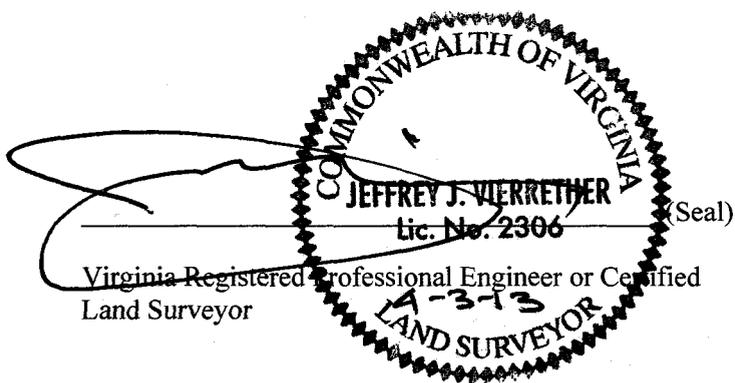
Firm Name: MSA, PC
Mailing Address: 5033 Rouse Drive, VA Beach, VA 23462
Business Phone: 757-490-9264
Fax: 757-490-0634
Name: Jeffrey J. Vierrether, L.S.
Title: Partner
Signature: [Signature]
Date: 4-3-13

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

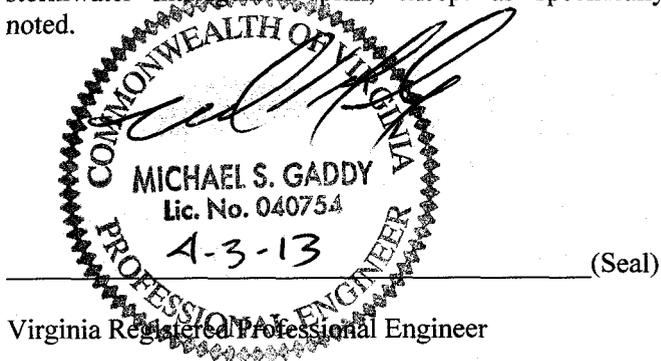
Construction Certification

Firm Name: MSA, PC
Mailing Address: 5033 Rouse Drive, VA Beach, VA 23462
Business Phone: 757-490-6264
Fax: 757-490-0634
Name: Michael S. Gaddy, P.E.
Title: Principal
Signature: [Signature]
Date: 4-3-13

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



Virginia Registered Professional Engineer or Certified Land Surveyor



Virginia Registered Professional Engineer

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

- Pre-Construction Meeting - Provides an opportunity to review SWM/BMP facility construction, maintenance and operation plans and addresses any questions regarding construction and/or monitoring of the structure. The design engineer, certifying professionals (if different), Owner/Applicant, Contractor and County representative(s) are encouraged to attend the preconstruction meeting. Advanced notice to the Engineering and Resource Protection Division is requested. Usually, this requirement can be met simultaneously with Erosion and Sediment Control preconstruction meetings held for the project.
- A fully completed **STORMWATER MANAGEMENT / BMP FACILITIES, RECORD DRAWING and CONSTRUCTION CERTIFICATION FORM** and **RECORD DRAWING CHECKLIST**. All applicable sections shall be completed in their entirety and certification statements signed and sealed by the registered professional responsible for individual record drawing and/or construction certification.
- The Record Drawing shall be prepared by a Registered Professional Engineer or Certified Land Surveyor for the drainage system of the project including any Best Management Practices.
- Construction Certification - Construction of Stormwater Management / BMP facilities which contain impoundments, embankments and related engineered appurtenances including subgrade preparation, compacted soils, structural fills, liners, geosynthetics, filters, seepage controls, cutoffs, toe drains, hydraulic flow control structures, etc. shall be visually observed and monitored by a Registered Professional Engineer or his/her authorized representative. The Engineer must certify that the structure, embankment and associated appurtenances were built in accordance with the approved design plan, specifications and stormwater management plan and standard accepted construction practice and shall submit a written certification and/or drawings to the Engineering and Resource Protection Division as required. Soil and compaction test reports, concrete test reports, inspection reports, logs and other required construction material or installation documentation may be required by the Engineering and Resource Protection Division to substantiate the certification, if specifically requested. The Engineer shall have the authority and responsibility to make minor changes to the approved plan, in coordination with the assigned County inspector, in order to compensate for unsafe or unusual conditions encountered during construction such as those related to bedrock, soils, groundwater, topography, etc. as long as changes do not adversely affect the integrity of the structure(s). Major changes to the approved design plan or structure must be reviewed and approved by the original design professional and the James City County Environmental Division.
- Record Drawing and Construction Certifications are required within **thirty (30) days** of the completion of Stormwater Management / BMP facility construction. Submittals must be reviewed and accepted by James City County Engineering and Resource Protection Division prior to final inspection, acceptance and bond/surety release.

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

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

Interim or final record drawing and construction certifications are not required for temporary sediment basins which are designed and constructed in accordance with current minimum standards and specifications for temporary sediment basins per the Virginia Erosion and Sediment Control Handbook (VESCH); have a temporary service life of less than eighteen (18) months; and will be removed completely once associated disturbed areas are stabilized, unless a distinct hazard to the public's health, safety and welfare is determined by the Engineering and Resource Protection Division due to the size or presence of the structure or due to evidence of improper construction.

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

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

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

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,

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it is requested that the record drawings also be submitted to the Engineering and Resource Protection Division on a diskette or CD-ROM in an acceptable electronic file format such as *.dxf, *.dwg, etc. or in a standard scanned and readable format. The electronic file requirement can be discussed and coordinated with Engineering and Resource Protection Division staff at the time of final submission.

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STORMWATER MANAGEMENT/BMP FACILITIES
RECORD DRAWING CHECKLIST

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

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

- XX 1. All constructed facilities meet approved design plans, unless otherwise shown. Record information or deviations from approved design plan shown in clearly annotated format and/or boxed beside design values.
- XX 2. Elevations to the nearest 0.1' unless higher accuracy is needed to show positive drainage.
- XX 3. All plan sheets labeled with "RECORD DRAWING" in large text in lower right hand corner. (Approved County Plan Number and BMP ID Code can be included if known).
- XX 4. All plan sheet revision blocks modified to indicate date and record drawing status.
- XX 5. All plan sheets have certification statements and certifying professional's signature and seal.

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

- XX 1. All requirements of Section I (Methods and Presentation) apply to this section.
- XX 2. Plan Views: Show general location, arrangement and dimensions. Location and alignment shall generally match approved design plans.
- XX 3. Profile or elevations along top or berm of the facility. At a minimum, elevations are required at each end, at intervals not to exceed 50 feet and where low spots may be present. Top of embankment or berm elevations must be no less than design elevation plus any settlement allowances.
- XX 4. Top widths, berm widths, and embankment side slopes.
- XX 5. Show length, width and depth of facility or grading, contours or spot elevations as required to verify permanent pool and design storage volumes were met or were reasonably close to the approved design. Evaluation of as-built grading, contours, spot elevations, or cross-sections, may be necessary by the professional to ensure approved design configurations, depths and volumes were closely maintained. If grading or elevations are significantly different from the approved plan, the Engineering and Resource Protection Division shall be contacted immediately to determine whether the variation is acceptable or whether further evidence will be required. Facilities which do not closely resemble approved plan grades, elevations or configurations may require regrading by the Contractor; check volumetric computations; and/or a check hydraulic routing to ensure approved design water surface elevations, discharges or freeboard were closely maintained.

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- XX 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.
- XX 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.
- XX 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.
- NA 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.**
- NA 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.
- XX 15. Outlet barrel diameter, length, slope, type, and thickness class of material and type of flared end sections, headwall or endwall.
- XX 16. Outfall protection dimension, type and depth of rock and if underlain filter fabric is present.
- XX 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.
- 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: XX Acceptable N/A Not Applicable Inc Incomplete)

III. Group A - Wet Ponds (Includes A-1 Small Wet Ponds; A-2 Wet Ponds; A-3 Wet Ext Det Ponds.)

- NA A1. All requirements of Section II, Minimum Standards, apply to Group A facilities.
- NA A2. Principal spillway consists of reinforced concrete pipe with O-Ring gaskets for watertight joint construction.
- NA 3. Sediment forebays or pretreatment devices provided at inlets to pond. Generally 4 to 6 ft. deep.
- NA A4. Access for maintenance and equipment is provided to the forebay(s). Access corridors are at least 12 ft. wide, have a maximum slope of 15 percent and are adequately stabilized to withstand heavy equipment or vehicle use.
- NA A5. Adequate fixed vertical sediment depth markers installed in the forebay(s) for future sediment monitoring purposes.
- NA A6. Pond liner (if required) provided. Either clay liners, polyliners, bentonite liners or use of chemical soil additives based on requirements of the approved plan.
- NA A7. Minimum 6 percent slope safety bench extending a minimum of 15 feet outward from normal pool edge and/or an aquatic bench extending a minimum of 10 feet inward from the normal shoreline with a maximum depth of 12 inches below the normal pool elevation, if applicable, per the approved design plans. (Note: Safety benches may be waived if pond side slopes are no steeper than 4H:1V).
- NA A8. No trees are present within a zone 15 feet around the embankment toe and 25 feet from the principal spillway structure.
- NA A9. Wet permanent pool, typically 3 to 6 feet deep, is provided and maintains level within facility.
- NA A10. Low flow orifice has a non-clogging mechanism.
- NA A11. A pond drain pipe with valve was provided.
- NA A12. Pond side slopes are not steeper than 3H:1V, unless approved plan allowed for steeper slope.
- NA A13. End walls above barrels (outlet pipe) greater than 48 inch in diameter are fenced to prevent a fall hazard.

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

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

IV. Group B – Wetlands *(Includes B-1 Shallow Marsh; B-2 Ext Det Shallow Wetlands; B-3 Pond Wetland System and B-4 Pocket Wetland)*

- NA B1. Same requirements as Group A Wet Ponds.
- NA B2. Minimum 2:1 length to width flow path provided across the facility.
- NA B3. Micropool provided at or around outlet from BMP (generally 3 to 6 ft. deep).
- NA B4. Wetland type landscaping provided in accordance with approved plan. Includes correct pondscaping zones, plant species, planting arrangements, wetland beds, etc. Wetland plants include 5 to 7 emergent wetland species. Individual plants at 18 inches on center in clumps.
- NA B5. Adequate wetland buffer provided (Typically 25 ft. outward from maximum design water surface elevation and 15 ft. setback to structures).
- NA B6. No more than one-half (1/2) of the wetland surface area is planted.
- NA B7. Topsoil or wetland mulch provided to support vigorous growth of wetland plants.
- NA B8. Planting zones staked or flagged in field and locations subsequently established by appropriate field surveying methods for record drawing presentation.

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STORMWATER MANAGEMENT/BMP FACILITIES
RECORD DRAWING CHECKLIST

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

V. Group C - Infiltration Practices (Includes C-1 Infiltration Trench; C-2 Infiltration Trench; C-3 Infiltration Basin; and C-4 Infiltration Basin)

- NA C1. All requirements of Section II, Minimum Standards, apply to Group C facilities as applicable.
- NA C2. Facility is not located on fill slopes or on natural ground in excess of six (6) percent.
- NA C3. Pretreatment devices provided prior to entry into the infiltration facility. Acceptable pretreatment devices include sediment forebays, sediment basins, sediment traps, sump pits or inlets, grass channels, plunge pools or other acceptable measures.
- NA C4. Three (3) or more of the following pretreatment devices provided to protect long term integrity of structure: grass channel; grass filter strip; bottom sand layer; upper filter fabric layer; use of washed bank run gravel aggregate.
- NA C5. Sides of infiltration practice lined with filter fabric.
- NA C6. Facility was not used for erosion and sediment control purposes and sediment was prevented from entering the facility to the greatest extent possible during construction.
- NA C7. Stabilization and acceptable vegetative cover established over contributing drainage area prior to conveyance of stormwater to the facility.
- NA C8. Minimum one hundred (100) foot separation horizontally from any known water supply well and minimum one hundred (100) foot separation upslope from any building.
- NA C9. Minimum twenty-five (25) foot separation down gradient from any structure.
- NA C10. Stormwater outfalls provided for overflow associated with larger design storms.
- NA C11. No visual signs of erosion or channel degradation immediately downstream of facility.
- NA C12. Facility does not currently cause any apparent surface or subsurface water problems to downgrade properties.
- NA C13. Observation well provided.
- NA C14. Adequate, direct access provided to the facility for future maintenance, operation and inspection.

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STORMWATER MANAGEMENT/BMP FACILITIES
RECORD DRAWING CHECKLIST

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

VI. Group D - Filtering Systems (Includes D-1 Bioretention Cells; D-2 Surface Sand Filters; D-3 Underground Sand Filters; D-4 Perimeter Sand Filters; D-5 Organic Filters; and D-6 Pocket Sand Filters)

- XX D1. All requirements of Section II, Minimum Standards, apply to Group D facilities.
- XX D2. Sediment pretreatment devices provided.
- NA D3. For D-1 BMPs (Bioretention Cells), pretreatment consisting of a grass filter strip below level spreader (deflector); a gravel diaphragm; and mulch and planting soil layers were provided.
- NA D4. For D-1 BMPs (Bioretention Cells), plantings consist of native plant species; vegetation provided was based on zones of hydric tolerances; trees and understory of shrubs and herbaceous materials were provided; woody vegetation is absent from inflow locations; and trees are located around facility perimeter.
- XX D5. Facility was not used for erosion and sediment control purposes and sediment was prevented from entering the facility to the greatest extent possible during construction.
- XX D6. No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed.
- XX D7. Filtering system is off-line from storm drainage conveyance system.
- XX D8. Overflow outlet has adequate erosion protection.
- XX D9. Deflector, diversion, flow splitter or regulator structure provided to divert the water quality volume to the filtering structure.
- XX D10. Minimum four (4) inch perforated underdrain provided in a clean aggregate envelope layer beneath the facility.
- NA D11. Minimum fifty (50) foot separation from any slope fifteen (15) percent or greater. Minimum one hundred (100) foot separation horizontally from any known water supply well. Minimum one hundred (100) foot separation upslope and twenty-five (25) foot separation downslope from any building.
- XX D12. Stabilization and acceptable vegetative cover established over contributing drainage area prior to conveyance of stormwater to the facility.
- XX D13. No visual signs of erosion or channel degradation immediately downstream of facility.
- XX D14. Adequate, direct access provided to the pretreatment area and/or filter bed for future maintenance.

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**STORMWATER MANAGEMENT/BMP FACILITIES
AS-BUILT PLAN CHECKLIST**

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

VII. Group E - Open Channel Systems *(Includes E-1 Wet Swales (Check Dams); E-2 Dry Swales; and E-3 Biofilters)*

- XX E1. All requirements of Section II, Minimum Standards, apply to Group E facilities as applicable.
- XX E2. Open channel system has constructed longitudinal slope of less than four (4) percent.
- XX E3. No visual signs of erosion in the open channel system's soil and/or vegetative cover.
- XX E4. Open channel side slopes are no steeper than 2H:1V at any location. Preferred channel sideslope is 3H:1V or flatter.
- XX E5. No visual signs of ponding are present at any location in the open channel system, except at rock check dam locations for E-1 systems (Wet Swales).
- XX E6. For E-2 BMPs (Dry Swales), an underdrain system was provided.
- XX E7. Treated timber or rock check dams provided as pretreatment devices for the open channel system.
- XX E8. Gravel diaphragm provided in areas where lateral sheet flow from impervious surfaces are directly connected to the open channel system.
- XX E9. Grass cover/stabilization in the open channel system appears adaptable to the specific soils and hydric conditions for the site and along the channel system.
- XX E10. Open channel system areas with grass covers higher than four (4) to six (6) inches were properly mowed.
- XX E11. Facility was not used for erosion and sediment control purposes and sediment was prevented from entering the facility to the greatest extent possible during construction.
- XX E12. No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed and no adverse affects to the function of the facility are anticipated.
- NA E13. For E-3 BMPs (Biofilters), the bottom width is six (6) feet maximum at any location.
- NA E14. For E-3 BMPs (Biofilters), sideslopes are 3H:1V maximum at any location.
- NA E15. For E-3 BMPs (Biofilters), the constructed channel slope is less than or equal to three (3) percent at any location.
- NA E16. For E-3 BMPs (Biofilters), the constructed grass channel is approximately equivalent to the constructed roadway length.

STORMWATER MANAGEMENT/BMP FACILITIES
RECORD DRAWING CHECKLIST

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

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

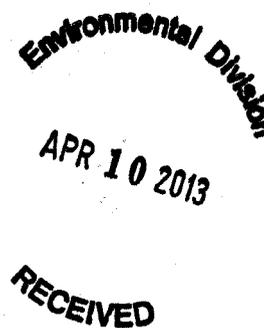
- NA F1. All requirements of Section II, Minimum Standards, apply to Group F facilities.
- NA F2. Basin bottom has positive slope and drainage from all basin inflow points to the riser (or outflow) location.
- NA F3. Timber wall BMP used in intermittent stream only. (ie. Prohibited in perennial streams.)
- NA F4. Forebay provided approximately 20 ft. upstream of the facility. Forebays generally 4 to 6 feet in depth.
- NA F5. A reverse slope pipe, vertical stand pipe or mini-barrel and riser was provided to prevent clogging.
- NA F6. Principal spillway and outlet barrel provided consisting of reinforced concrete pipe with O-Ring gaskets for watertight joint construction.
- NA F7. Mini-barrel and riser, if used, contains a removable trash rack to reduce clogging.
- NA 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.
- NA F9. Timbers properly reinforced or concrete footing provided if soil conditions were prohibitive.
- NA F10. Timber wall cross members extended to a minimum depth of two (2) feet below ground elevation.
- NA F11. Protection against erosion and scour from the low flow orifice and weir-flow trajectory provided.
- NA F12. Stilling basin or standard outlet protection provided at principal spillway outlet.
- NA 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.
- NA F14. No visual signs of undercutting of timber walls or clogging of the low orifice were present.
- NA F15. No visual signs of erosion or channel degradation immediately downstream of facility.
- NA F16. No visible signs of accumulated silt/sediment were present in the facility following construction or alternately, accumulated silt/sediment was properly removed and no adverse affects to the function of the facility are anticipated.

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

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

IX. Group G - Open Spaces (Includes All Open Space Types G-1; G-2; and G-3)

- NA G1. All requirements of Section II, Minimum Standards, apply to Group G facilities as applicable.
- NA G2. Constructed impervious areas appear to conform with locations indicated on the approved plan and appear less than sixty (60) percent impervious in accordance with the requirements of the James City County Chesapeake Bay Preservation Ordinance.
- NA G3. Dedicated open space areas are in undisturbed common areas, conservation easements or are protected by other enforceable instruments that ensure perpetual protection.
- NA G4. Provisions included to clearly specify how the natural vegetated areas utilized as dedicated open space will be managed and field identified (marked).
- NA G5. Adequate protection measures were implemented during construction to protect the defined dedicated open space areas.
- NA G6. Dedicated open space areas were not disturbed during construction (ie. cleared, grubbed or graded).



STORMWATER MANAGEMENT/BMP FACILITIES
RECORD DRAWING CHECKLIST

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

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

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

- XX SD1. All requirements of Section II, Minimum Standards, apply to Storm Drainage Systems.
- XX SD2. Horizontal location of all pipe and structures relative to the SWM/BMP facility.
- XX SD3. Type, top elevation and invert elevation of all access type structures (inlets, manholes, etc.).
- XX SD4. Material type, size or diameter, class, invert elevations, lengths and slopes for all pipe segments.
- XX SD5. Class, length, width and depth of riprap and outlet protections or dimensions of special energy dissipation structures.

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

- NA O1. All requirements of Section II, Minimum Standards, apply to this section.
- NA O2. Certification criteria to be determined on a case-by-case basis by the Engineering and Resource Protection Division specific to the proposed SWM/BMP facility.

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

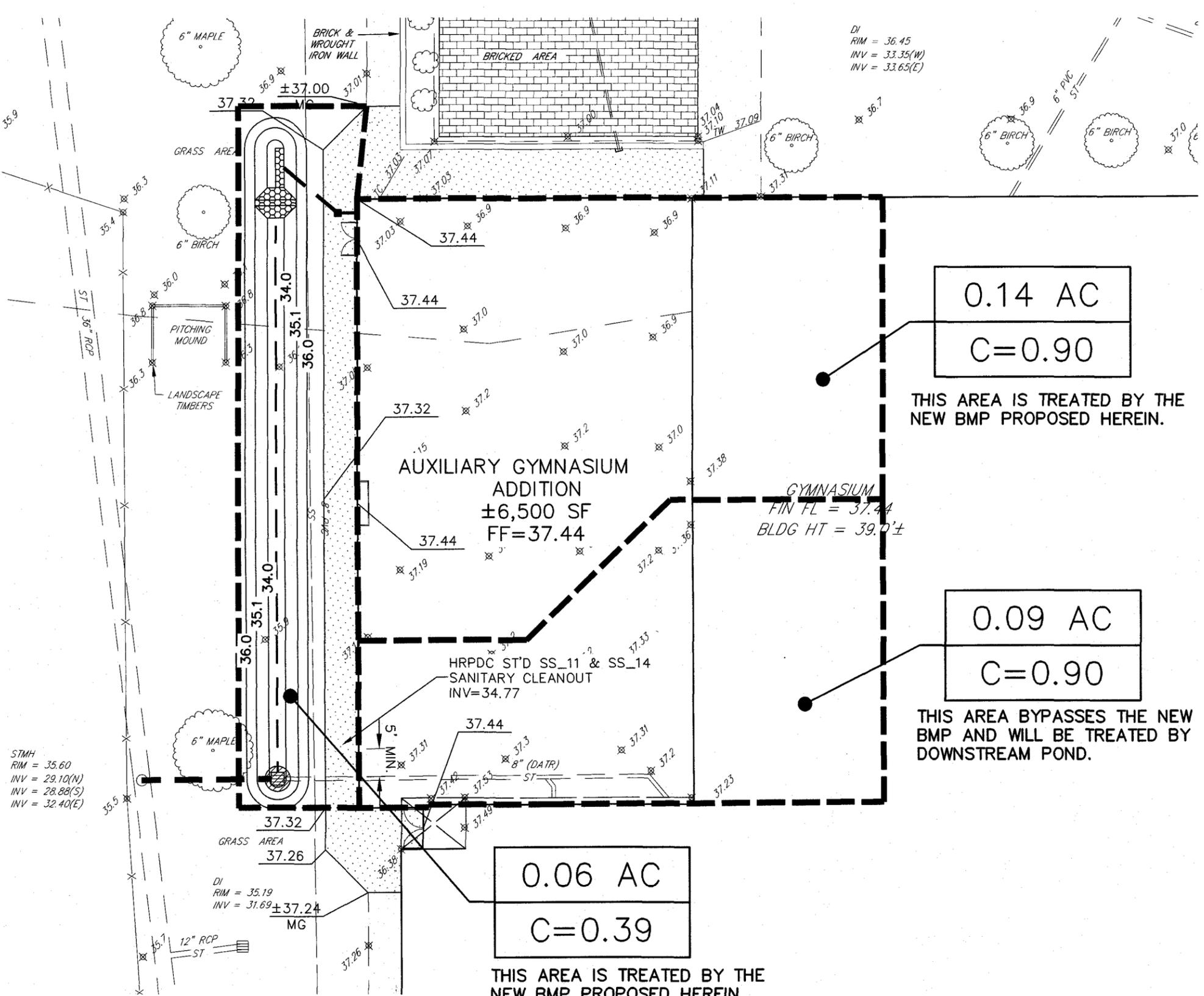
XII. References *(The James City County Record Drawing and Construction Certification Forms and Checklists for Stormwater Management/BMP facilities were developed using the following sources and references.)*

- Baltimore County, Maryland Soil Conservation District, As-Built Stormwater Management Pond Checklist.
- James City County, Virginia, Guidelines for Design and Construction of Stormwater Management BMP's (October 1999).
- James City County, Virginia, Stormwater Detention/Retention Basin Design Checklist and Erosion and Sediment Control and Stormwater Management Design Plan Checklists.
- James City County Stormwater Policy Framework, Final Report of the James City County BMP Policy Project, October 1998, The Center for Watershed Protection.
- Prince Georges County, Maryland, As-Built Requirements Retention or Detention Pond/Basin.
- Prince William County, Virginia, Stormwater Management Fact Sheet.
- Stafford County, Virginia, As-Built Plan Checklist.
- Stormwater Management Design Manual, NRCS Maryland Code No. 378, Pond Standards and Specifications.
- USEPA/Watershed Management Institute, Stormwater Management Inspection Forms.
- Virginia Impounding Structure Regulations (Dam Safety), Department of Conservation & Recreation, 1997.
- Virginia Erosion and Sediment Control Handbook, Third Edition 1992, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation.
- Virginia Stormwater Management Handbook, 1999 edition, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation.

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0.14 AC
C=0.90

THIS AREA IS TREATED BY THE NEW BMP PROPOSED HEREIN.

0.09 AC
C=0.90

THIS AREA BYPASSES THE NEW BMP AND WILL BE TREATED BY DOWNSTREAM POND.

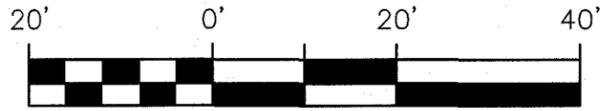
0.06 AC
C=0.39

THIS AREA IS TREATED BY THE NEW BMP PROPOSED HEREIN.

PROPOSED DRAINAGE AREA MAP



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GRAPHIC SCALE
1" = 20'

PROJ# 09113

NOTES:

- THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND THEREFORE MAY NOT SHOW ANY/EASEMENTS OR RESTRICTIONS THAT MAY AFFECT THE PROPERTY AS SHOWN.
- NORTH MERIDIAN SHOWN HEREON IS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM (NAD) 1983/1986.
- ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM 1929, NGVD 29 AS REFERENCED FROM JAMES CITY COUNTY PRIMARY SERVICE AREA GEODETIC GROUND CONTROL NETWORK JULY 1990 SURVEY MARK REFERENCE AND RECOVERY DATA SHEET, STATION "320", ELEVATION = 30.18.
- AS-BUILT SURVEY WAS PERFORMED IN THE FIELD BY MSA, PC, 3-14-13.
- THE PURPOSE OF THIS RECORD DRAWING IS TO SHOW AS-BUILT CONDITIONS OF THE STORM WATER SYSTEM IMPROVEMENTS AS PER SITE PLAN #SP-011-10 AND SHOULD NOT BE CONSIDERED A BOUNDARY SURVEY OR SUBDIVISION OF LAND.

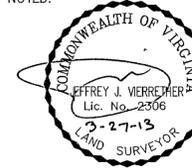
TBM BENCHMARK IS CUT SQUARE IN CONCRETE. ELEVATION = 36.71 NGVD 29



WILLIAMSBURG-JAMES CITY COUNTY
SCHOOL BOARD
(DB 694, PG 434)
PARCEL 1
(MB 54, PG 53)
TAX PARCEL 4610100002D
AREA = 80.01± ACRES (PLAT)

WILLIAMSBURG-JAMES CITY COUNTY
SCHOOL BOARD
(DB 694, PG 434)
PARCEL 1
(MB 54, PG 53)
TAX PARCEL 4610100002D
AREA = 80.01± ACRES (PLAT)

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.



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APR 10 2013
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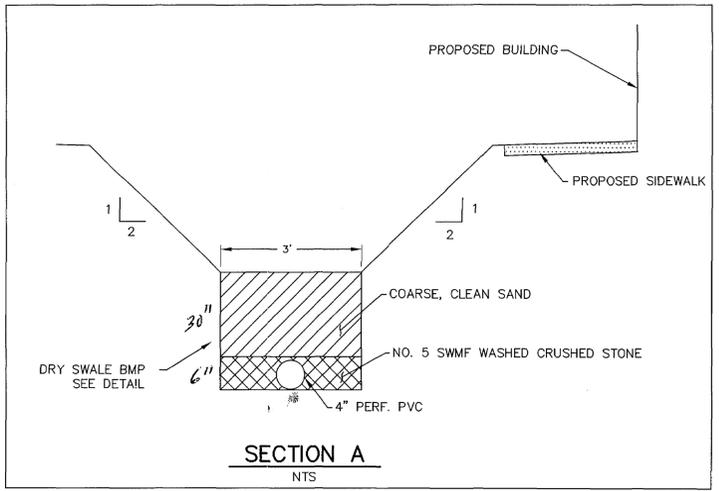
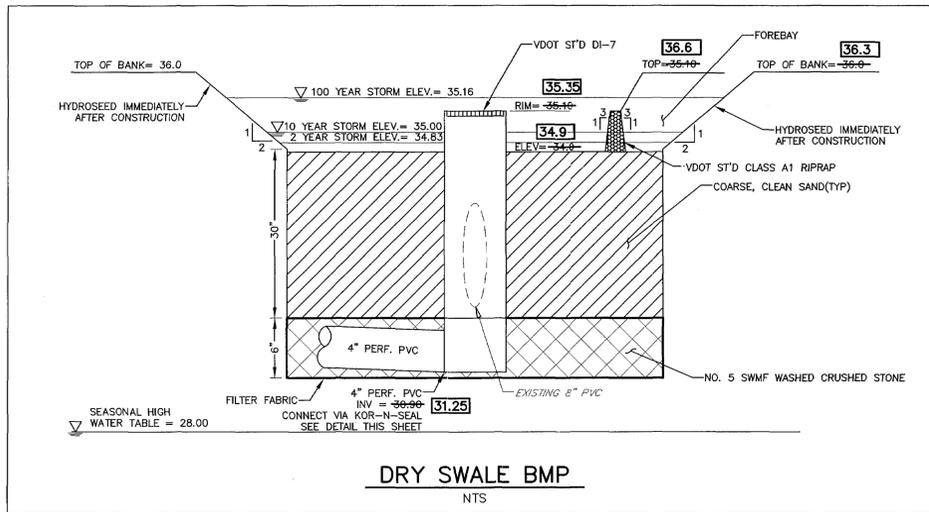
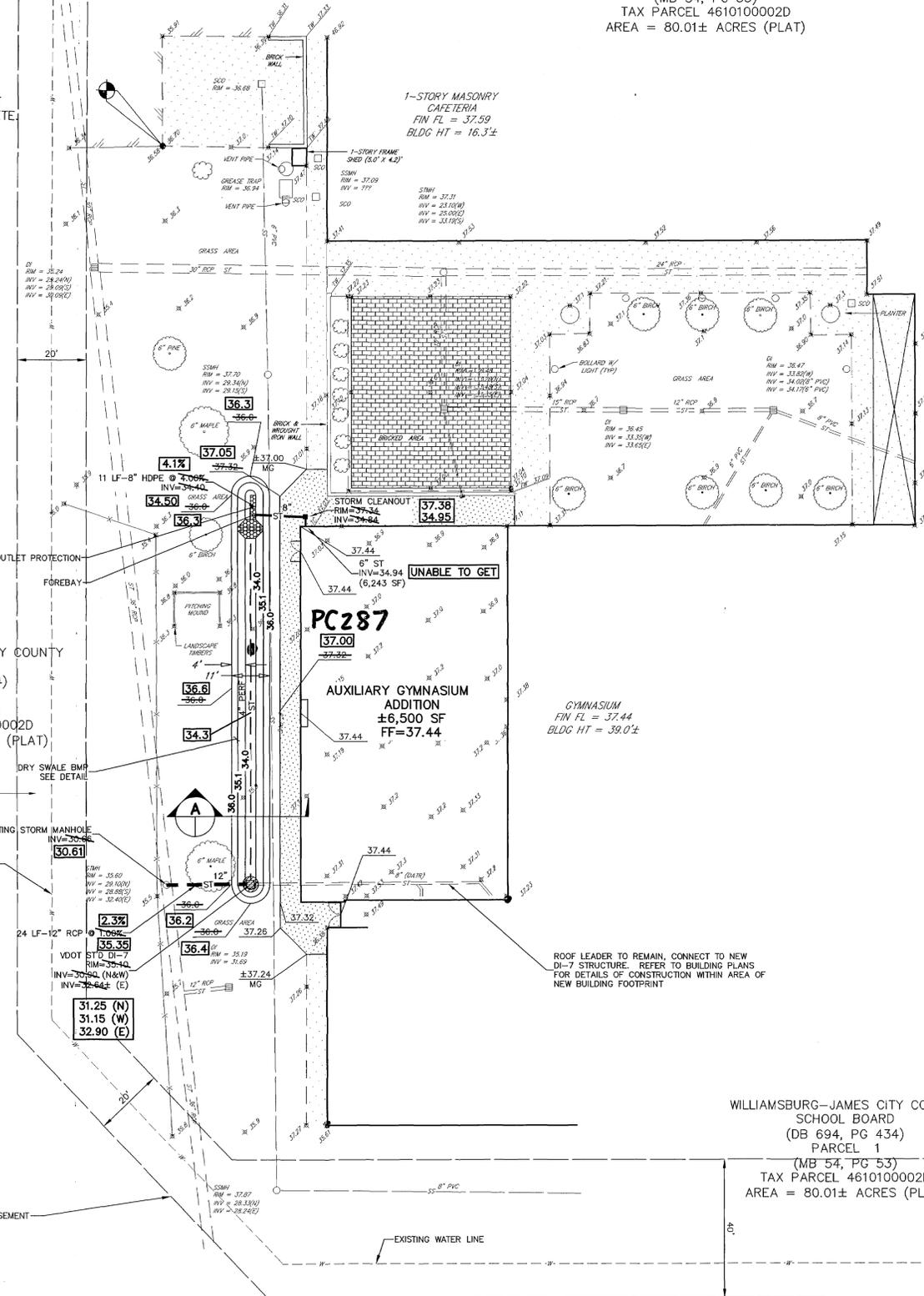


DESIGNED NAH
DRAWN MJD/CJS
CHECKED JUV
APPROVED JUV
DATE 3-27-13

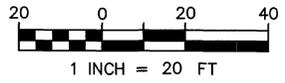
REVISION	DATE	DESCRIPTION

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RECORD DRAWING OF
STORM WATER SYSTEM IMPROVEMENTS
JAMESTOWN HIGH SCHOOL
AUXILIARY GYMNASIUM ADDITION
JAMES CITY COUNTY



- BMP MAINTENANCE SCHEDULE**
- THE DRY SWALE BMP SHALL BE INSPECTED MONTHLY AND AFTER MAJOR STORM EVENTS FOR ACCUMULATED SEDIMENT AND TO REPAIR ANY EROSION.
 - SEDIMENT, DEBRIS, AND LITTER SHALL BE REMOVED FROM THE BASIN AREAS AND OUTFALLS TO PREVENT CLOGGING. INSPECT FOR AND REPAIR ANY EROSION. REMULCH ANY VOID AREAS AS NEEDED.
 - THE OWNER/DEVELOPER IS RESPONSIBLE FOR MAINTENANCE AND RECONSTRUCTING THE STORMWATER MANAGEMENT FACILITY SHOULD IT MALFUNCTION OR CEASE TO OPERATE AT THEIR OWN COST.



RECORD DRAWING
JAMES CITY COUNTY
SITE PLAN # SP-011-10

PLAN STATUS		
DATE	INITIAL	DESCRIPTION
3-27-13	JUV	1st CITY SUBMITTAL

SHEET
1
1 of 1 Sheets
SCALE: 1"=20'
PROJ. NO.: 09113

PC 287; SP-11-10

NOTES:

1. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE REPORT AND THEREFORE MAY NOT SHOW ANY EASEMENTS OR RESTRICTIONS THAT MAY AFFECT THE PROPERTY AS SHOWN.
2. NORTH MERIDIAN SHOWN HEREON IS BASED ON VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM (NAD) 1983/1986.
3. ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC VERTICAL DATUM 1929. NGVD 29 AS REFERENCED FROM JAMES CITY COUNTY PRIMARY SERVICE AREA GEODETIC GROUND CONTROL NETWORK JULY 1990 SURVEY MARK REFERENCE AND RECOVERY DATA SHEET, STATION "320", ELEVATION = 30.18.
4. AS-BUILT SURVEY WAS PERFORMED IN THE FIELD BY MSA, PC, 3-14-13.
5. THE PURPOSE OF THIS RECORD DRAWING IS TO SHOW AS-BUILT CONDITIONS OF THE STORM WATER SYSTEM IMPROVEMENTS AS PER SITE PLAN #SP-011-10 AND SHOULD NOT BE CONSIDERED A BOUNDARY SURVEY OR SUBDIVISION OF LAND.

 **TBM**
 BENCHMARK IS CUT
 SQUARE IN CONCRETE
 ELEVATION = 36.71
 NGVD 29

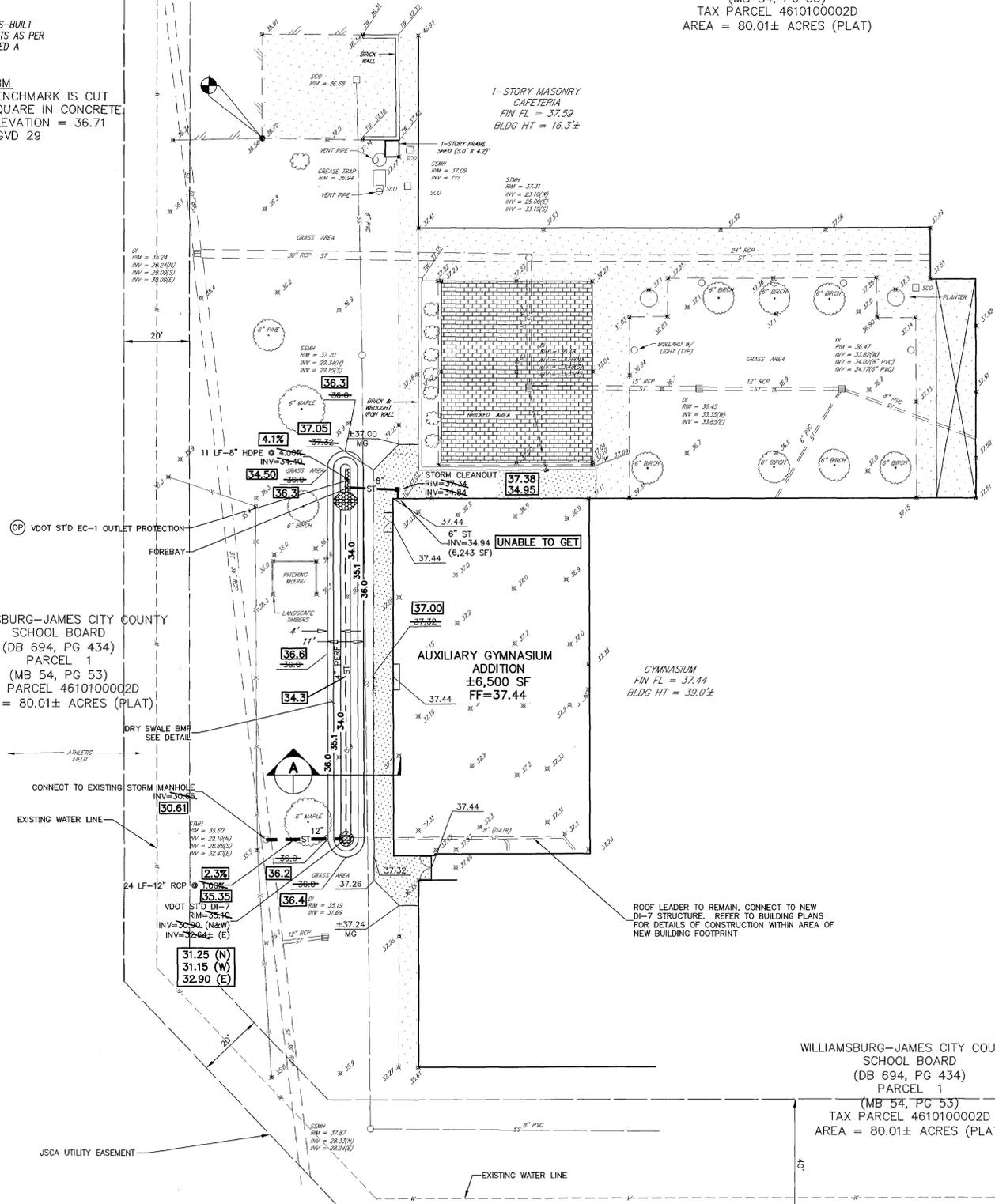
(MB 54, PG 53)

WILLIAMSBURG-JAMES CITY COUNTY
 SCHOOL BOARD
 (DB 694, PG 434)
 PARCEL 1
 (MB 54, PG 53)
 TAX PARCEL 4610100002D
 AREA = 80.01± ACRES (PLAT)

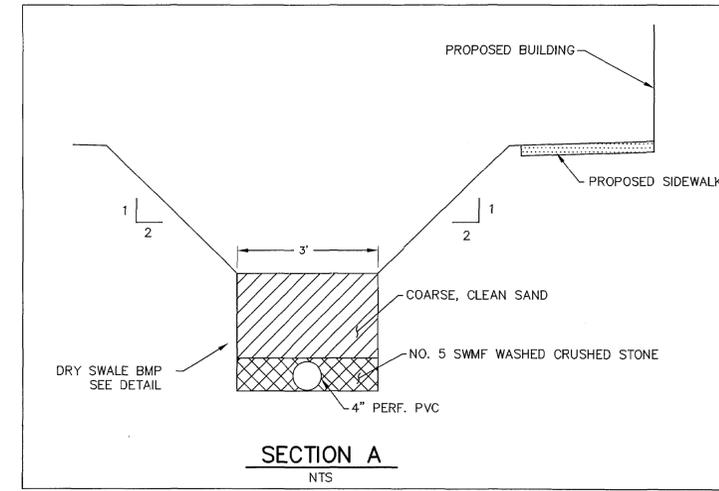
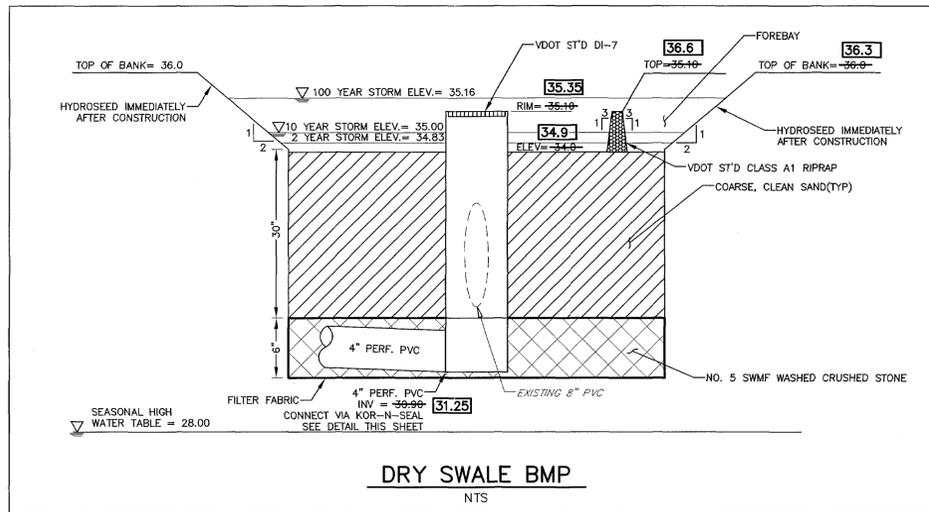
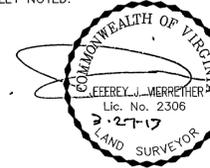
CONNECT TO EXISTING STORM MANHOLE
 INV=30.86
 EXISTING WATER LINE

JSCA UTILITY EASEMENT

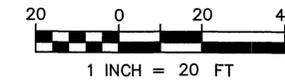
WILLIAMSBURG-JAMES CITY COUNTY
 SCHOOL BOARD
 (DB 694, PG 434)
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 (MB 54, PG 53)
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 DRAWING REPRESENTS THE ACTUAL CONDITION OF THE STORMWATER
 MANAGEMENT/BMP FACILITY. THE FACILITY APPEARS TO CONFORM WITH THE
 PROVISIONS OF THE APPROVED DESIGN PLAN, SPECIFICATIONS AND STORMWATER
 MANAGEMENT PLAN, EXCEPT AS SPECIFICALLY NOTED.



- BMP MAINTENANCE SCHEDULE**
1. THE DRY SWALE BMP SHALL BE INSPECTED MONTHLY AND AFTER MAJOR STORM EVENTS FOR ACCUMULATED SEDIMENT AND TO REPAIR ANY EROSION.
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 3. THE OWNER/DEVELOPER IS RESPONSIBLE FOR MAINTENANCE AND RECONSTRUCTING THE STORMWATER MANAGEMENT FACILITY SHOULD IT MALFUNCTION OR CEASE TO OPERATE AT THEIR OWN COST.



RECORD DRAWING
 JAMES CITY COUNTY
 SITE PLAN # SP-011-10

PLAN STATUS		
DATE	INITIAL	DESCRIPTION
3-27-13	JUV	1st CITY SUBMITTAL

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DESIGNED	NAH
DRAWN	MJD/CJS
CHECKED	JUV
APPROVED	JUV
DATE	3-27-13

REVISION DATE DESCRIPTION
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VIRGINIA
 RECORD DRAWING OF
 STORM WATER SYSTEM IMPROVEMENTS
 JAMESTOWN HIGH SCHOOL
 AUXILIARY GYMNASIUM ADDITION
 JAMES CITY COUNTY

SHEET
 1
 1 of 1 Sheets
 SCALE: 1"=20'
 PROJ. NO.: 09113

WILLIAMSBURG-JAMES CITY COUNTY
SCHOOL BOARD
(DB 694, PG 434)
PARCEL 1
(MB 54, PG 53)
TAX PARCEL 4610100002D
AREA = 80.01± ACRES (PLAT)

TBM
BENCHMARK IS CUT
SQUARE IN CONCRETE.
ELEVATION = 36.71
NGVD 29 (SEE NOTE 6)

(MB 54, PG 53)

WILLIAMSBURG-JAMES CITY COUNTY
SCHOOL BOARD
(DB 694, PG 434)
PARCEL 1
(MB 54, PG 53)
TAX PARCEL 4610100002D
AREA = 80.01± ACRES (PLAT)

GYMNASIUM
FIN FL = 37.44
BLDG HT = 39.0±

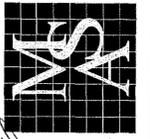
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SCHOOL BOARD
(DB 694, PG 434)
PARCEL 1
(MB 54, PG 53)
TAX PARCEL 4610100002D
AREA = 80.01± ACRES (PLAT)

SOIL DESCRIPTIONS:
23 NEWFLAT SILT LOAM,
0 TO 2 PERCENT SLOPE
9 CHICKAHOMINY SILT LOAM,
0 TO 2 PERCENT SLOPE

*** CAUTION ***
THE UTILITIES SHOWN ARE SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY.
THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER
ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE
THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES
WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES
BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
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DESIGNED	NAH
DRAWN	MJD
CHECKED	MSG
APPROVED	MSG
DATE	6/8/11

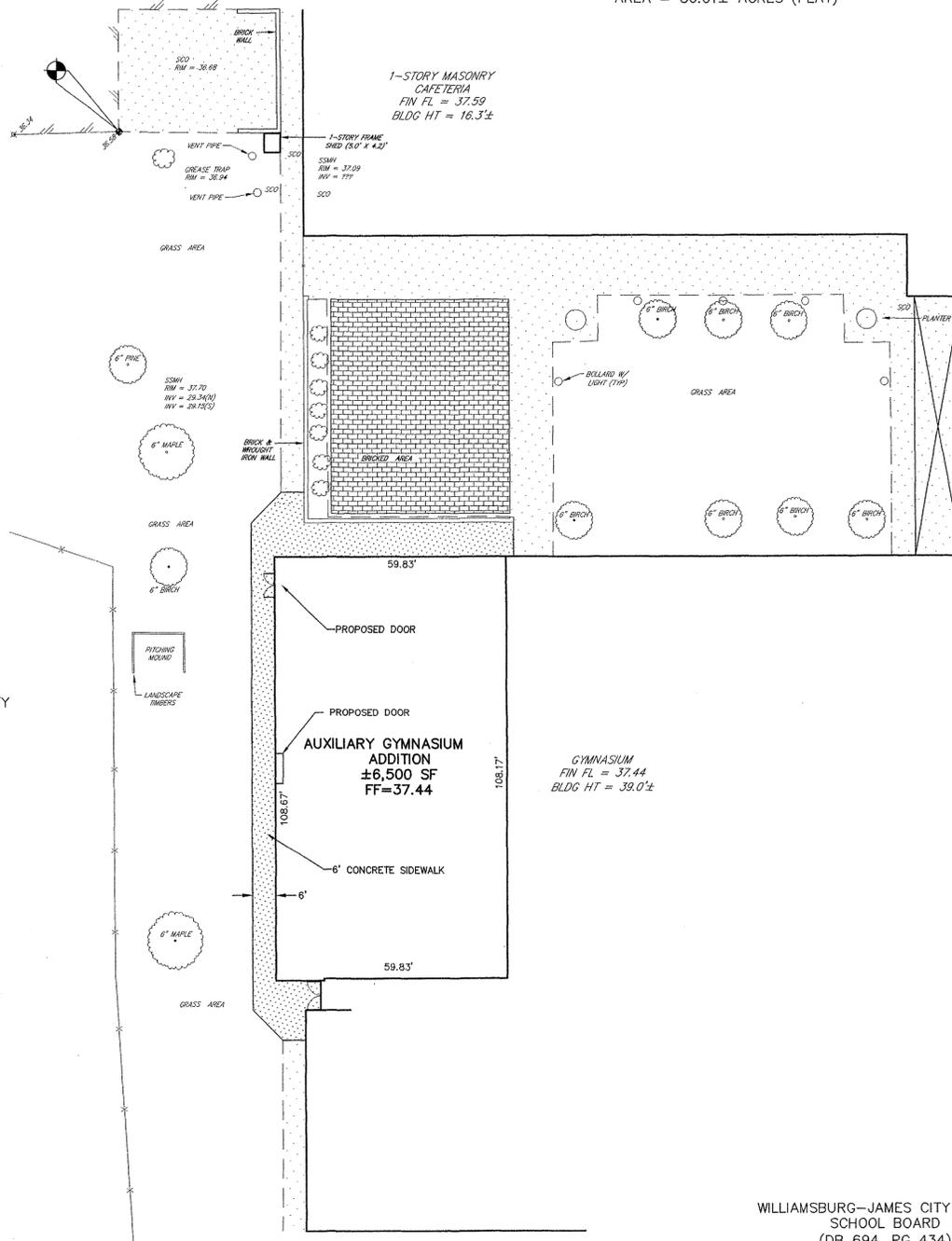
REVISION	DATE	DESCRIPTION

EXISTING CONDITIONS
FOR
**JAMESTOWN HIGH SCHOOL
AUXILIARY GYMNASIUM ADDITIOAN**
JAMES CITY COUNTY
VIRGINIA

SHEET
C2.0
3 of 8 Sheets
SCALE: 1"=20'
PROJ. NO.: 09113

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 SCHOOL BOARD
 (DB 694, PG 434)
 PARCEL 1
 (MB 54, PG 53)
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 AREA = 80.01± ACRES (PLAT)

TBM
 BENCHMARK IS CUT
 SQUARE IN CONCRETE.
 ELEVATION = 36.71
 NGVD 29 (SEE NOTE 6)



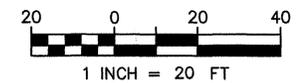
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 SCHOOL BOARD
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 PARCEL 1
 (MB 54, PG 53)
 TAX PARCEL 4610100002D
 AREA = 80.01± ACRES (PLAT)

NOTES:
 1. ALL NEW SIGNS SHALL BE IN ACCORDANCE WITH ARTICLE II, DIVISION 3 OF THE JAMES CITY COUNTY ZONING ORDINANCE.
 2. FOR EXACT BUILDING DIMENSIONS SEE ARCHITECTURAL PLANS

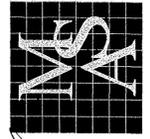
ENVIRONMENTAL INVENTORY	
1. TIDAL WETLANDS:	NO IMPACT
2. TIDAL SHORES:	NO IMPACT
3. NONTIDAL WETLANDS:	NO IMPACT
4. 100-FOOT BUFFER AREA:	NO IMPACT
5. NONTIDAL WETLANDS:	NO IMPACT
6. 100-YR FLOODPLAINS:	NO IMPACT
7. SLOPES 25% OR GREATER:	NO IMPACT

*** CAUTION ***
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 CALL MISS UTILITY: 1-800-552-7001



(MB 54, PG 53)

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DESIGNED	NAH	DATE	6/8/11
DRAWN	MJD		
CHECKED	MSG		
APPROVED	MSG		

REVISION	DESCRIPTION	DATE

VIRGINIA

DIMENSIONAL LAYOUT PLAN
 FOR
JAMESTOWN HIGH SCHOOL
 AUXILIARY GYMNASIUM ADDITION
 JAMES CITY COUNTY

SHEET
C4.0
 5 of 8 Sheets
 SCALE: 1"=20'
 PROJ. NO.: 09113

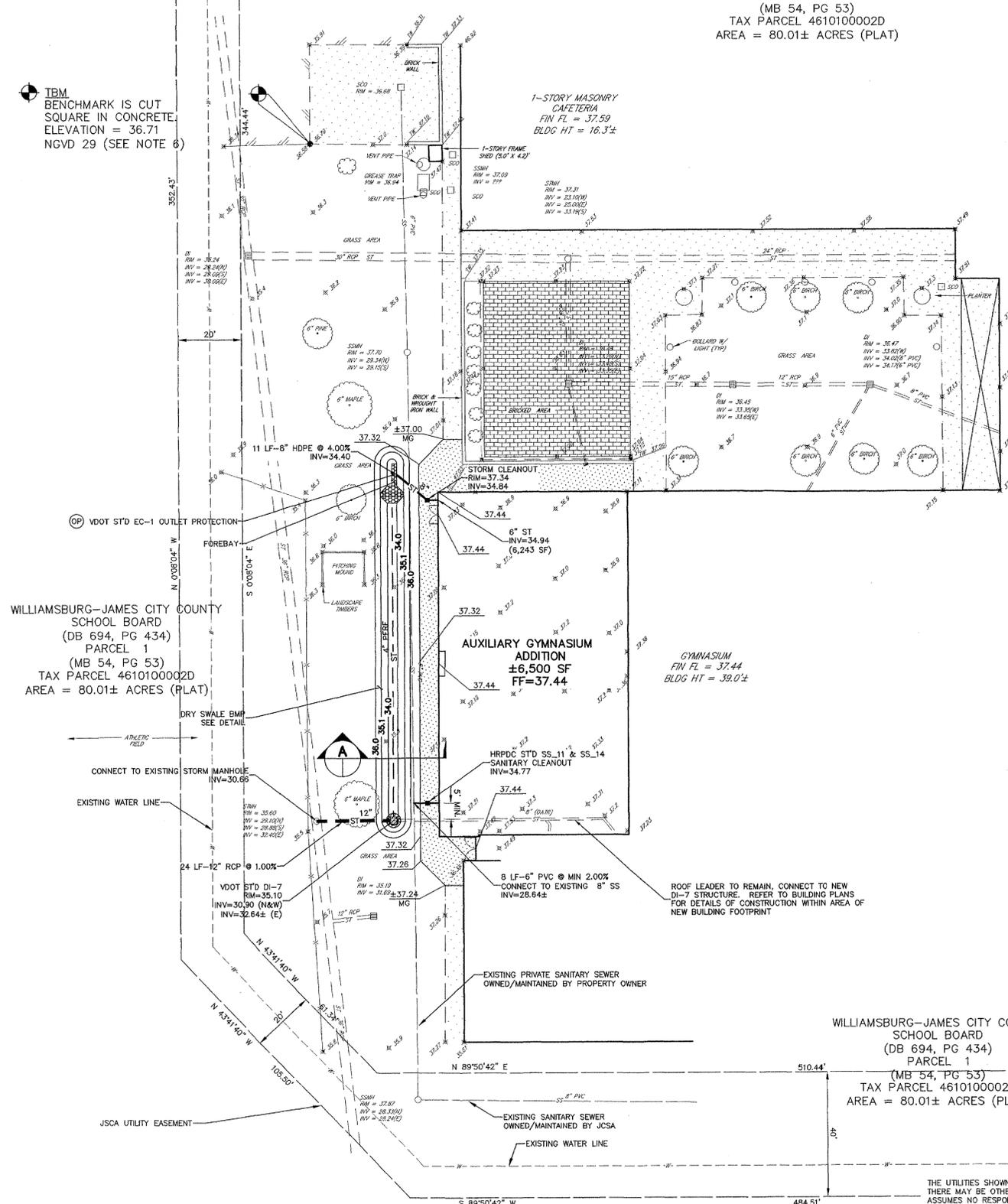
WILLIAMSBURG-JAMES CITY COUNTY
SCHOOL BOARD
(DB 694, PG 434)
PARCEL 1
(MB 54, PG 53)
TAX PARCEL 4610100002D
AREA = 80.01± ACRES (PLAT)

IBM
BENCHMARK IS CUT
SQUARE IN CONCRETE
ELEVATION = 36.71
NGVD 29 (SEE NOTE 6)

(MB 54, PG 53)

WILLIAMSBURG-JAMES CITY COUNTY
SCHOOL BOARD
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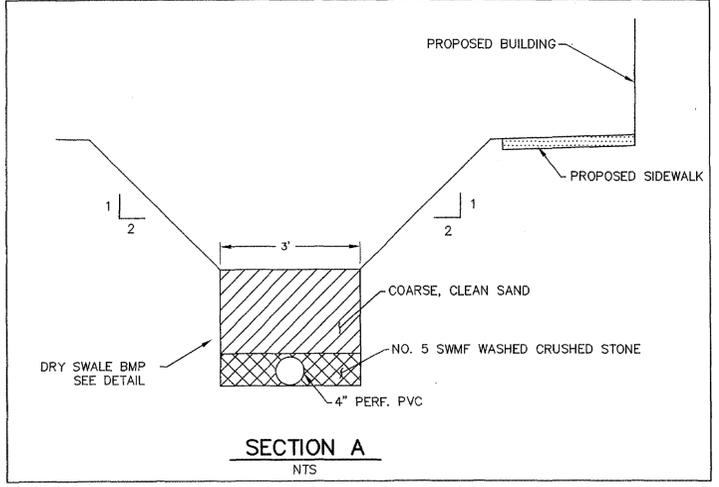
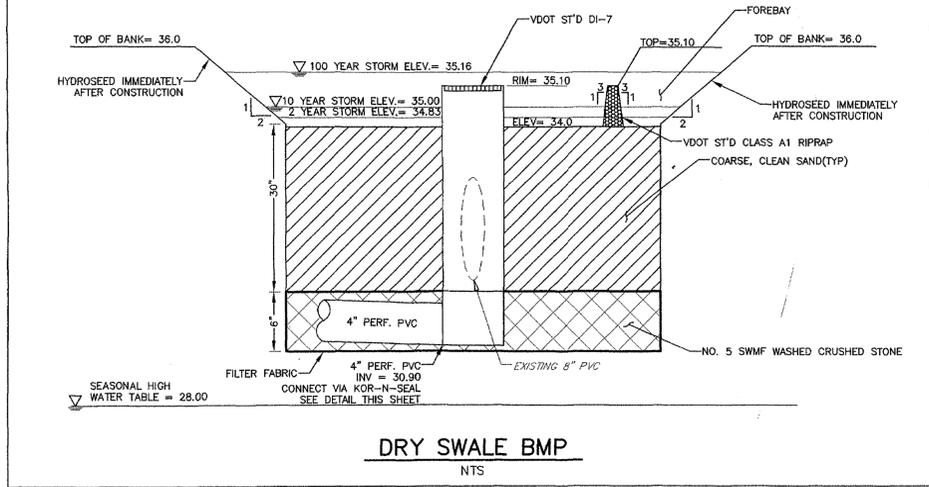
Kor-N-Seal® II 506 Series Connector Installation Instructions

- Connector Installation**
- Check to be sure the EX Series Waveband® is properly located in Connector groove.
 - Inspect the inside surface of the cured hole. If there is porosity or wire-to-concrete separation, use patching or hydraulic cement to smooth the surface.
 - Insert Connector Assembly into hole with Wedge Expander at top of hole.
 - Position Connector so it is square to manhole both vertically and horizontally.
 - Tighten Wedge Expander using 1/2" socket wrench. Trelleborg NPC requires that torque values are between 12 and 20 foot pounds. Torque limiters are available - call Customer Service at 800-626-2180. (Cordless drills and hand or air ratchets may be used). Check calibration of torque limiter monthly.
 - Retorquing prior to shipment is recommended but not required.
- Pipe Installation**
- Be sure sealing area of pipe is smooth and free of defects. Repair if needed.
 - Center pipe in Connector opening. (Pipe must not rest on Connector Waveband)
 - Position the Pipe Clamp in the Connector's Pipe Clamp groove with the screw at the top.
 - Tighten the Pipe Clamp screw to 60 inch pounds with a T-handle Torque Wrench, P/N 800900.
- Note:** On minimum pipe O.D. installation, lift the rubber up underneath the Pipe Clamp screw so that the Connector contacts the bottom surface of the pipe while the Pipe Clamp screw is being tightened. Application of pipe lubrication on the underside of the clamp will also help ensure that an even contraction of rubber is maintained throughout the clamping area.
- Caution:** Do not use impact wrench for installation. All pipe studs must be restrained.
- Using Conspired Pipe:
Adapters are required when using Conspired Pipe. Refer to the Conspired Pipe Adapter Data Sheet for details.
- Patented Waveband technology "captures" the rubber between itself and the concrete, creating a more effective seal.

VDOT WILL HAVE NO MAINTENANCE RESPONSIBILITY FOR THE STORMWATER BMP AND SAVED HARMLESS FROM ANY DAMAGE CAUSED BY FAILURE OF THE BMP AND ITS OUTFLOW STRUCTURE.

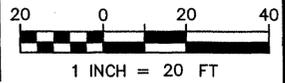
Kor-N-Seal® II 506 Series Connector Sizing Chart

P/N	Suggested Pipe O.D. Range	Hole Size Range				Connector Orientation	Pipe Clamp Qty	P/N	Minimum Manhole Size Required
		A	B	C	D				
9506-18L	15.00 - 15.63	17.08 - 18.13	15.88	16	10.90	2	1282	48/5	
9506-20	15.63 - 17.00	19.08 - 20.13	17.88	17	10.90	2	1282	48/5	
9506-20L	17.00 - 17.63	19.08 - 20.13	17.88	18	10.90	2	1308	48/5	
9506-22L	17.63 - 19.00	21.08 - 22.13	19.88	19	10.90	2	1318	48/5	
9506-24	19.00 - 19.63	21.08 - 22.13	19.88	20	10.90	2	1348	48/5	
9506-24L	19.63 - 21.00	23.08 - 24.13	21.88	21	10.90	4	1380	48/5	
9506-26L	21.00 - 21.63	23.08 - 24.13	21.88	22	10.90	4	1380	48/5	
9506-26	21.63 - 23.00	25.08 - 26.13	23.88	23	10.90	4	1218	48/5	
9506-26L	23.00 - 23.63	25.08 - 26.13	23.88	24	10.90	4	1218	48/5	
9506-28	23.63 - 25.00	27.08 - 28.13	25.88	25	10.90	4	1218	48/5	
9506-28L	25.00 - 25.63	27.08 - 28.13	25.88	26	10.90	4	1218	48/5	
9506-30	25.63 - 27.00	29.08 - 30.13	27.88	27	10.90	4	1218	60/6	
9506-30L	27.00 - 27.63	29.08 - 30.13	27.88	28	10.90	4	1242	60/6	
9506-32	27.63 - 29.00	31.08 - 32.13	29.88	29	10.90	4	1242	60/6	
9506-32L	29.00 - 29.63	31.08 - 32.13	29.88	30	10.90	4	1242	60/6	
9506-34	29.63 - 31.00	33.08 - 34.13	31.88	31	10.90	4	1258	60/6	
9506-34L	31.00 - 31.63	33.08 - 34.13	31.88	32	10.90	4	1258	60/6	
9506-36	31.63 - 33.00	35.08 - 36.13	33.88	33	10.90	4	1282	72/7	
9506-36L	33.00 - 33.63	35.08 - 36.13	33.88	34	10.90	4	1282	72/7	



- BMP MAINTENANCE SCHEDULE**
- THE DRY SWALE BMP SHALL BE INSPECTED MONTHLY AND AFTER MAJOR STORM EVENTS FOR ACCUMULATED SEDIMENT AND TO REPAIR ANY EROSION.
 - SEDIMENT, DEBRIS, AND LITTER SHALL BE REMOVED FROM THE BASIN AREAS AND OUTFALLS TO PREVENT CLOGGING. INSPECT FOR AND REPAIR ANY EROSION, REMULCH ANY VOID AREAS AS NEEDED.
 - THE OWNER/DEVELOPER IS RESPONSIBLE FOR MAINTENANCE AND RECONSTRUCTING THE STORMWATER MANAGEMENT FACILITY SHOULD IT MALFUNCTION OR CEASE TO OPERATE AT THEIR OWN COST.

NOTE: ALL NEW UTILITIES SHALL BE PLACED UNDERGROUND



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www.msaonline.com

Offices in Hampton Roads & Virginia's Eastern Shore

DESIGNED: NAH
DRAWN: MJD
CHECKED: MSG
APPROVED: MSG
DATE: 6/8/11

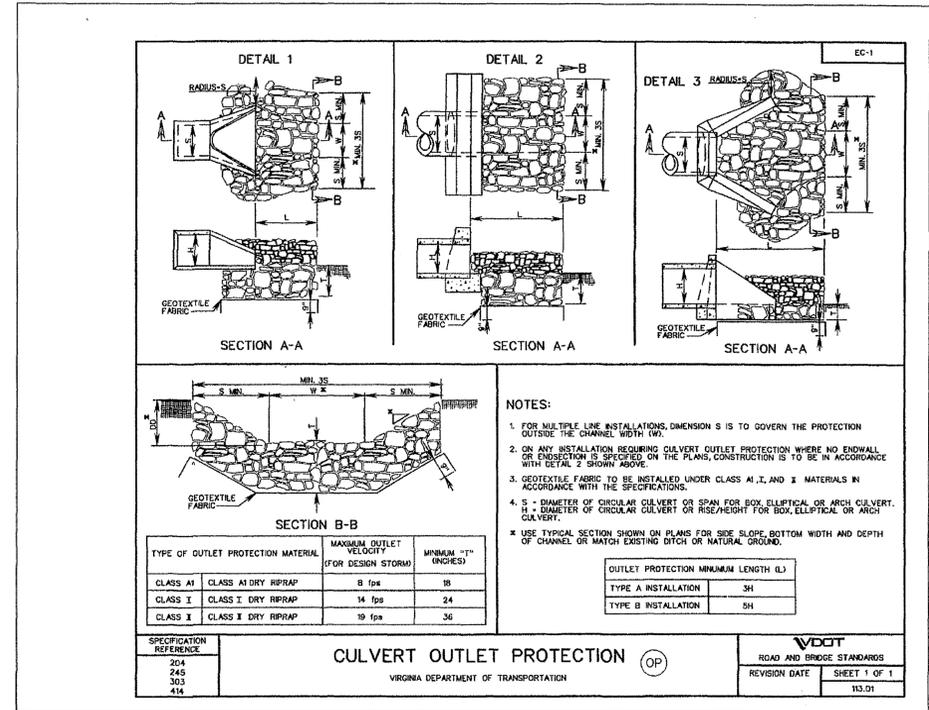
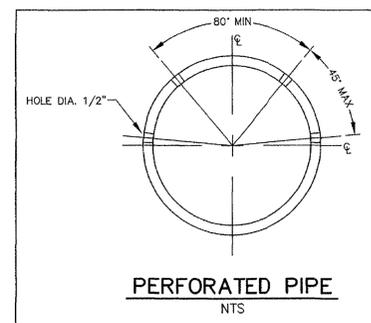
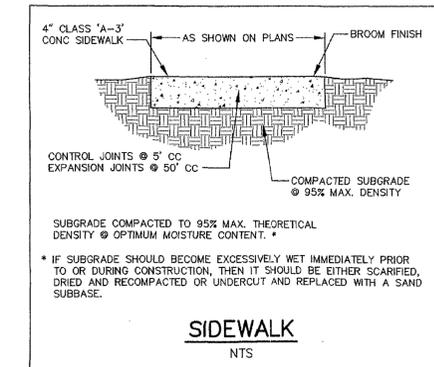
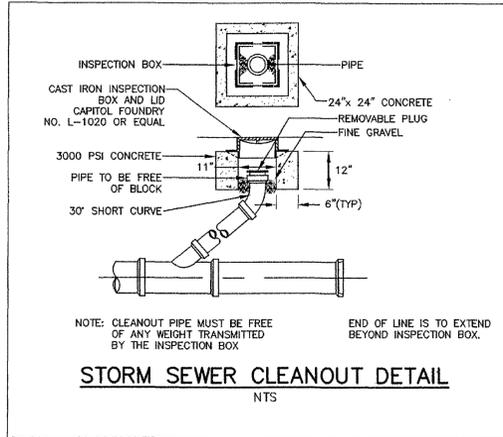
GRADING, DRAINAGE AND UTILITIES PLAN
FOR
JAMESTOWN HIGH SCHOOL
AUXILIARY GYMNASIUM ADDITION

VIRGINIA
JAMES CITY COUNTY

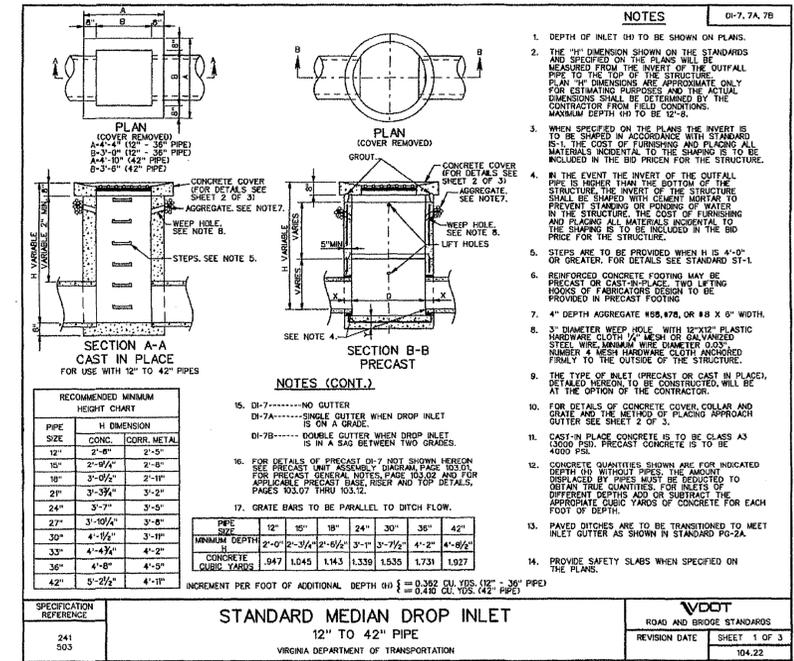
SHEET
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6 of 8 Sheets
SCALE: 1"=20'
PROJ. NO.: 09113

JCSA GENERAL NOTES FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEMS: (REVISED MARCH 2008)

- A. ALL COMPONENTS OF THE WATER DISTRIBUTION AND SANITARY SEWER SYSTEM SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH THE LATEST EDITION OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA FOR WATER DISTRIBUTION AND SANITARY SEWER SYSTEM, THE HRPDC REGIONAL CONSTRUCTION STANDARDS (FOURTH EDITION WITH AMENDMENTS DATED OCTOBER 2008), AND THE COMMONWEALTH OF VIRGINIA DEPARTMENT OF HEALTH **WATERWORKS AND SANITARY SEWERAGE REGULATIONS**. THE CONTRACTOR SHALL USE ONLY NEW MATERIALS, PARTS, AND PRODUCTS ON ALL PROJECTS. ALL MATERIALS SHALL BE STORED SO AS TO ASSURE THE PRESERVATION OF THEIR QUALITY AND FITNESS FOR THE WORK. A COPY OF THE JCSA DESIGN AND ACCEPTANCE CRITERIA AND HRPDC REGIONAL CONSTRUCTION STANDARDS MUST BE KEPT ON-SITE BY THE CONTRACTOR DURING TIME OF INSTALLING, TESTING AND CONVEYING FACILITIES TO JCSA.
- B. THE CONTRACTOR/DEVELOPER SHALL ACQUIRE A CERTIFICATE TO CONSTRUCT WATER AND SANITARY SEWER FACILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY WATER OR SANITARY SEWER FACILITIES.
- C. A PRECONSTRUCTION MEETING SHALL BE HELD BETWEEN JCSA, THE DEVELOPER, THE CONTRACTOR INCLUDING RELEVANT SUBCONTRACTOR(S), AND THE PROJECT ENGINEER PRIOR TO ISSUANCE OF A JCSA CERTIFICATE TO CONSTRUCT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SCHEDULE THIS MEETING WITH JCSA AND COORDINATE WITH THE OTHER ATTENDEES.
- D. THE DEVELOPER'S REPRESENTATIVE SHALL SUBMIT SHOP DRAWINGS FOR ALL MATERIALS AND RECEIVE JCSA APPROVAL PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL MATERIALS ORDERED AND INSTALLED PRIOR TO JCSA'S REVIEW AND ACCEPTANCE WILL BE AT THE CONTRACTOR'S/DEVELOPER'S RISK.
- E. PIPE LINES AND SERVICES SHALL BE INSTALLED AFTER GRADING TO WITHIN 6-INCHES OF FINAL GRADE AND PRIOR TO PLACEMENT OF BASE MATERIAL.
- F. ALL WATER MAINS SHALL BE FULLY FLUSHED, PRESSURE TESTED, AND DISINFECTED AND SATISFACTORY SAMPLES OBTAINED, IN ACCORDANCE WITH JCSA DESIGN AND ACCEPTANCE CRITERIA. FLUSHING OF WATER MAINS SHALL BE SCHEDULED WITH THE JCSA INSPECTOR MINIMUM 3 BUSINESS DAYS PRIOR TO FLUSHING. CONTRACTOR SHALL PROVIDE THE REQUIRED DURATION AND VOLUME TO THE INSPECTOR. FLUSHING WILL BE SCHEDULED ONLY ON MONDAYS, UNLESS AUTHORIZED OTHERWISE BY JCSA, AND WILL BE ON A FIRST-COME-FIRST-SERVE BASIS.
- G. ROUTINE PERIODIC INSPECTIONS DURING CONSTRUCTION WILL BE PROVIDED BY JCSA. THESE INSPECTIONS DO NOT RELIEVE THE DEVELOPER/CONTRACTOR/OWNER FROM HIS OBLIGATION AND RESPONSIBILITY FOR CONSTRUCTING A WATER DISTRIBUTION AND SANITARY SEWER SYSTEM IN STRICT ACCORDANCE WITH THE JCSA DESIGN AND ACCEPTANCE CRITERIA.
- H. ANY FIELD MODIFICATION OR CHANGES TO THE APPROVED PLANS SHALL BE VERIFIED AND CHECKED BY THE ENGINEER OF RECORD AND APPROVED BY JCSA PRIOR TO ANY FIELD MODIFICATIONS OR CHANGES. ALL APPROVED CHANGES AND FIELD MODIFICATIONS SHALL BE ACCURATELY INDICATED ON THE RECORD DRAWINGS.
- I. ALL LOTS SHALL BE PROVIDED WITH WATER SERVICE AND SANITARY CONNECTIONS. THE CONNECTIONS SHALL BE EXTENDED FROM THE MAIN TO THE PROPERTY LINE OR EASEMENT LINE, AND SHALL TERMINATE WITH A YOKE IN A METER BOX, OR AT THE CLEAN OUT, SET AT FINAL FINISHED GRADE. METERS FOR ALL LOTS (UNITS) SHALL BE PAID FOR BY THE DEVELOPER OR BUILDER AND INSTALLED BY JCSA.
- J. ANY REQUIRED EASEMENTS, PERMITS AND APPROVALS SHALL BE ACQUIRED BY THE DEVELOPER PRIOR TO COMMENCEMENT OF WATER MAIN AND/OR SANITARY SEWER CONSTRUCTION.
- K. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND ORDERS OF ANY PUBLIC BODY HAVING JURISDICTION. THE CONTRACTOR SHALL ERRECT AND MAINTAIN, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR SAFETY AND PROTECTION. THE CONTRACTOR SHALL ALSO NOTIFY "MISS UTILITY" AT 1-800-552-7001 OR 811 PRIOR TO PERFORMING ANY UNDERGROUND EXCAVATION.
- L. WATER METER BOX INSTALLATION SHALL MAINTAIN A MINIMUM 18-INCH HORIZONTAL, EDGE-TO-EDGE CLEARANCE FROM DRIVEWAYS AND/OR DRIVE PATHS, SIDEWALKS, BIKE PATHS, CURBING AND ADJACENT WATER METER BOXES.
- M. ONLY JCSA PERSONNEL ARE AUTHORIZED TO OPERATE VALVES ON EXISTING JCSA WATER MAINS AND SANITARY FORCE MAINS. ONCE A SYSTEM HAS BEEN HYDRAULICALLY ENERGIZED, JCSA WILL BE RESPONSIBLE FOR OPERATING THE VALVES. THE CONTRACTOR SHALL CONTACT JCSA OPERATIONS AT 757-229-7421 IF THERE IS AN EMERGENCY OR NEED TO OPEN/CLOSE A VALVE.
- N. ANY EXISTING UNUSED WELL(S) SHALL BE ABANDONED IN ACCORDANCE WITH STATE PRIVATE WELL REGULATIONS AND JAMES CITY COUNTY CODE.
- O. BEDDING OF JCSA UTILITIES SHALL BE IN ACCORDANCE WITH HRPDC DETAIL EW_01.
- P. NO TREES, SHRUBS, STRUCTURES, FENCES, IRRIGATION MAINS, INVISIBLE PET FENCES OR OTHER OBSTACLES SHALL BE PLACED WITHIN AN EASEMENT WHICH WOULD RENDER THE EASEMENT INACCESSIBLE BY EQUIPMENT. SHRUBS SHALL BE A MINIMUM OF 5 FEET, AND TREES A MINIMUM OF 10 FEET, FROM THE CENTER OF WATER AND SANITARY SEWER PIPELINES.
- Q. JOINT RESTRAINT SHALL BE PROVIDED IN ACCORDANCE WITH MINIMUM REQUIREMENTS OF JCSA DETAILS J-1, UNLESS SHOWN OTHERWISE ON THE PLANS. ALL PRESSURE PIPELINES SHALL HAVE JOINT RESTRAINT. FIRE HYDRANTS SHALL BE RESTRAINED AT LEAST ONE FULL JOINT OF PIPE IN EACH DIRECTION.
- R. PROPOSED WATER AND SANITARY SEWER SYSTEMS SHALL MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF 5- FEET FROM OTHER UTILITIES AND STRUCTURES, INCLUDING BUT NOT LIMITED TO STORM SEWERS, STREET LIGHTS, ETC. WATER AND SANITARY SEWER FACILITIES SHALL HAVE A MINIMUM 10-FOOT HORIZONTAL, EDGE-TO-EDGE SEPARATION.
- S. ANY PROPOSED BACKFLOW PREVENTION DEVICE AND/OR GREASE TRAP MUST BE INSPECTED BY THE JCSA UTILITY SPECIAL PROJECTS COORDINATOR AT (757) 259-4138.
- T. THE CONTRACTOR/DEVELOPER SHALL ACQUIRE A CERTIFICATE TO CONSTRUCT WATER AND SANITARY SEWER FACILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION OF ANY WATER OR SANITARY SEWER FACILITIES. PLUMBING INSIDE OF PROPOSED BUILDINGS MUST BE INSPECTED BY JCSA'S UTILITY SPECIAL PROJECTS COORDINATOR AT (757) 259-4138, FOR POTENTIAL CROSS CONNECTIONS. ANY GROSS CONNECTIONS MUST BE PROTECTED BY THE APPROPRIATE BACKFLOW PREVENTION DEVICE(S).
- U. EASEMENTS DENOTED AS "JCSA UTILITY EASEMENTS" ARE FOR EXCLUSIVE USE OF THE JAMES CITY SERVICE AUTHORITY AND THE PROPERTY OWNER. OTHER UTILITY SERVICE PROVIDERS DESIRING TO USE THESE EASEMENTS WITH THE EXCEPTION OF PERPENDICULAR UTILITY CROSSINGS MUST OBTAIN AUTHORIZATION FOR ACCESS AND USE FROM THE JCSA AND THE PROPERTY OWNER. ADDITIONALLY, JCSA SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE TO IMPROVEMENTS WITHIN THIS EASEMENT, FROM ANY CAUSE.
- V. JCSA SHALL NOT BE HELD RESPONSIBLE FOR ANY PAVEMENT SETTLEMENT DUE TO PIPE BEDDING, BACKFILLING, BACKFILL, ALTERALS OR COMPACTION FOR WATER OR SANITARY SEWER FACILITIES FOR THIS PROJECT.
- W. FIRE HYDRANTS TO BE INSTALLED WITHIN EXISTING OR PROPOSED VDOT RIGHT-OF-WAYS SHALL BE LOCATED IN ACCORDANCE WITH VDOT REQUIREMENTS.
- X. PRIVATELY OWNED UTILITIES, (E.G., WATER AND SEWER LINES AND PRIVATE FIRE SERVICE MAINS), SHOWN ON THE PLANS ARE REGULATED BY THE VIRGINIA UNIFORM STATEWIDE BUILDING CODE, AND ENFORCED BY THE JAMES CITY COUNTY CODES COMPLIANCE DIVISION. THESE PRIVATELY OWNED UTILITIES MUST COMPLY FULLY WITH THE INTERNATIONAL PLUMBING CODE, THE NATIONAL FIRE PROTECTION ASSOCIATION STANDARD 24, AND THE VIRGINIA STATEWIDE FIRE PROTECTION CODE. CONTRACTORS WORKING FROM HIS SITE PLAN ARE CAUTIONED NOT TO INSTALL OR CONCEAL PRIVATELY OWNED SITE UTILITIES WITHOUT FIRST OBTAINING THE REQUIRED PERMITS AND INSPECTIONS.
- Y. SANITARY SEWER LATERALS SHALL NOT CONNECT TO THE MAINLINE WITHIN 5- FEET OF A MANHOLE. LATERALS UPSTREAM AND WITHIN 5- FEET OF THE MANHOLE SHALL CONNECT DIRECTLY INTO THE MANHOLE WHERE NECESSARY.



LOCATION	RIPRAP CLASS	LENGTH	WIDTH	THICKNESS
8" PVC TO BMP	A1	3'	3'	18"



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COMMONWEALTH OF VIRGINIA
MICHAEL S. GAUDY
Lic. No. 040754
Professional Engineer

DESIGNED: NAH
DRAWN: MUD
CHECKED: MSG
APPROVED: MSG
DATE: 6/28/11

REVISIONS

DETAILS FOR
**JAMESTOWN HIGH SCHOOL
AUXILIARY GYMNASIUM**

VIRGINIA
JAMES CITY COUNTY

SHEET
C6.1
8 of 8 Sheets
SCALE: GRAPHIC
PROJ. NO.: 09113



Stormwater Management Report

For

**Jamestown High School
Auxiliary Gymnasium Addition
James City County, Virginia**

Environmental Division

APR 19 2011

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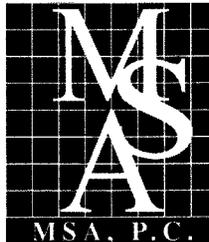
MSA #09113

February 9, 2010

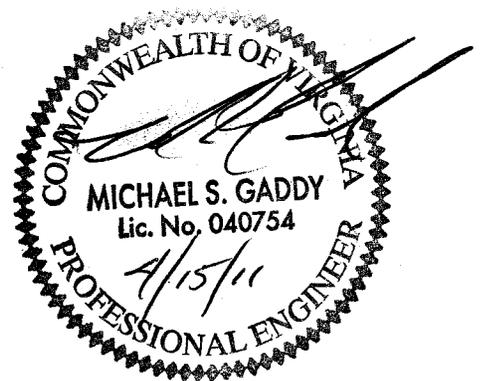
Revised: March 12, 2010

Revised: April 15, 2010

Prepared by:



PL 287
SP-011-10



MSA, P.C.

5033 Rouse Drive

Virginia Beach, Virginia 23462

Telephone (757) 490-9264

Fax Number (757) 490-0634

SP-11-10

FINAL

I. STORMWATER MANAGEMENT NARRATIVE

TABLE OF CONTENTS

- I. STORMWATER MANAGEMENT NARRATIVE**
- II. BMP CALCULATIONS AND VOLUMES**
- III. BMP POINT SYSTEM CALCULATIONS**
- IV. SPECIAL STORMWATER CRITERIA NARRATIVE**
- V. APPENDIX**
 - A. PondPack Routing Calculations for BMP**
 - B. Pre and Post Development Drainage Area Maps**

Drainage Narrative:

The project will consist of the construction of an approximately 6,500 square foot auxiliary gymnasium addition at Jamestown High School in James City County, Virginia. The project site is zoned PL.

The proposed construction will disturb approximately 0.43 acres. The proposed gymnasium addition will increase the site impervious area by approximately 0.18 acres (0.14 acres to new BMP). The total drainage area for the proposed BMP equals 0.20 acres. This includes the majority portion of the new roof area, new exterior sidewalk, and grassed area around the BMP. The proposed dry swale BMP will treat the new impervious area from the gymnasium addition for both water quality and quantity. The entire school site drains to existing BMP ponds onsite.

DA = 0.20 AC.

Existing Conditions

The existing site contains Jamestown High School. The area of the proposed construction slopes away from the existing building and drains to the existing onsite stormwater system. A pre-development area is indicated on the existing drainage area map attached herein. This area is the portion of existing area within the limits of proposed disturbance, and is intended to be the basis of establishing the pre-developed flows. The pre-development flows for the existing drainage areas are as follows:

PRE-DEVELOPMENT FLOWS							
Drainage Location	Drainage Area	Area (Acres)	"C"	T _C (min)	2-yr Peak (cfs)	10-yr Peak (cfs)	100-yr Peak (cfs)
Building	0.08 AC	0.08	0.90	5			
Site	0.21 AC	0.21	0.28	5			
Total		0.29	0.45	5	0.75	0.98	1.30

Proposed Conditions

The project will consist of the construction of an approximately 6,500 square foot auxiliary gymnasium addition. Approximately 0.20 acres of the site will drain to the proposed dry swale BMP. This includes 0.14 acres of new roof and 0.06 acres of new sidewalk and grassed area. A roof area of 0.09 acres will bypass the new dry BMP and will flow downstream to be treated by the existing pond. Since this area (0.20 acres) is the only area draining to the proposed BMP, it is the only area that is routed through the BMP. The dry swale BMP will outfall to the existing onsite stormwater system, which drains to existing BMP ponds onsite.

*DA
0.14
0.06
0.20 AC.*

The dry swale BMP has been sized with a storage volume equivalent to as least 1.0 inch of runoff from the impervious area draining to it per the James City County BMP Guidelines. PondPack Version 10.0 has been used to route the 2, 10, and 100-year storms through the dry swale. Detailed calculations are included in this report.

The post-development, post-routed flows from the site are as follows:

POST-DEVELOPMENT, POST-ROUTED FLOWS							
Drainage Location	Drainage Area	Area (Acres)	"C"	T _C (min)	2-yr Peak (cfs)	10-yr Peak (cfs)	100-yr Peak (cfs)
Building (Bypass BMP)	0.09 AC (0.023 New 0.067 Ex.)	0.09	0.90	5	0.47	0.61	0.81
Building/Site to BMP*	0.14 AC & 0.06 AC	0.20	0.75	5	0.00	0.00	0.31
Total		0.29			0.47	0.61	1.12

EXCEED
2-YR
PRE
ALL MEET
10-YR
PRE

*Flows from PondPack routing calculations for dry swale BMP.

Summary

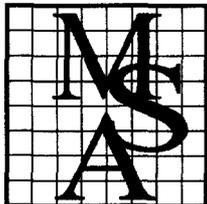
The dry swale BMP has been designed to contain the 2-year, 10-year, and 100-year storm events and will release the runoff at less than the pre-developed rate providing both quantity and quality requirements for the proposed building addition.

which? 2-YEAR

Dry Swale BMP

Water Quality Volume Required	= 582 CF
Water Quality Volume Provided	= 636 CF @ elev = 35.1'
2-year Storage Volume Required	= 423 CF
10-year Storage Volume Required	= 550 CF
100-year Storage Volume Required	= 684 CF
Total Storage Volume Provided	= 1,618 CF @ elev = 36.0'

II. BMP CALCULATIONS AND VOLUMES



BMP VOLUME CALCULATIONS

CALCULATIONS BY: NAH
 CHECKED BY: NAH
 DATE: 1/19/2010
 PROJECT: Jamestown High School
 PROJECT #: 09113

NEW SITE DEVELOPMENT

TOTAL TREATED IMPERVIOUS AREA: (POST CONSTRUCTION)	Existing:	0 SF	0.00 Acres
	Building:	6,243 SF	0.14 Acres
	Pavement:	735 SF	0.02 Acres
	Other:	SF	0.00 Acres

TOTAL: 6,978 SF 0.16 Acres

TOTAL TREATED DRAINAGE AREA: 8,920 SF 0.20 Acres

Calculate BMP Quality Volume requirements

Required BMP Volume = one inch of rainfall over the impervious area

= (1 inch) X (6978 SF)

Vreq = 582 CF

BMP Quality Volume provided

Vprovided = 636 CF

Calculate Forebay volume requirements

Required Forebay Volume = 0.10" to 0.25" of rainfall over the impervious area

= (0.10 inch) X (SF) (minimum)

= (0.25 inch) X (SF) (maximum)

Vreq = 58 CF (min.)

Vreq = 145 CF (max.)

Forebay volume provided

Vprovided = 61 CF

BMP Provided Volume Calculations					
Forebay	Elevation	Contour Area		inc. Vol.	cum. Vol.
	ft	sf	acres	cf	cf
	34.0	25	0.0006	0	0
	35.1	90	0.0021	61	61
Infiltration	Elevation	Contour Area		inc. Vol.	cum. Vol.
	ft	sf	acres	cf	cf
	34.0	304	0.0070	0	0
	35.1	779	0.0179	576	576
	36.0	1333	0.0306	940	1516
Total	Elevation	Contour Area		inc. Vol.	cum. Vol.
	ft	sf	acres	cf	cf
	34.0	329	0.0076	0	0
	35.1	869	0.0199	636	636
	36.0	1333	0.0306	982	1618

III. BMP POINT SYSTEM CALCULATIONS

Table 2

Worksheet for BMP Point System

A. STRUCTURAL BMP POINT ALLOCATION

<u>BMP</u>	<u>BMP Points</u>		<u>Fraction of Site Served by BMP</u>	=	<u>Weighted BMP Points</u>
<u>DRY SWALE</u>	<u>10</u>	x	<u>100%</u>	=	<u>10</u>
_____	_____	x	_____	=	_____
_____	_____	x	_____	=	_____
_____	_____	x	_____	=	_____
TOTAL WEIGHTED STRUCTURAL BMP POINTS:					<u>10</u>

B. NATURAL OPEN SPACE CREDIT

<u>Fraction of Site</u>		<u>Natural Open Space Credit</u>	=	<u>Points for Natural Open Space</u>
_____	x	_____	=	_____
		(0.1 per 1%)		
_____	x	_____	=	_____
		(0.15 per 1%)		
TOTAL NATURAL OPEN SPACE CREDIT:				<u>0</u>

C. TOTAL WEIGHTED POINTS

<u>10</u>	+	<u>0</u>	=	<u>10</u>
Structural BMP Points		Natural Open Space Points		Total

SITE

IV. SPECIAL STORMWATER CRITERIA NARRATIVE

Special Stormwater Criteria Narrative:

Due to the location of the Jamestown High School site in the Powhatan Creek watershed, the auxiliary gymnasium addition is subject to the Special Stormwater Criteria, Type 1. According to the Special Stormwater Criteria guidance document, adopted December 14, 2004, the proposed project is designated as "Redevelopment." The Special Stormwater Criteria Application Matrix requires a project with this designation to meet "1 unit measure from the SSCP Menu."

The project proposes applying Hydroseed to the dry swale side slopes. According to the Menu of Special Stormwater Criteria Practices (Table SSC-2), enhanced channel stabilization practices (SSCP #28) is equivalent to one unit. Therefore, the Special Stormwater Criteria are met with the application of Hydroseed for this project.

ADDITIONS
ARE NOT
REDEVELOPMENT
UNLESS

Dist 0.43 AC
~ 2 units

V. APPENDIX

Appendix A
PondPack Routing Calculations
For BMP

Job File: I:\Projects\09113_Engineering\Calculations\PondPack\09113-BASIN.PPW

Rain Dir: I:\Projects\09113_Engineering\Calculations\PondPack\

=====
JOB TITLE
=====

Project Date: 1/19/2010

Project Engineer: NAH

Project Title: Jamestown High School, James City County, VA

Project Comments:

Dry Swale BMP

MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID

James City Co.

Return Event	Rainfall Type	IDF ID
2 yr	I-D-F Curve	JCC - 2 yr
10 yr	I-D-F Curve	JCC - 10 yr
100 yr	I-D-F Curve	JCC - 100 yr

MASTER NETWORK SUMMARY
Modified Rational Method Network

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
MOD.RAT NET	10	AREA	2	419	L	.0833	.71	
MOD.RAT NET	10	AREA	10	545	L	.0833	.92	
MOD.RAT NET	10	AREA	100	719	L	.0833	1.21	
*OUT	10	JCT	2	0		.0167	.00	
*OUT	10	JCT	10	0		.0167	.00	
*OUT	10	JCT	100	91		.2338	.31	
P	10	IN POND	2	423		.0835	.71	
P	10	IN POND	10	550		.0835	.92	
P	10	IN POND	100	727		.0835	1.21	
P	10	OUT POND	2	0		.0167	.00	34.83
P	10	OUT POND	10	0		.0167	.00	35.00
P	10	OUT POND	100	91		.2338	.31	35.16

Title... Project Date: 1/19/2010
 Project Engineer: NAH
 Project Title: Jamestown High School, James City
 County, VA
 Project Comments:
 Dry Swale BMP

I-D-F DESIGN STORM SUMMARY

Storm Queue File, ID = James City Co.

Storm Tag Name = 2 yr

 File: Type, ID = : I-D-F Storm... JCC - 2 yr
 Storm Frequ. = 2 yr

Storm Tag Name = 10 yr

 File: Type, ID = : I-D-F Storm... JCC - 10 yr
 Storm Frequ. = 10 yr

Storm Tag Name = 100 yr

 File: Type, ID = : I-D-F Storm... JCC - 100 yr
 Storm Frequ. = 100 yr

```

:.....:
TIME OF CONCENTRATION CALCULATOR
:.....:

```

```

-----

```

Segment #1: Tc: User Defined

```

Segment #1 Time:      .0833 hrs

```

```

-----

```

```

=====
Total Tc:      .0833 hrs
=====

```

```

:.....
TIME OF CONCENTRATION CALCULATOR
:.....

```

Segment #1: Tc: User Defined

```

Segment #1 Time: .0833 hrs

```

```

=====
Total Tc: .0833 hrs
=====

```

Type.... Tc Calcs

Page 3.04

Name.... MOD.RAT NET 10 Tag: POST

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

Tc Equations used...

==== User Defined =====

Tc = Value entered by user

Where: Tc = Time of concentration

Elevation (ft)	Planimeter (sq.in)	Area (acres)	$A1+A2+\text{sqr}(A1*A2)$ (acres)	Volume (cu.ft)	Volume Sum (cu.ft)
34.00	-----	.0076	.0000	0	0
35.10	-----	.0199	.0398	636	636
36.00	-----	.0306	.0752	982	1618

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

$$\text{Volume} = (1/3) * (\text{EL2}-\text{EL1}) * (\text{Areal} + \text{Area2} + \text{sq.rt.}(\text{Areal}*\text{Area2}))$$

where: EL1, EL2 = Lower and upper elevations of the increment
 Areal, Area2 = Areas computed for EL1, EL2, respectively
 Volume = Incremental volume between EL1 and EL2

Type.... Outlet Input Data
Name.... PR 10

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 34.00 ft
Increment = .10 ft
Max. Elev.= 36.00 ft

OUTLET CONNECTIVITY

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.	Outfall	E1, ft	E2, ft
-----	----	-----	-----	-----
User Defined Table	DI	---> TW	.000	36.000
TW SETUP, DS Channel				

Name.... PR 10

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

OUTLET STRUCTURE INPUT DATA

Structure ID = DI
Structure Type = User Defined Table

ELEV-FLOW RATING TABLE

Elev, ft	Flow, cfs
34.00	.00
35.10	.00
35.28	1.00
35.45	3.40
35.60	4.00
36.00	5.20

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 100
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .10 cfs
Max. Q tolerance = .10 cfs

Name.... PR 10

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = DI (User Defined Table)

Upstream ID = (Pond Water Surface)

DNstream ID = TW (Pond Outfall)

WS Elev, Device Q	Tail Water	Notes
WS Elev. ft	Q cfs	TW Elev Converge ft +/-ft Computation Messages
34.00	.00	Free Outfall
34.10	.00	Free Outfall Interpolated from input table
34.20	.00	Free Outfall Interpolated from input table
34.30	.00	Free Outfall Interpolated from input table
34.40	.00	Free Outfall Interpolated from input table
34.50	.00	Free Outfall Interpolated from input table
34.60	.00	Free Outfall Interpolated from input table
34.70	.00	Free Outfall Interpolated from input table
34.80	.00	Free Outfall Interpolated from input table
34.90	.00	Free Outfall Interpolated from input table
35.00	.00	Free Outfall Interpolated from input table
35.10	.00	Free Outfall
35.20	.56	Free Outfall Interpolated from input table
35.30	1.28	Free Outfall Interpolated from input table
35.40	2.69	Free Outfall Interpolated from input table
35.50	3.60	Free Outfall Interpolated from input table
35.60	4.00	Free Outfall

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = DI (User Defined Table)

Upstream ID = (Pond Water Surface)

DNstream ID = TW (Pond Outfall)

WS Elev, Device Q		Tail Water		Notes
WS Elev.	Q	TW Elev	Converge	
ft	cfs	ft	+/-ft	Computation Messages
35.70	4.30	Free Outfall		
		Interpolated from input table		
35.80	4.60	Free Outfall		
		Interpolated from input table		
35.90	4.90	Free Outfall		
		Interpolated from input table		
36.00	5.20	Free Outfall		

SUMMARY FOR HYDROGRAPH ADDITION
at Node: P 10 IN

HYG Directory: I:\Projects\09113_Engineering\Calculations\PondPack\

```

=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID        HYG tag
-----
WARNING: Adding in hydrograph that is truncated on left...
WARNING: Missed peak when adding hydrograph...
A 10              MOD.RAT NET 10              MOD.RAT NET 10 2 yr
=====

```

INFLOWS TO: P 10 IN

```

-----
HYG file          HYG ID          HYG tag          Volume      Peak Time     Peak Flow
                   cu.ft          hrs              cfs
-----
MOD.RAT NET 10 2 yr          419           .0833          .71

```

TOTAL FLOW INTO: P 10 IN

```

-----
HYG file          HYG ID          HYG tag          Volume      Peak Time     Peak Flow
                   cu.ft          hrs              cfs
-----
P 10              IN 2 yr          423           .0835          .71

```

TOTAL NODE INFLOW...

HYG file =

HYG ID = P 10 IN

HYG Tag = 2 yr

Peak Discharge = .71 cfs

Time to Peak = .0835 hrs

HYG Volume = 423 cu.ft

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .0167 hrs

Time | Time on left represents time for first value in each row.

Time hrs					
.0000	.00	.14	.28	.42	.57
.0835	.71	.71	.71	.71	.71
.1670	.70	.56	.42	.28	.14
.2505	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: P 10 IN

HYG Directory: I:\Projects\09113_Engineering\Calculations\PondPack\

```

=====
Upstream Link ID  Upstream Node ID  HYG file      HYG ID      HYG tag
-----
A 10              MOD.RAT NET 10              MOD.RAT NET 10 10 yr
=====

```

```

INFLOWS TO: P 10      IN
-----
HYG file      HYG ID      HYG tag      Volume      Peak Time      Peak Flow
              HYG ID      HYG tag      cu.ft       hrs            cfs
-----
              MOD.RAT NET 10 10 yr      545          .0833          .92

```

```

TOTAL FLOW INTO: P 10      IN
-----
HYG file      HYG ID      HYG tag      Volume      Peak Time      Peak Flow
              HYG ID      HYG tag      cu.ft       hrs            cfs
-----
              P 10      IN 10 yr      550          .0835          .92

```

TOTAL NODE INFLOW...

HYG file =

HYG ID = P 10 IN

HYG Tag = 10 yr

Peak Discharge = .92 cfs

Time to Peak = .0835 hrs

HYG Volume = 550 cu.ft

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .0167 hrs

Time |
hrs | Time on left represents time for first value in each row.

.0000	.00	.18	.37	.55	.74
.0835	.92	.92	.92	.92	.92
.1670	.91	.73	.55	.36	.18
.2505	.00				

SUMMARY FOR HYDROGRAPH ADDITION
at Node: P 10 IN

HYG Directory: I:\Projects\09113_Engineering\Calculations\PondPack\

```

=====
Upstream Link ID Upstream Node ID HYG file HYG ID HYG tag
-----
A 10 MOD.RAT NET 10 MOD.RAT NET 10 100 yr
=====

```

```

INFLOWS TO: P 10 IN
-----
HYG file HYG ID HYG tag Volume Peak Time Peak Flow
cu.ft hrs cfs
-----
MOD.RAT NET 10 100 yr 719 .0833 1.21

```

```

TOTAL FLOW INTO: P 10 IN
-----
HYG file HYG ID HYG tag Volume Peak Time Peak Flow
cu.ft hrs cfs
-----
P 10 IN 100 yr 727 .0835 1.21

```

TOTAL NODE INFLOW...

HYG file =

HYG ID = P 10 IN

HYG Tag = 100 yr

Peak Discharge = 1.21 cfs

Time to Peak = .0835 hrs

HYG Volume = 727 cu.ft

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .0167 hrs

Time |
hrs | Time on left represents time for first value in each row.

Time hrs					
.0000	.00	.24	.49	.73	.97
.0835	1.21	1.21	1.21	1.21	1.21
.1670	1.21	.96	.72	.48	.24
.2505	.00				

LEVEL POOL ROUTING SUMMARY

HYG Dir = I:\Projects\09113_Engineering\Calculations\PondPack\
 Inflow HYG file = NONE STORED - P 10 IN 2 yr
 Outflow HYG file = NONE STORED - P 10 OUT 2 yr

Pond Node Data = P 10
 Pond Volume Data = P 10
 Pond Outlet Data = PR 10

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 34.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = .0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
 Peak Inflow = .71 cfs at .0835 hrs
 Peak Outflow = .00 cfs at .0167 hrs

 Peak Elevation = 34.83 ft
 Peak Storage = 423 cu.ft
 =====

MASS BALANCE (cu.ft)

 + Initial Vol = 0
 + HYG Vol IN = 423
 - Infiltration = 0
 - HYG Vol OUT = 0
 - Retained Vol = 423

 Unrouted Vol = -1 cu.ft (.135% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = I:\Projects\09113_Engineering\Calculations\PondPack\
 Inflow HYG file = NONE STORED - P 10 IN 10 yr
 Outflow HYG file = NONE STORED - P 10 OUT 10 yr

Pond Node Data = P 10
 Pond Volume Data = P 10
 Pond Outlet Data = PR 10

No Infiltration

INITIAL CONDITIONS

 Starting WS Elev = 34.00 ft
 Starting Volume = 0 cu.ft
 Starting Outflow = .00 cfs
 Starting Infiltr. = .00 cfs
 Starting Total Qout = .00 cfs
 Time Increment = .0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
 Peak Inflow = .92 cfs at .0835 hrs
 Peak Outflow = .00 cfs at .0167 hrs

 Peak Elevation = 35.00 ft
 Peak Storage = 550 cu.ft
 =====

MASS BALANCE (cu.ft)

 + Initial Vol = 0
 + HYG Vol IN = 550
 - Infiltration = 0
 - HYG Vol OUT = 0
 - Retained Vol = 550

Unrouted Vol = - cu.ft (.011% of Inflow Volume)

LEVEL POOL ROUTING SUMMARY

HYG Dir = I:\Projects\09113_Engineering\Calculations\PondPack\
Inflow HYG file = NONE STORED - P 10 IN 100 yr
Outflow HYG file = NONE STORED - P 10 OUT 100 yr

Pond Node Data = P 10
Pond Volume Data = P 10
Pond Outlet Data = PR 10

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 34.00 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout = .00 cfs
Time Increment = .0167 hrs

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

=====
Peak Inflow = 1.21 cfs at .0835 hrs
Peak Outflow = .31 cfs at .2338 hrs

Peak Elevation = 35.16 ft
Peak Storage = 684 cu.ft
=====

MASS BALANCE (cu.ft)

+ Initial Vol = 0
+ HYG Vol IN = 727
- Infiltration = 0
- HYG Vol OUT = 91
- Retained Vol = 636

Unrouted Vol = - cu.ft (.000% of Inflow Volume)

Type.... C and Area

Name.... MOD.RAT NET 10 Tag: PRE

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

RATIONAL C COEFFICIENT DATA

.....

Soil/Surface Description	C	Area acres	C x Area acres
	.4500	.200	.090

WEIGHTED C & TOTAL AREA ---> .4500 .200 .090

Type.... Rational Predev. Peak Q

Page 7.02

Name.... MOD.RAT NET 10

Event: 2 yr

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

Storm... JCC - 2 yr Tag: 2 yr

SUMMARY OF RATIONAL METHOD PEAK DISCHARGES
--- PREDEVELOPED CONDITIONS ---

Q = CiA * Units Conversion; Where Conversion = 43560 / (12 * 3600)

Tag	Freq	File	IDF Curve
2 yr	2		JCC - 2 yr

Tc = .0833 hrs

Tag	Freq (years)	C	C adj factor	C final	I in/hr	Area acres	Peak Q cfs
2 yr	2	.450	1.000	.450	5.7748	.200	.52

Type.... Mod. Rational Storm Calcs Page 7.04
 Name.... MOD.RAT NET 10 Tag: 2 yr Event: 2 yr
 File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw
 Storm... JCC - 2 yr Tag: 2 yr

MODIFIED RATIONAL METHOD
 ---- Summary for Single Storm Frequency ----

Q = CiA * Units Conversion; Where Conversion = 43560 / (12 * 3600)

RETURN FREQUENCY: 2 yr 'C' Adjustment = 1.000 Allowable Q = .52 cfs

Hydrograph Storm Duration, Td = .1667 hrs Tc = .0833 hrs

Hydrograph File: 2 yr

VOLUMES

Wtd. 'C'	Adjusted 'C'	Duration hrs	Intens. in/hr	Area acres	Qpeak cfs	Inflow cu.ft	Storage cu.ft
.750	.750	.0833	5.7747	.200	.87	262	105
							Storage Maximum
.750	.750	.1667	4.6637	.200	.71	423	120
.750	.750	.2500	3.9200	.200	.59	534	84
.750	.750	.3333	3.3885	.200	.51	Qpeak < Qallow	

Type.... C and Area

Name.... MOD.RAT NET 10 Tag: POST

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

RATIONAL C COEFFICIENT DATA

.....

Soil/Surface Description	C	Area acres	C x Area acres
	.7500	.200	.150

WEIGHTED C & TOTAL AREA ---> .7500 .200 .150

Type.... Rational Predev. Peak Q
 Name.... MOD.RAT NET 10
 File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-BASIN.PPW
 Storm... JCC - 10 yr Tag: 10 yr

SUMMARY OF RATIONAL METHOD PEAK DISCHARGES
 --- PREDEVELOPED CONDITIONS ---

$Q = CiA * \text{Units Conversion}; \text{ Where Conversion} = 43560 / (12 * 3600)$

Tag	Freq	File	IDF Curve
10 yr	10		JCC - 10 yr

Tc = .0833 hrs

Tag	Freq (years)	C	C adj factor	C final	I in/hr	Area acres	Peak Q cfs
10 yr	10	.450	1.000	.450	7.4932	.200	.68

MODIFIED RATIONAL METHOD
---- Summary for Single Storm Frequency ----

Q = CiA * Units Conversion; Where Conversion = 43560 / (12 * 3600)

RETURN FREQUENCY: 10 yr 'C' Adjustment = 1.000 Allowable Q = .68 cfs

Hydrograph Storm Duration, Td = .1667 hrs Tc = .0833 hrs

Hydrograph File: 10 yr

.....

VOLUMES							
Wtd. 'C'	Adjusted 'C'	Duration hrs	Intens. in/hr	Area acres	Qpeak cfs	Inflow cu.ft	Storage cu.ft
.750	.750	.0833	7.4931	.200	1.13	340	136

***** Storage Maximum

.750	.750	.1667	6.0645	.200	.92	550	157
------	------	-------	--------	------	-----	-----	-----

.750	.750	.2500	5.1400	.200	.78	700	116
.750	.750	.3333	4.4881	.200	.68	Qpeak < Qallow	

Type.... Rational Predev. Peak Q

Page 7.09

Name.... MOD.RAT NET 10

Event: 100 yr

File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw

Storm... JCC - 100 yr Tag: 100 yr

SUMMARY OF RATIONAL METHOD PEAK DISCHARGES
--- PREDEVELOPED CONDITIONS ---

$Q = CiA * \text{Units Conversion}; \text{ Where Conversion} = 43560 / (12 * 3600)$

Tag	Freq	File	IDF Curve
100 yr	100		JCC - 100 yr

Tc = .0833 hrs

Tag	Freq (years)	C	C adj factor	C final	I in/hr	Area acres	Peak Q cfs
100 yr	100	.450	1.000	.450	9.9801	.200	.91

Type.... Mod. Rational Storm Calcs Page 7.11
 Name.... MOD.RAT NET 10 Tag: 100 yr Event: 100 yr
 File.... I:\Projects\09113_Engineering\Calculations\PondPack\09113-basin.ppw
 Storm... JCC - 100 yr Tag: 100 yr

MODIFIED RATIONAL METHOD
 ---- Summary for Single Storm Frequency ----

Q = CiA * Units Conversion; Where Conversion = 43560 / (12 * 3600)

RETURN FREQUENCY: 100 yr 'C' Adjustment = 1.000 Allowable Q = .91 cfs

Hydrograph Storm Duration, Td = .1667 hrs Tc = .0833 hrs

Hydrograph File: 100 yr

VOLUMES							
Wtd. 'C'	Adjusted 'C'	Duration hrs	Intens. in/hr	Area acres	Qpeak cfs	Inflow cu.ft	Storage cu.ft
.750	.750	.0833	9.9800	.200	1.51	453	181
***** Storage Maximum							
.750	.750	.1667	8.0061	.200	1.21	727	203

.750	.750	.2500	6.8200	.200	1.03	928	151
.750	.750	.3333	6.0277	.200	.91	1094	61
.750	.750	.5000	5.0000	.200	.76	Qpeak < Qallow	

Appendix B
Pre and Post Development
Drainage Area Maps



**James City County Environmental Division
Stormwater Management / BMP Inspection Report
Infiltration Basin and Trench Facilities**

County BMP ID Code (if known): _____

Name of Facility: JAMESTOWN HIGH SCHOOL AQUI BMP No.: 1 Date: 5/17/2013

Location: 3751 JOHN TYLER HWY

Name of Owner: WJCC SCHOOLS

Name of Inspector: GREGORY B. JOHNSON

Type of Facility: Infiltration

Weather Conditions: _____ Type: Final Inspection County BMP Inspection Program Owners 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.

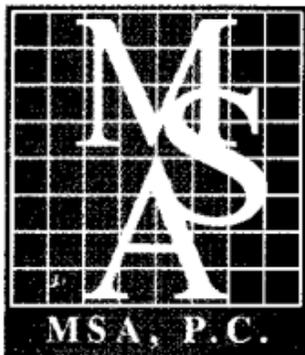
Provide an explanation and details in the comment column, if routine or urgent are marked.

Facility Item	O.K.	Routine	Urgent	Comments
Accessibility:				
Roads	✓			
Parking Areas	✓			
Gates	-			NONE
Locks	-			NONE
Safety Fencing	-			NONE
Observation Wells/Areas:				
Trap Doors				NA
Manhole Covers				NA
Grates				NA
Steps				NA
Pretreatment Devices: <input checked="" type="checkbox"/> Inlet <input type="checkbox"/> Sump <input type="checkbox"/> Forebay <input type="checkbox"/> Other				
Sediment	/			
Trash & Debris	✓			
Structure	✓			
Other				NA

Facility Item	O.K.	Routine	Urgent	Comments
Primary Storage/ Infiltration Area:				
Trash & Debris	✓			
Sediment	✓			
Ponding / Drawdown				NA
Surface Aggregates				NA
Aesthetics	/			
Other	/			
Inlet Structure # 1 (Describe Location): Riv Rap North End of Facility				
Condition of Structure	✓			
Erosion	✓			
Trash and Debris	✓			
Sediment	✓			
Aesthetics	✓			
Other	✓			
Inlet Structure # 2 (Describe Location):				
Condition of Structure	NA			
Erosion				
Trash and Debris				
Sediment				
Aesthetics				
Other				
Inlet Structure # 3 (Describe Location):				
Condition of Structure	NA			
Erosion				
Trash and Debris				
Sediment				
Aesthetics				
Other				
Outlets - Overflow or Bypass Control Structures (Describe Location): DS-7 South end of Facility				
Condition of Structure	✓			
Erosion	✓			
Trash and Debris	✓			
Sediment	✓			
Other				
Nuisance Type Conditions: ol				

Facility Item	O.K.	Routine	Urgent	Comments
Mosquito Breeding	✓			
Animals, Rodents	✓			
Graffiti	✓			
Other	✓			
Perimeter (Contributing Drainage Area) Conditions:				
Stabilization	✓			
Vegetation Condition	✓			
Trash and Debris	✓			
Aesthetics	✓			
Other	✓			
Remarks:				
<p>Overall Environmental Division Internal Rating: _____</p> <p>Signature: <u><i>Chris Huson</i></u> Date: <u>5/17/2013</u></p> <p>Title: <u>Inspector</u></p>				

SWMP\BMP\ColnspProg\SubDetInfil.wpd



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Project Manager

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