



See also PC235

CERTIFICATE OF AUTHENTICITY

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

BMP NUMBER: PC234

DATE VERIFIED: September 21, 2012

QUALITY ASSURANCE TECHNICIAN: Leah Hardenbergh

Leah Hardenbergh

LOCATION: WILLIAMSBURG, VIRGINIA



Stormwater Division

MEMORANDUM

Date: March 23, 2012
To: Michael J. Gillis, Virginia Correctional Enterprises Document Management Services
From: Leah Hardenbergh
PO: 110426
Re: Files Approved for Scanning

General File ID or BMP ID: PC235 & PC234
PIN: 2430100047
Owner Name (if known): ZION BAPTIST CHURCH
Legal Property Description: RT 60 & RT 614
Site Address: 6373 RICHMOND ROAD

(For internal use only):

Box # 1

Agreements (in file as of scan date): Y Book or Doc #: 070004125 Page: B 363 p. 284

Contents for Stormwater Management Facilities As-built Files

Each file is to contain:

1. As-built plan
2. Completed construction certification
- ③. Construction Plan
- ④. Design Calculations
- ⑤. Watershed Map
- ⑥. Maintenance Agreement
7. Correspondence with owners
- ⑧. Inspection Records
9. Enforcement Actions
10. Geotechnical Reports



DECLARATION OF COVENANTS

INSPECTION/MAINTENANCE OF DRAINAGE SYSTEM

THIS DECLARATION, made this 5 day of FEB, 2007,
between Zion Baptist Church, and
all successors in interest, ("COVENANTOR(S),") owner(s) of the following property:

Parcel Identification Number: (24-3) (1-47)

Legal Description: Route 60 and Route 614 - 3.78 acres 6373 Richmond Road

Project or Subdivision Name: ZION BAPTIST CHURCH EXPANSTION

Document No. _____

OR Deed Book 363, Page No. 284

and the County of James City, Virginia ("COUNTY.")

WITNESSETH:

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

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

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

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

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

5. If, after reasonable notice by the COUNTY, the COVENANTOR(S) shall fail to maintain the SYSTEM in accordance with the approved design standards and with the law and applicable executive regulations, the COUNTY may perform all necessary repair or maintenance

Instrument # 070004125

Recorded on Feb. 13, 2007 Page 1

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work, and the COUNTY may assess the COVENANTOR(S) and/or all property served by the SYSTEM for the cost of the work and any applicable penalties.

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

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

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

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

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

COVENANTOR(S)

Robert C. Rucklowitz

Print Name/Title ROBERT C. RUCKLEWITZ
CHAIRMAN TRUSTEE BOARD

ATTEST:

COVENANTOR(S)

Print Name/Title _____

ATTEST:

COMMONWEALTH OF VIRGINIA

CITY/COUNTY OF James City County

I hereby certify that on this 5 day of Feb, 2007, before the subscribed, a Notary Public for the Commonwealth of Virginia, personally appeared Robert C Rocklewitz and did acknowledge the foregoing instrument to be their Act.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal this 5 day of Feb, 2007.

Melanie J. Davis
Notary Public

My Commission expires: 12-31-10

Approved as to form:

George C. King
2557 County Attorney

This Declaration of Covenants prepared by:

ROBERT C. ROCKLEWITZ
(Print Name)

CHAIRPERSON TRUSTEE BOARD
(Title)

476 E ROCKWANT'S PARK
(Address)

WILLIAMSBURG VA 23188
(City) (State) (Zip)

757-229-3846
(Phone Number)



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

Project Name: Zion Baptist Church Expansion
 County Plan No.: SP-036-06
 Stormwater Management Facility: Level Spreaders
 BMP Phase #: I II III
 Information Package Received. Date/By: N/A
 Completeness Check:
 Record Drawing Date/By: N/A
 Construction Certification Date/By: N/A
 RD/CC Standard Forms (Required for all BMPs after Feb 1st 2001Only)
 Insp/Maint Agreement # / Date: 215107
 BMP Maintenance Plan Location: Sheet C5
 Other: _____
 Standard E&SC Note on Approved Plan Requiring RD/CC or County comment in plan review
 Yes No Location: _____
 Assign County BMP ID Code #: Code: PC235 & PC234
 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: 2/2/09
 Record Drawing (RD) Review Date: _____
 Construction Certification (CC) Review Date: _____
 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.
 Complete "Surety Request Form".
 Check/Clean active file of any remaining material and finish "As-Built" file.
 Add to County BMP Inventory/Inspection schedule (Phase I, II or III).
 Copy Final Inspection Report into County BMP Inspection Program file.
 Obtain Digital Photographs of BMP and save into County BMP Inventory.
 Request mylar/reproducible from As-Built plan preparer.
 Complete "As-built Tracking Log".
 Last check of BMP Access Database (County BMP Inventory).
 Add BMP to JCC Hydrology & Hydraulic database (optional).
 Add BMP to Municipal BMP list (if a County-owned facility)
 Add BMP to PRIDE BMP ratings database.

Final Sign-Off

Inspector: Nina Creech Date: 11/17/10
 Chief Engineer: _____ Date: _____

*** See separate checklist, if needed.



James City County, Virginia
Environmental Division

Erosion and Sediment Control and Stormwater Management Design Plan Checklists

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GENERAL INFORMATION

Project Name: ZION BAPTIST SITE IMPROVEMENTS, SP-36-06
Owner / Applicant: DEACON JOHN MORMON
Plan Preparer: STEPHEN STEWART, PE Email: sstewart@vhb.com
Project Location: 6373 RICHMOND ROAD
Tax Map / Parcel: (24-3)(1-47)
County Plan No. (if known): SP-36-06
County BMP Type: LEVEL SPREADERS (-)

Other information submitted in addition to this checklist (Check all that apply):

- Design or Construction Drawings (Plans, Profiles, Details, etc.).
- Erosion & Sediment Control Plan (Plans, Details, etc.).
- Erosion & Sediment Control Plan Design Report.
- Stormwater Management Design Plan (Plans, Profiles, Details, etc.).
- Stormwater Management Design Report.
- Other, List: _____

Issue Date
March 1, 2001

**JAMES CITY COUNTY, VIRGINIA
ENVIRONMENTAL DIVISION**

EROSION AND SEDIMENT CONTROL PLAN CHECKLIST

I. GENERAL:

Yes No N/A

- FAMILIARITY** with current versions of Chapter 8, Erosion and Sedimentation Control and Chapter 23, Chesapeake Bay Preservation ordinances of the Code of James City County, Virginia and the Virginia Erosion and Sediment Control Handbook (VESCH).
- LAND DISTURBING PERMIT AND SILTATION AGREEMENT** with surety are required for the project.
- VARIANCE** if necessary, requested in writing, for the plan approving authority to waive or modify any of the minimum standards and specifications of the VESCH deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.

II. SITE PLAN:

Yes No N/A

- VICINITY MAP** locating the site in relation to the surrounding area. Include any major landmarks which might assist in physically locating the site.
- INDICATE NORTH** direction in relation to the site.
- LIMITS OF CLEARING AND GRADING** for the site including that required for implementation of erosion and sediment controls, stockpile areas and utilities.
- DISTURBED AREA ESTIMATES** in acres or square feet for the project.
- EXISTING TOPOGRAPHY** or contours for the site at no more than 5 foot contour interval.
- FINAL TOPOGRAPHY**, contours or proposed site grading in accordance with the design plan which indicates changes to existing topography and drainage patterns at no more than 2 foot contour interval (or 1 foot contours where required).
- EXISTING AND PROPOSED SPOT ELEVATIONS** to supplement existing and proposed contours, topography or site grading information. Spot elevations may replace final contours in some instances, especially if terrain is in a low lying area or relatively flat.
- EXISTING VEGETATION** including existing tree lines, grassed or unique vegetation areas.

Yes No N/A

EXISTING SITE FEATURES including roads, buildings, homes, utilities, streams, fences, structures and other important surface features of the site.

SOILS MAP with soil symbols, boundaries and legend in accordance with the current Soil Survey of James City and York Counties and the City of Williamsburg, Virginia.

ENVIRONMENTAL INVENTORY in accordance with Section 23-10(2) of the Chesapeake Bay Preservation Ordinance of James City County. Inventory generally includes: tidal shores and wetlands, non-tidal wetlands, resource protection area, hydric soils and slopes steeper than 25 percent. For wetlands, provide a copy of issued permits or satisfactory evidence that appropriate permits are being pursued for the entire project.

100-YEAR FLOODPLAIN LIMITS or any special flood hazard areas or flood zones based on appropriate Federal Management Agency Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) of James City County, Virginia.

DRAINAGE AREAS for offsite and onsite areas, existing or proposed as applicable. Include drainage divides and directional labels for all subareas at points of interest and size (in acres), weighted runoff coefficient or curve number and times of concentration for each subarea.

CRITICAL EROSION AREAS which require special consideration or unique erosion and sediment control measures. Refer to the VESCH, Chapter 6 for criteria.

DEVELOPMENT PLAN for the site showing all improvements such as buildings, structures, parking areas, access roadways, above and below ground utilities, stormwater management and drainage facilities; trails or sidewalks, proposed vegetation and landscaping, amenities, etc.

LOCATION OF PRACTICES proposed for erosion and sediment control, tree protection and temporary stormwater management due to land disturbance activities at the site. Use standard abbreviations, labels and symbols consistent for plan views based on minimum standards and specifications in Chapter 3 of the VESCH.

TEMPORARY STOCKPILE AREAS or staging and equipment storage areas as required for onsite or offsite construction activities or indicate that none are anticipated for this project.

OFFSITE LAND DISTURBING AREAS including borrow sites, waste areas, utility extensions, etc. and required erosion and sediment controls. If none are anticipated for the project, then indicate on the plans by general or erosion and sediment control notes.

DETAILS or alternately, appropriate reference to current minimum standards and specifications of the VESCH for each measure proposed for the project. Non-modified, standard duplicated details (silt fence, diversion dikes, etc.) may be referenced to the current version of the VESCH. Specific dimensional or modified standards (basins, traps, outlet protections, check dams, etc.) require presentation on detail sheets. Schedules or tables may be used for multiple site measures such as sediment traps, basins, channels, slope drains, etc. Any modification to standard details should be clearly defined, explained and illustrated.

Yes No N/A

MAINTENANCE PLAN or alternately, appropriate reference to current minimum standards and specifications of the VESCH, outlining the inspection frequency and maintenance requirements for all erosion and sediment control measures proposed for the project.

TRENCH DEWATERING methods and erosion and sediment controls, if anticipated for the project.

CONSTRUCTION SEQUENCE outlining the anticipated sequence for installation of erosion and sediment controls and site, grading and utility work to be performed for the project by the site contractor.

PHASING PLAN if required for larger project sites that are to be developed in stages or phases.

STANDARD COUNTY NOTES are required to be placed on the erosion and sediment control plan. Refer to the standard James City County Erosion and Sediment Control Notes, latest version.

PROFESSIONAL SEAL AND SIGNATURE required on final and complete approved plans, drawings, technical reports and specifications.

III. NARRATIVE:

Yes No N/A

PROJECT DESCRIPTION briefly describing the nature and purpose of the land disturbing activity and the acreage to be disturbed.

EXISTING SITE CONDITIONS description of existing topography, land use, cover and drainage patterns at the site.

ADJACENT AREA descriptions of neighboring onsite or offsite areas such as streams, lakes, property, roads, etc. and potential impacts due to concentrated flow or runoff from the land disturbing activity.

OFFSITE DISTURBED AREA descriptions of proposed borrow sites, waste or surplus areas, utility extensions and erosion and sediment controls to be implemented.

SOILS DESCRIPTION briefly summarizing site, disturbed area and drainage basin soils including name, unit, hydrologic soil group (HSG) classification, surface runoff potential, erodibility, permeability, depth, texture, structure, erosion hazards, shrink-swell potential, limitations for use and anticipated depths to bedrock and the seasonal water table, as applicable.

CRITICAL AREAS on the site which may have potentially serious erosion and sediment control problems and special considerations required (ie. steep slopes, hydric soils, channels, springs, sinkholes, water supply reservoirs, groundwater recharge areas, etc.)

Yes No N/A

PROPOSED EROSION & SEDIMENT CONTROL MEASURES inclusive to the specific erosion and sediment control plan as proposed for the land disturbing activity. Measures should be consistent with those proposed on the site drawings. Address general use, installation, limitations, sequencing and maintenance requirements for each control measure.

STABILIZATION MEASURES required for the site, either temporary or permanent, and during and following construction including temporary and permanent seeding and mulching, paving, stone, soil stabilization blankets and matting, sodding, landscaping or special stabilization techniques to be utilized at the site.

STORMWATER MANAGEMENT CONSIDERATIONS for the site, either of temporary or permanent nature, and strategies, sequences and measures required for control. May reference the stormwater management plan for the site, if prepared, for permanent stormwater management facilities and control of drainage once the site is stabilized.

IV. CALCULATIONS:

Yes No N/A

CALCULATIONS AND COMPUTATIONS associated with hydrology, hydraulics and design of proposed temporary and permanent erosion and sediment control measures including: sediment traps and basins, diversions, stormwater conveyance channels, culverts, slope drains, outlet protections, etc. Computations are not required on the construction plan and may be attached in a supplemental erosion and sediment control plan design report, if presented in a clear and organized format.

TEMPORARY SEDIMENT BASIN DESIGN DATA SHEET submitted for each basin along with schematic or sketch cross-section showing applicable design and construction data, storage volumes (wet-dry), dimensions and elevations. Peak design runoff to be based on the 2- or 25-year design storm event based on maximum disturbed site conditions (existing, interim or proposed conditions) in accordance with Minimum Standard 3.14 of the VESCH.

**JAMES CITY COUNTY, VIRGINIA
ENVIRONMENTAL DIVISION**

STORMWATER MANAGEMENT DESIGN PLAN CHECKLIST

I. GENERAL:

Yes No N/A

- FAMILIARITY** with current versions of the James City County Guidelines for Design and Construction of Stormwater Management BMPs manual; Chapter 8, Erosion and Sediment Control and Chapter 23, Chesapeake Bay Preservation ordinances of the Code of James City County, Virginia; the Virginia Erosion and Sediment Control Handbook (VESCH); and the Virginia Stormwater Management Handbook (VSMH).
- WAIVER OR EXCEPTION** if necessary, requested in writing, for the plan approving authority to waive or except the requirements of Chapter 23, Chesapeake Bay Preservation ordinance in accordance with procedure established in Sections 23-14 through 23-17 of the ordinance. Applies to this review case only.
- VARIANCE REQUEST** if necessary, requested in writing for the plan approving authority to waive or modify any of the minimum standards and specifications of the VESCH deemed inappropriate based on site conditions specific to this review case only. Variances which are approved shall be properly documented in the plan and become part of the approved erosion and sediment control plan for the site.
- PROFESSIONAL SEAL AND SIGNATURE** required on final and complete approved stormwater management plans, drawings, technical reports and specifications.
- WORKSHEET FOR BMP POINT SYSTEM** to ensure the stormwater management plan for the project attains at least 10 BMP points (New Development) or traditional pollutant load reduction computations per the Chesapeake Bay Local Assistance Manual (Redevelopment Only). *DETAILS INCLUDED IN CONTRACT*
- PROPOSED CONSERVATION EASEMENT AREAS** for any natural open space points claimed in the BMP worksheet.
- INSPECTION/MAINTENANCE AGREEMENT** is required to be prepared and executed with the County for the project.
- FEMA FIRM PANEL** reference with designated special flood hazard areas or zone designations associated with the site, as applicable.
- DRAINAGE AREA MAP** at a maximum scale of 1"=200' scale showing drainage area boundaries for pre- and postdevelopment conditions and associated time of concentration flow paths. Labels to include drainage area size, runoff coefficient or curve number and time of concentration for each subarea shown on the map.

Yes No N/A

SOILS MAP with soil symbols, boundaries and legend in accordance with the current Soil Survey of James City and York Counties and the City of Williamsburg, Virginia with approximate locations of the project site, BMPs and applicable drainage basins.

STORMWATER MANAGEMENT NARRATIVE in a brief and simple format which describes the project; location; site and drainage basin soil characteristics; receiving water or drainage facility; existing site and drainage basin conditions (topography, land use, cover, slopes, etc.); proposed site development; proposed stormwater management and drainage plan including County BMP type selected; summary of hydrology and hydraulics; maintenance program; and any special assumptions utilized for development of the stormwater management and drainage design plan or computations.

TEMPORARY STORMWATER MANAGEMENT (if applicable) for control of stormwater runoff encountered during construction activities in addition to measures provided in the erosion and sediment control plan or stormwater management/drainage plan for the site. Adequate protection measures or sequencing provided.

MODIFICATION PLAN clearly defined for temporary sediment control structures which will be converted to permanent SWM/BMP structures. Includes appropriate hydrologic and hydraulic computations, conversions, sequencing and cleanout information or details. Normally related to primary control structures associated with dry detention or wet retention ponds. Normally not permitted for Group C or D categories such as bioretention, infiltration and filtering system facilities.

STORMWATER MANAGEMENT and DRAINAGE DESIGN REPORT in a bound 8-1/2 x 11 inch size format. Report shall generally include a title sheet, date, project identification, owner and preparer information, table of contents, narrative, summaries and computations as required. Computations may include: backwater, closed conduit, headwater, hydraulic, hydraulic grade line, hydrology, inlet, open channel, storm sewer, water quality, extended detention or stream channel protection and multi-stage storm routing calculations, as applicable, for the project. Computation data may include hand or computer generated computations, maps or schematics. All information should be presented in a clear, easy to follow format and should closely match construction plan information.

PLAN VIEW at 1 inch = 50 ft. scale or less (1" = 40', 1" = 30', etc.)

North arrow and plan legend.

Property lines.

Adjacent property information.

Existing site features and existing impervious cover areas.

Impervious cover tabulations.

Existing drainage facilities (natural or manmade).

Existing environmentally sensitive areas (RPA, wetlands, floodplain, steep slopes, critical soils, buffers, etc.).

Existing and proposed contours (1' or 2' contour interval) and spot elevations as necessary to define high and low topography.

Existing and proposed easement locations.

Yes No N/A

- | | | | |
|-------------------------------------|--------------------------|-------------------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Proposed site improvements and proposed impervious cover areas. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Proposed stormwater conveyance, drainage and management facilities with appropriate labeled construction data and information. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Proposed landscaping and seeding plans (disturbed areas, pond interior, etc.). |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Proposed slope stabilization areas (riprap, blankets, matings, walls, etc.). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Delineation of permanent pools and the 1-, 2-, 10- and 100-year Design Water Surface Elevations. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Delineation of ponding, headwater, surcharge or backwater areas which may affect adjacent existing or proposed buildings, structures or upstream adjacent properties. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Test boring locations with reference surface elevations (if known). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Risers, barrels, underdrains, overflows and outlet protections. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Emergency spillway level section and outlet channel. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Existing and proposed site utilities and protection measures. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Erosion and sediment control measures (for site or BMP). |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Maintenance or access corridors to permanent stormwater management, BMP or drainage facilities. |

II. STORMWATER CONVEYANCE SYSTEMS:

Yes No N/A

- | | | | |
|--------------------------|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | PLAN VIEWS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Storm drain lengths, sizes, types, classes and slopes for all segments. Label directly on plan or use structure/pipe schedule. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Access structure (inlets, manholes, junctions, etc.) rim elevations, inverts, type and required grate or top unit and lengths labeled. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | All structure numbers labeled. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Adequate horizontal clearance from other site utilities or structures. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | PROFILES generally are not required but are encouraged to expedite review. If not provided, ensure all pipe segments have adequate minimum cover, do not exceed maximum depths of cover for the type/class of pipe specified and do not conflict with other site utilities or excavation areas. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | DETAILS |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Typical storm drain bedding details or reference note. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Standard details or reference note for all proposed access structure types (inlets, manholes, junctions, etc.). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Inlet shaping detail or applicable reference note. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Step detail or applicable reference note (if depth 4 ft. or more). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Typical open channel details with designation, location, shape, type, bottom width, top width, lining, slope, length, side slope, and installation depth required for construction. Channel design data as necessary may also be included. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Outlet protections at all pipe outfalls. |

Yes No N/A

STORMWATER CONVEYANCE SYSTEM COMPUTATIONS

- Storm Sewer Design computations based on 10-year design event.
- Hydraulic Grade Line computations based on 10-year design event.
- Inlet computations based on current VDOT procedure for spread, ponding depth and grate size required.
- Culvert Headwater computations. Design based on 10-year design storm event and check only for 100-year storm event.
- Open Channel computations based on 2-year design event for velocity and 10-year design event for capacity.
- Standard outlet protection or special energy dissipators.
- Pipe thickness design computations, as required, for selected pipe type (live load, minimum cover, maximum height of cover, etc.).
- Adequate channel computations for receiving channels (based on field measured channel section data).

III. STORMWATER MANAGEMENT / BMP FACILITIES:

Yes No N/A

HYDROLOGY - An SCS based methodology is required for the design of stormwater management/BMP facilities with watersheds exceeding 20 acres. Under 20 acres, other generally accepted methodologies such as the modified rational, critical storm are allowable. Refer to Chapter 5 of the VESCH or Chapter 5 of the VSMH.

- Runoff Curve Number or Coefficient determinations: predeveloped and ultimate development land use scenarios.
- Time of concentration: predeveloped and ultimate development indicating overland, shallow concentrated, and channel flow components (200 ft. maximum length for overland flow).
- Hydrograph generation (tabular or graphical): pre- and postdevelopment conditions for the 1-, 2-, 10-, and 100-year design storm events.

FACILITY CONFIGURATION and MINIMUM SEPARATIONS

- Screening and layout consistent with Section 24-98(d) of the Chapter 24 Zoning ordinance (landscaping, screening, visibility, etc.).
- Basic considerations for safety and unauthorized entry.
- Proper length to width ratio (Typically 2H:1V).
- Facilities with deep pools (4 feet or more in depth) provided with two benches. Fifteen (15) ft. safety bench outward from normal pool at maximum 6 percent slope and aquatic bench inward from normal shoreline below normal pool. Narrower widths may be considered on a case-by-case basis.
- Pond buffer minimum 25 feet outward from maximum design WSEL. Additional setbacks may be required to permanent structures.
- No trees, shrubs or woody plants within 15 feet of embankment toe or 25 feet from principal spillway structure.

Yes No N/A

- Infiltration and filtering system facilities generally located at least 100 feet horizontally from any water supply well; 100 feet from any downslope building; and 25 feet from any upslope buildings, unless site specific investigation allows for reduced separation.

Yes No N/A

HYDRAULIC COMPUTATIONS

- Elevation- or Stage- Storage curve and/or tabular data.
- Weir / Orifice Control - Extended Detention.
- Weir / Orifice Control - riser 1-year control for channel protection.
- Weir / Orifice Control - riser 2-year control for quantity (if required).
- Weir / Orifice Control - riser 10-year control for quantity (if required).
- Inlet / Outlet (barrel) control - (All Storms).
- Check for barrel control prior to riser orifice flow to prevent slug flow-water hammer conditions.
- Emergency spillway capacity and depth of flow.
- Elevation - Discharge (Outlet Rating) curve and/or table. Provide all supporting calculations and/or design assumptions.
- Adequate channel computations for receiving channel. May be waived if facility is designed based on current Stream Channel Protection criteria.

POND or RESERVOIR ROUTING

- Storage-Indication Routing of postdeveloped inflow hydrographs for the 1-, 2-, 10-, and 100-year design storms. Preference is for structure to discharge up to the 10-year storm through the principal spillway and pass the 100-year storm with a minimum 1 foot of freeboard through a combination principal and emergency spillways. If no emergency spillway is provided, riser must be large enough to pass the design high water flow and trash without overtopping the facility, have 3 square feet or more of cross-sectional area, contain a hood type inlet and have a minimum freeboard of 2 feet. Token spillways with minimum 8 ft. width are also recommended at or above the design 100-year storm elevation.
- Downstream hydrographs at established study points, if conditions warrant (ie. facility discharge combined with uncontrolled bypass).

MISCELLANEOUS COMPUTATIONS

- Water quality volume for permanent pool based on selected BMP treatment volume (WQv).
- Water quality volume for extended detention based on selected BMP treatment volume (WQv) with drawdown computations.
- Drawdown computations for the 1-year, 24 hour detention for stream channel protection criteria.
- Pond drain computations (within 24 hours).
- Anti-seep collar design (concrete preferred) or match material type.
- Filter diaphragm design (or alternative method of controlling seepage).

Yes No N/A

- Riser / base structure flotation analyses. FS = 1.25 minimum.
- Downstream danger reach study and/or emergency action plan (if conditions warrant).
- Upstream backwater analyses onto offsite adjacent property (if conditions warrant).
- 100 year floodplain impacts (if conditions warrant).

Yes No N/A

-

GEOTECHNICAL REQUIREMENTS

- Geotechnical Report with recommendations specific to BMP facility type selected. Report prepared by a registered professional engineer. Requires submission, review and approval prior to issuance of Land Disturbance Permit.
- Initial Feasibility Testing requirements satisfied as per Appendix E of the James City County Guidelines for Design and Construction of Stormwater Management BMPs manual. (Infiltration, Bioretention and Filtering System BMP types only).
- Concept Design Testing requirements satisfied as per Appendix E of the James City County Guidelines for Design and Construction of Stormwater Management BMPs manual. (Infiltration, Bioretention and Filtering System BMP types only).
- Minimum Boring locations: borrow area, pool area, principal control structure, top of facility near one abutment and emergency spillway if provided.
- Boring logs with Unified Soil Classification (ASTM D2487), soils descriptions and depths to bedrock and the seasonal water table indicated.
- Standard County Record Drawing/Construction Certification note provided on plan. *Note: It is understood that preparation of record drawings and construction certifications as required for project facilities may not necessarily be performed by the plan preparer. These components may be performed by others.*

-

PRINCIPAL SPILLWAY PROFILE AND ASSOCIATED DETAILS

-

EXISTING GROUND AND PROPOSED GRADE

- Embankment or excavation side slopes labeled (3H:1V maximum).
- Minimum top width labeled (per VESCH or VSMH requirements).
- Removal of unsuitable material under proposed facility (per Geotechnical Report requirements).

Yes No N/A

CORE TRENCH

- Material (per plan or Geotechnical Report).
- Bottom width (4' minimum or greater as dictated by Geotechnical Report recommendations).
- Side slopes (1:1 maximum steepness)
- Depth (4' minimum or greater as dictated by Geotechnical Report).

PRINCIPAL CONTROL STRUCTURE. RISER OR SIMILAR STRUCTURE (DETAILS REQUIRED FOR ALL ITEMS)

- Durable, watertight, resistant material (concrete preferred).
- Riser diameter is at least 1.25 times larger than barrel diameter.
- All pertinent dimensions and elevations shown.
- Control orifice or weir dimensions and elevations shown.
- Trash rack - removable - for each release.
- Anti-vortex device, baffle or plate.
- Riser base structure with dimensions and embedment specifications (concrete preferred).
- Interior access (steps, ladders, etc.) for maintenance for structures over 4 feet in height. Excessively high risers may need some form of exterior access on top portion.
- Low flow orifice with trash rack device.

PRINCIPAL CONTROL STRUCTURE OUTLET BARREL

- Material (ASTM C-361 reinforced concrete pipe) with watertight joints. Prior approval required for all other pipe material (other RCP types, CMP, CPP, PVC, etc.).
- Support and bedding requirements for barrel - concrete cradles, etc. or as recommended by the Geotechnical Report.
- Pipe inverts, length, size, class and slope shown.
- Flared end section or endwall provided on barrel outlet.

SEEPAGE CONTROL

- Phreatic line shown (4:1 slope measured from the intersection of the embankment and the principal spillway design high water).

ANTI-SEEP COLLARS

- Anti-seep collar, concrete preferred.
- Size - 15 percent increase in length of saturation using outside pipe diameter.
- Spacing and location on barrel (located at least 2 feet from a pipe joint).

FILTER DIAPHRAGMS

- Design based on latest NRCS design methods and certified by a professional engineer.

Yes No N/A

- ELEVATION AND DIMENSIONAL DESIGN DATA**
- Top of facility - construction height and settled height (10 percent settlement).
 - Crest of principal control structure spillway at least one (1) foot below crest of emergency spillway, if provided.
 - Minimum freeboard of one (1) foot above the 100-year design high water elevation for facilities with an emergency spillway.
 - Minimum freeboard of two (2) feet above the 100-year design high water elevation for facilities without an emergency spillway or in accordance with the SCS National Engineering Handbook (prior approval required).
 - Basin Sediment Clean-Out elevation (permanent mode). Typically 10 to 25 percent of water quality volume.

- CROSS SECTION THROUGH FACILITY**
- Existing Ground.
 - Proposed grade.
 - Top of facility - constructed and settled.
 - Location of emergency spillway with side slopes labeled (emergency spillway in cut).
 - Bottom of core trench (4' minimum).
 - Location of each soil boring.
 - Barrel location.
 - Existing and proposed utility location/protection.

- EMERGENCY SPILLWAY PROFILE**
- Existing ground.
 - Inlet, level (control) and outlet sections per SCS.
 - Spillway and crest elevations.

- PRETREATMENT DEVICES** of adequate depth and properly designed using required pretreatment volumes for the selected County BMP facility type. Including, but not limited to: sediment forebays, sediment basins, sumps, grass channels, gravel diaphragms, plunge pools, chamber separators, manufactured systems or other acceptable methods.

Yes No N/A

CONSTRUCTION SPECIFICATIONS and NOTES

- Anticipated sequence of construction for BMP (consistent with erosion and sediment control plan).
- Provisions to control base stream or storm flow conditions encountered during construction.
- Site and subgrade preparation requirements.
- Embankment, fill and backfill material soil and placement (lift) thickness requirements.
- Compaction and soil moisture content requirements.
- Geosynthetics for drainage, filtration, moisture barrier, separation, and reinforcement purposes.
- Clay or synthetic (PVC or HDPE) pond liners.
- Storm drain, underdrain and pipe conduit requirements.
- Minimum depth of pipe cover for temporary (construction) and final cover conditions.
- Permanent shutoff valve and pond drain.
- Concrete requirements for structural components.
- Riprap and slope protection.
- Access or maintenance road surface, base, subbase.
- Temporary and permanent stabilization measures.
- Temporary or permanent safety fencing.
- BMP Landscaping (deep, shallow, fringe, perimeter, etc.)
- Dust and traffic control (if warranted).
- Construction monitoring and certification by professional.
- Other: _____
- Other: _____

MAINTENANCE PROVISIONS

- Entity responsible for maintenance identified..
- Maintenance Plan which outlines the long-term schedule for inspection/maintenance of the facility and forebays
- Maintenance access from public right-of-way or publicly traveled road.
- Maintenance easement provided encompassing high water pool and buffer, principal and emergency spillways, outlet structures, forebays, embankment area and possible sediment-removal stockpile areas.
- Minimum 6 foot wide public safety shelf (landing) or alternative fencing.

IV. **OUTLET PROTECTIONS:**

Yes No N/A

- | | | | |
|-------------------------------------|--------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sized for maximum design release (generally 10-year storm). |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Flared end section or endwall. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Dimensions. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Rock or riprap size, quantity and placement thickness. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Slope at 0 percent (Level Grade). |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Geotextiles (nonwoven). |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Special energy dissipators are required for design discharge velocities that exceed eighteen (18) feet per second; or if use of standard outlet protection would result in velocities exceeding permissible channel velocities; or if space restricts or limits their use. |

V. **ADDITIONAL COMMENTS OR INFORMATION SPECIFIC TO THE PLAN:**

STORMWATER MANAGEMENT FOR THIS SITE IS SATISFIED
BY MASTER STORMWATER PLANNING ASSOCIATED WITH
THE WARHILL TRACT WHICH INCLUDED UPGRADES TO
THE DISTRICT PARK WEST POND.

THIS PROJECT IS SITUATION WITHIN SUBWATERSHED 205
AND CATCHMENT 205-106-1 OF POWHATAN CREEK

Plan Preparer: Stephen Stewart

Date: 8/3/06

Site Plans

Issued for: **Site Plan Approval**

Date Issued: March 24, 2006

Latest Issue: November 13, 2006

Index

No.	Drawing Title	Latest Issue
C-1	Legend and General Notes	11/13/2006
C-2	Erosion Control and VDOT Notes	11/13/2006
C-3	Demolition Plan	11/13/2006
C-4	Layout and Materials Plan	11/13/2006
C-5	Grading and Drainage Plan	11/13/2006
C-6	Utility Plan	11/13/2006
C-7	Erosion and Sediment Control Plan	11/13/2006
C-8	Site Details	11/13/2006
C-9	Utility and VDOT Details	11/13/2006
C-10	Erosion and Sediment Control Details	11/13/2006
C-11	Drainage Areas and Soils Maps	11/13/2006

Reference Drawings

Sv-1	Existing Conditions Plan of Land	7/18/06
EI-1	Environmental Inventory	11/13/2006
LA-1	Landscape Plan	8/21/2006
E-6	Site Lighting	8/1/2006

Zion Baptist Church

6373 Richmond Road

Lightfoot, Virginia

Case No. JCC-SP-036-06

SP-036-06

COUNTY OF JAMES CITY FINAL SITE PLAN	
APPROVALS	DATE
File Dept. <i>JTB/ang</i>	11-13-06
Health Dept.	
VDOT <i>KTW/ang</i>	12-8-06
Planning <i>WJW/ang</i>	11/13/06
Environ <i>SST/ang</i>	8-5-06
Zoning <i>MWD</i>	12/12/2006
JCSA <i>CLP/ang</i>	12-12-06
County Eng. <i>WHS/ang</i>	4-18-06
PEA	
Other	

NOV 2006
RECEIVED
PLANNING DEPARTMENT



Site Location Map

Property Information

Owner:
Deacon John Mormon
Zion Baptist Church
6373 Richmond Road
Lightfoot, Virginia 23090
Phone (757) 565-2598
Fax (804) 693-0026

Parcel Tax ID (24-3)(1-47)
SUP-003-06, Approved
March 14, 2006

Notes:

1. This project site is located inside the James City County Primary Service Area (PSA).
2. The parcel on which this parcel is located is zoned R-8 (Rural Residential).
3. All signs erected on this property will be in accordance with Article II, Division 3 of the James City County Zoning Ordinance.
4. All utilities constructed on this property will be located underground.

Applicant:
Stephen E. Stewart, P.E., M.B.A.
Vanasse Hangen Brustlin, Inc.
11832 Rock Landing Drive, Suite 207
Newport News, Virginia 23606
Ph (757) 873-3386 · Fax (757) 873-0757

Total Site Area: 3.78 Acres
Proposed Impervious Area: 1.21 Acres
Proposed Percent Impervious: 32%
Allowable Percent Impervious: 60%
Total Disturbed Area: 1.87 Acres

Resource List

Gas
Virginia Natural Gas
750 Diligence Drive
P.O. Box 6200
Newport News, Virginia 23606
Contact: Susan DeMeno
Phone: (757) 873-6259

Electric
Dominion Virginia Power
902 G Street
Hampton, Virginia 23661
Contact: Todd Blanks
Phone: (757) 928-2096

Telephone
Verizon
52 Richeck Road
Newport News, Virginia 23608
Contact: Stewart Strothers
Phone: (757) 875-2656

Local Engineering Office
James City County
Environmental Division
101 Mounts Bay Road, P.O. Box 8784
Williamsburg, VA 23187-8784
Contact: Scott J. Thomas, P.E.
Phone: (757) 253-6639

Water
JCSEA
101-E Mounts Bay Road
Williamsburg, VA 23187-8784
Contact: Mike Vergakis, P.E.
Phone: (757) 253-6677

Sewer
JCSEA
101-E Mounts Bay Road
Williamsburg, VA 23187-8784
Contact: Danny Poe, P.E.
Phone: (757) 253-6810

V.D.O.T.
Virginia Department of Transportation
Williamsburg Residency
4451 Ironbound Road
Williamsburg, Virginia 23188-2621
Contact: Khoi Nguyen, P.E.
Phone: (757) 253-4832

Miss Utility
Miss Utility of Virginia
204 Rivers Bend Boulevard
Chester, Virginia 23831
Phone: 1-800-552-7001

* Contractor to Notify Miss Utility
72 Hours Prior To Any Excavation,
As Required By Law



Vanasse Hangen Brustlin, Inc.
Transportation
Land Development
Environmental Services

Stormwater Notes

1. Stormwater management for this site is satisfied by master stormwater management planning associated with the Warhill Tract which included upgrades to the District Park West Pond, County BMP ID Code PC 105. Two two level spreaders and swales provided onsite.
2. This project is situated within Subwatershed 205 and Catchment 205-106-1 of Powhatan Creek.



CONSTRUCTION & EROSION CONTROL EVENT SCHEDULE

- 1. A PRECONSTRUCTION MEETING IS REQUIRED. THE CONTRACTOR SHALL CONTACT JAMES CITY COUNTY ENVIRONMENTAL DIVISION AT (757) 253-6670 FOR INFORMATION.
2. INSTALL SAFETY FENCE. CLEAR OR OTHERWISE SUFFICIENTLY PREPARE AREA TO ALLOW FOR THE PLACEMENT OF THE CONSTRUCTION ENTRANCE.
3. CONSTRUCT TEMPORARY CONSTRUCTION ENTRANCE AND TEMPORARY GRAVEL PARKING AREA.
4. ESTABLISH TREE PROTECTION/CLEARING LIMITS FLAGGING.
5. CLEAR SUFFICIENT AREA TO ALLOW INSTALLATION OF EROSION CONTROL PROTECTION MEASURES, AND EXCAVATION OF SEDIMENT TRAP.
6. EXCAVATE SEDIMENT TRAP AND GRAVEL OUTLET.
7. INSTALL SEDIMENT TRAP, NECESSARY DIVERSIONS, AND PERIMETER SILT FENCING.
8. CONDUCT DEMOLITION ACTIVITIES.
9. PROCEED WITH SITE CLEARING AND GRUBBING OPERATION AND COMMENCE ROUGH GRADING. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR LOCATION OF ONSITE TEMPORARY STOCKPILES. PROVIDE SILT FENCING OR OTHER MEASURES AS NECESSARY FOR THE STOCKPILES.
10. INSTALL INLET PROTECTIONS.
11. INSTALL UNDERGROUND UTILITIES.
12. FINE GRADE DRIVES AND PARKING AREAS.
13. COMPACT SUBGRADE, PLACE SUBBASE AND AGGREGATE BASE.
14. INSTALL ASPHALT PAVING, ENTRANCES, CONCRETE ENTRANCES, AND DRIVE AREAS.
15. TOPSOIL, SEED, AND MULCH DISTURBED AREAS AND INSTALL LANDSCAPING.
16. INSTALL PAVEMENT MARKINGS AND SIGNS.
17. CLEAN SITE AND REMOVE ALL CONSTRUCTION AND CONSTRUCTION RELATED DEBRIS FROM SITE.
18. PERFORM CHECK OF EROSION CONTROL MEASURES. SEDIMENT TRAPPING DEVICES SHALL BE CLEANED OF CONSTRUCTION RELATED DEBRIS AND SEDIMENT.
19. REMOVE COLLECTED SEDIMENT FROM REAR SWALE AND TRANSPORT OFF-SITE. ESTABLISH FINAL GRADES IN SWALE AND INSTALL STORMWATER CONTROL DEVICES.
20. REMOVE ALL TEMPORARY EROSION & SEDIMENT CONTROL MEASURES AFTER FINAL STABILIZATION OF SITE.

JAMES CITY COUNTY ENVIRONMENTAL DIVISION
EROSION AND SEDIMENT CONTROL NOTES
REVISED 7/6/01

THE PURPOSE OF THE EROSION CONTROL MEASURES SHOWN ON THESE PLANS SHALL BE TO PRECLUDE THE TRANSPORT OF ALL WATERBORNE SEDIMENTS RESULTING FROM CONSTRUCTION ACTIVITIES FROM ENTERING ONTO ADJACENT PROPERTIES OR STATE WATERS. IF FIELD INSPECTION REVEALS THE INADEQUACY OF THE PLAN TO CONFINED SEDIMENT TO THE PROJECT SITE, ALL APPROPRIATE MODIFICATIONS WILL BE MADE TO CORRECT ANY PLAN DEFICIENCIES. IN ADDITION TO THESE NOTES, ALL PROVISIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL APPLY TO THIS PROJECT.

- 1. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 3RD EDITION, 1992. THE CONTRACTOR SHALL BE THOROUGHLY FAMILIAR WITH ALL APPLICABLE MEASURES CONTAINED THEREIN THAT MAY BE PERTINENT TO THIS PROJECT, INCLUDING MINIMUM STANDARDS 1 THROUGH 19. IF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS FOUND TO BE INADEQUATE IN THE FIELD, THE MINIMUM STANDARDS WILL APPLY IN ADDITION TO THE PROVISIONS OF THE APPROVED PLAN.
2. AS A PREREQUISITE TO APPROVAL OF AN EROSION AND SEDIMENT CONTROL PLAN FOR LAND-DISTURBING ACTIVITIES, THE NAME OF A RESPONSIBLE LAND-DISTURBER SHALL BE PROVIDED. THE RESPONSIBLE LAND-DISTURBER SHALL BE AN INDIVIDUAL WHO HOLDS A VALID CERTIFICATE OF COMPETENCE ISSUED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND IS DEFINED AS THE PERSON IN CHARGE OF AND RESPONSIBLE FOR CARRYING OUT THE LAND-DISTURBING ACTIVITY. PERMITS OR PLANS ARE DEEMED CORRECT AND WILL NOT BE APPROVED UNTIL PROPER NOTIFICATION IS RECEIVED. ALSO, IF THE PERSON DESIGNATED AS RESPONSIBLE LAND-DISTURBER CHANGES BETWEEN THE TIME OF PLAN APPROVAL AND THE SCHEDULED PRECONSTRUCTION MEETING, THE ENVIRONMENTAL DIVISION SHALL BE INFORMED OF THE CHANGE, IN WRITING, 24-HOURS IN ADVANCE OF THE PRECONSTRUCTION MEETING.
3. A PRECONSTRUCTION MEETING SHALL BE HELD ON SITE BETWEEN THE COUNTY, THE DEVELOPER, THE PROJECT ENGINEER, THE RESPONSIBLE LAND-DISTURBER AND THE CONTRACTOR PRIOR TO ISSUANCE OF THE LAND DISTURBING PERMIT. THE CONTRACTOR SHALL SUBMIT A SEQUENCE OF CONSTRUCTION TO THE COUNTY FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING. THE DESIGNATED RESPONSIBLE LAND-DISTURBER IS REQUIRED TO ATTEND THE PRECONSTRUCTION MEETING FOR THE PROJECT.
4. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED BY A TEMPORARY CONSTRUCTION ENTRANCE TO PREVENT TRACKING OF MUD ONTO PUBLIC RIGHT-OF-WAYS. AN ENTRANCE PERMIT FOR TRANSPORTATION IS REQUIRED PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN STATE RIGHT-OF-WAYS. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD SHALL BE THOROUGHLY CLEANED AT THE END OF EACH DAY (STD & SPEC 3.02).
5. SEDIMENT BASINS AND TRAPS (STD & SPEC 3.13 AND 3.14), PERIMETER DIKES (STD & SPEC 3.09 AND 3.12), SEDIMENT FILTER BARRIERS (STD. & SPEC 3.05) AND OTHER MEASURES INTENDED TO TRAP SEDIMENT ON-SITE MUST BE CONSTRUCTED AS A FIRST STEP IN GRADING AND MUST BE MADE FUNCTIONAL PRIOR TO ANY UPSLOPE LAND DISTURBANCE TAKING PLACE. EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER INSTALLATION. PERIODIC INSPECTIONS OF THE EROSION CONTROL MEASURES BY THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE MADE TO ASSESS THEIR CONDITION. ANY NECESSARY MAINTENANCE OF THE MEASURES SHALL BE ACCOMPLISHED IMMEDIATELY AND SHALL INCLUDE THE REPAIR OF MEASURES DAMAGED BY ANY SUBCONTRACTOR INCLUDING THOSE OF THE PUBLIC UTILITY COMPANIES.
6. SURFACE FLOWS OVER CUT AND FILL SLOPES SHALL BE CONTROLLED BY EITHER REDIRECTING FLOWS FROM TRANSVERSING THE SLOPES OR BY INSTALLING MECHANICAL DEVICES TO SAFELY LOWER WATER DOWNSLOPE WITHOUT CAUSING EROSION. A TEMPORARY FILL DIVERSION (STD. & SPEC. 3.10) AND SLOPE DRAIN (STD. & SPEC. 3.15) SHALL BE INSTALLED PRIOR TO THE END OF EACH WORKING DAY.
7. SEDIMENT CONTROL MEASURES MAY REQUIRE MINOR FIELD ADJUSTMENTS AT TIME OF CONSTRUCTION TO INSURE THEIR INTENDED PURPOSE IS ACCOMPLISHED. ENVIRONMENTAL DIVISION APPROVAL WILL BE REQUIRED FOR OTHER DEVIATIONS FROM THE APPROVED PLAN.
8. THE CONTRACTOR SHALL PLACE SOIL STOCKPILES AT THE LOCATIONS SHOWN ON THE PLAN. SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. OFF-SITE WASTE OR BORROW AREAS SHALL BE APPROVED BY THE ENVIRONMENTAL DIVISION PRIOR TO THE IMPORT OF ANY BORROW OR EXPORT OF ANY WASTE TO OR FROM THE PROJECT SITE.
9. THE CONTRACTOR SHALL COMPLETE DRAINAGE FACILITIES WITHIN 30 DAYS FOLLOWING COMPLETION OF ROUGH GRADING AT ANY POINT WITHIN THE PROJECT. THE INSTALLATION OF DRAINAGE FACILITIES SHALL TAKE PRECEDENCE OVER ALL UNDERGROUND UTILITIES. OUTFALL DITCHES FROM DRAINAGE STRUCTURES SHALL BE STABILIZED IMMEDIATELY AFTER CONSTRUCTION OF THE SAME (STD & SPEC 3.18). THIS INCLUDES INSTALLATION OF EROSION CONTROL STONE OR PAVED DITCHES WHERE REQUIRED. ANY DRAINAGE OUTFALLS REQUIRED FOR A STREET MUST BE COMPLETED BEFORE STREET GRADING OR UTILITY INSTALLATION BEGINS.
10. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.
11. NO MORE THAN 300 FEET OF SANITARY SEWER, STORM DRAIN, WATER OR UNDERGROUND UTILITY LINES ARE TO BE OPEN AT ONE TIME. FOLLOWING INSTALLATION OF ANY PORTION OF THESE ITEMS, ALL DISTURBED AREAS ARE TO BE IMMEDIATELY STABILIZED (I.E., THE SAME DAY).
12. IF DISTURBED AREA STABILIZATION IS TO BE ACCOMPLISHED DURING THE MONTHS OF DECEMBER, JANUARY OR FEBRUARY, STABILIZATION SHALL CONSIST OF MULCHING (STD & SPEC 3.35). SEEDING WILL THEN TAKE PLACE AS SOON AS THE SEASON PERMITS.
13. THE TERM SEEDING, FINAL VEGETATIVE COVER OR STABILIZATION ON THIS PLAN SHALL MEAN THE SUCCESSFUL GERMINATION AND ESTABLISHMENT OF A STABLE GRASS COVER FROM A PROPERLY PREPARED SEEDBED CONTAINING THE SPECIFIED AMOUNTS OF SEED, LIMC AND FERTILIZER (STD & SPEC 3.32). IRRIGATION SHALL BE REQUIRED AS NECESSARY TO ENSURE ESTABLISHMENT OF GRASS COVER.
14. ALL SLOPES STEEPER THAN 3H:1V SHALL REQUIRE THE USE OF EROSION CONTROL BLANKETS AND MATTINGS TO AID IN THE ESTABLISHMENT OF A VEGETATIVE COVER. INSTALLATION OF EROSION CONTROL BLANKETS WITH STD. & SPEC. 3.36, MULCHING, STD. & SPEC. 3.35, SOIL STABILIZATION BLANKETS AND MATTING AND MANUFACTURERS INSTRUCTIONS. NO SLOPES SHALL BE CREATED STEEPER THAN 2H:1V.
15. INLET PROTECTION (STD & SPEC 3.07 AND 3.08) SHALL BE PROVIDED FOR ALL STORM DRAIN AND CULVERT INLETS FOLLOWING CONSTRUCTION OF THE SAME.
16. TEMPORARY LINERS, SUCH AS POLYETHYLENE SHEETS, SHALL BE PROVIDED FOR ALL PAVED DITCHES UNTIL THE PERMANENT CONCRETE LINER IS INSTALLED.
17. PAVED DITCHES SHALL BE REQUIRED WHEREVER ACCELERATED EROSION IS EVIDENT. PARTICULAR ATTENTION SHALL BE PAID TO THOSE AREAS WHERE GRADES EXCEED 3 PERCENT.
18. TEMPORARY EROSION CONTROL MEASURES SUCH AS SILT FENCE ARE NOT TO BE REMOVED UNTIL ALL DISTURBED AREAS ARE STABILIZED. TRAPPED SEDIMENT SHALL BE SPREAD, SEEDED AND MULCHED. AFTER THE PROJECT AND STABILIZATION IS COMPLETE, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS.
19. NO SEDIMENT TRAP OR SEDIMENT BASIN SHALL BE REMOVED UNTIL A) AT LEAST 75 PERCENT OF THE LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN SOLD TO A THIRD PARTY (UNRELATED TO THE DEVELOPER) FOR THE CONSTRUCTION OF HOMES AND/OR B) 60 PERCENT OF THE SINGLE FAMILY LOTS WITHIN THE DRAINAGE AREA TO THE TRAP OR BASIN HAVE BEEN COMPLETED AND THE SOIL STABILIZED. A BULK SALE OF THE LOTS TO ANOTHER BUILDER DOES NOT SATISFY THIS PROVISION. SEDIMENT TRAPS AND SEDIMENT BASINS SHALL NOT BE REMOVED WITHOUT THE EXPRESS AUTHORIZATION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION.
20. RECORD DRAWINGS (AS-BUILTS) AND CONSTRUCTION CERTIFICATIONS ARE BOTH REQUIRED FOR NEWLY CONSTRUCTED OR MODIFIED STORMWATER MANAGEMENT/BMP FACILITIES. CERTIFICATION ACTIVITIES SHALL BE ADEQUATELY COORDINATED AND PERFORMED BEFORE, DURING AND FOLLOWING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER MANAGEMENT/BMP FACILITIES, RECORD DRAWING AND CONSTRUCTION CERTIFICATION, STANDARD FORMS & INSTRUCTIONS.
21. DESIGN AND CONSTRUCTION OF PRIVATE-TYPE SITE DRAINAGE SYSTEMS OUTSIDE VDOT RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT VERSION OF THE JAMES CITY COUNTY ENVIRONMENTAL DIVISION, STORMWATER DRAINAGE CONVEYANCE SYSTEMS (NON-BMP RELATED), GENERAL DESIGN AND CONSTRUCTION GUIDELINES.

EROSION & SEDIMENT CONTROL NARRATIVE (CONTINUED)

OFF-SITE AREAS
THERE WILL BE NO OFF-SITE DISTURBANCE ASSOCIATED WITH THIS PROJECT.

ON-SITE SOILS
THE PREDOMINATE SOIL TYPES PRESENT ON THE SITE ARE SLAGLE FINE SANDY LOAM AND KEMPSVILLE EMPORIA FINE SANDY LOAM. THESE BELONG TO HYDROLOGIC SOIL GROUPS B&C. THE KEMPSVILLE EMPORIA OCCURS IN THE FLATTER AREA OF THE SITE AND THE SLAGLE FINE SANDY LOAM ON SLIGHTLY MORE CONTOURED REAR OF THE SITE. PERMEABILITY AND EROSION HAZARD IS MODERATE IN BOTH SOIL TYPES. BOTH SOILS TYPES HAVE A MODERATE SHRINK-SWELL POTENTIAL.

CRITICAL AREAS
THERE ARE NO CRITICAL AREAS WITHIN THE SITE.

EROSION AND SEDIMENT CONTROL METHODS
THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL MEASURES NECESSARY TO PREVENT SOIL FROM ERODING OR BEING TRACKED ONTO ADJACENT PROPERTY, STREETS, DRAINAGE SYSTEMS AND WATERWAYS. UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, 1992 EDITION". THE MINIMUM STANDARDS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY A VARIANCE.

PHASED CONSTRUCTION - CONSTRUCTION SHALL BE PHASED TO MINIMIZE THE EXTENT OF DISTURBED AREA AT ANY GIVEN TIME.

SILT FENCE BARRIER - SILT FENCE SEDIMENT BARRIERS WILL BE INSTALLED DOWNSLOPE OF DISTURBED AREAS TO FILTER SEDIMENT-LADEN RUNOFF FROM SHEET FLOW AND SHALLOW CONCENTRATED FLOWS. ADDITIONALLY, SILT FENCE SHALL BE INSTALLED AROUND ALL STOCKPILES.

TEMPORARY CONSTRUCTION ENTRANCE - A TEMPORARY CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SHOWN ON THE PLAN.

INLET PROTECTION - INLET PROTECTION SHALL BE INSTALLED TO PREVENT SEDIMENT FROM ENTERING STORM DRAINS OR STRUCTURES.

TEMPORARY SEDIMENT TRAP - A TEMPORARY SEDIMENT TRAP WILL BE CONSTRUCTED TO TRAP SEDIMENT FROM DISTURBED AREAS.

TREE PROTECTION - TREE PROTECTION WILL BE INSTALLED ALONG THE PERIMETER OF ALL AREAS TO BE CLEARED AS SHOWN ON THE PLANS.

PERMANENT SEEDING - ALL DISTURBED AREAS NOT OTHERWISE STABILIZED SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. SEEDING SHALL BE IN CONFORMANCE WITH THE TABLE ON SHEET C-10 AND IN ACCORDANCE WITH STANDARD & SPECIFICATION 3.32 OF THE HANDBOOK.

DIVERSION DIKES - WILL BE INSTALLED TO DIVERT STORMWATER INTO THE SEDIMENT TRAP AS WELL AS TO ENSURE RUNOFF DOES NOT DIMINISH STORMWATER QUANTITIES TO THE EXISTING CEMETARY

SAFETY FENCE - PHYSICAL BARRIER PROTECTING THE CEMETARY FROM SITE WORK

DUST CONTROL - CONTRACTOR SHALL EMPLOY VARIOUS VESCH APPROVED METHODS FOR CONTROLLING DUST DUE TO CONSTRUCTION ACTIVITIES

STORMWATER RUNOFF CONSIDERATIONS
CALCULATIONS OF RUN-OFF BEFORE AND AFTER DEVELOPMENT INDICATE THAT THERE WILL BE A NET INCREASE IN PEAK RUN-OFF AS A RESULT OF DEVELOPMENT. THE RUN-OFF WILL BE COLLECTED AND DETAINED IN A WIDE BOTTOMED SWALE THAT FLOWS OVER A LEVEL SPREADER PRIOR TO DISCHARGING OFF-SITE. FOLLOWING DEVELOPMENT OF THE NEIGHBORING PARCEL BY THOMAS NELSON COMMUNITY COLLEGE, A YARD INLET MAY BE PROVIDED TO CONVEY STORMWATER.

MANAGEMENT STRATEGIES

- 1. CONSTRUCTION SHALL BE PHASED TO REDUCE THE OVERALL AREA THAT IS NOT STABILIZED AT A GIVEN TIME DURING CONSTRUCTION.
2. CONSTRUCTION WILL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
3. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED AS A FIRST STEP IN ANY LAND DISTURBING OPERATIONS.
4. TEMPORARY SEEDING OR OTHER STABILIZATION WILL FOLLOW IMMEDIATELY AFTER GRADING.
5. AREAS THAT ARE NOT TO BE DISTURBED WILL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC.
6. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES.
7. AFTER ADEQUATE STABILIZATION IS ACHIEVED, THE TEMPORARY EROSION AND SEDIMENT CONTROLS MEASURES WILL BE CLEANED UP AND REMOVED.

MAINTENANCE OF CONTROLS

IN GENERAL ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL. THE FOLLOWING ITEMS WILL BE CHECKED IN PARTICULAR.
1. THE SILT FENCE BARRIERS WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF WAY TO THE TOP OF THE BARRIER.
2. INLET PROTECTION DEVICES SHALL BE CHECKED REGULARLY AND SHALL BE CLEANED OR REPLACED IF CLOGGING OR EXCESSIVE PONDING IS OBSERVED.
3. THE SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND OF GRASS IS MAINTAINED. AREAS SHALL BE FERTILIZED AND RE-SEEDED AS NEEDED.
4. THE SEDIMENT TRAP SHALL BE INSPECTED REGULARLY AND SHALL BE CLEANED OF ERODED MATERIAL WHENEVER THE WET STORAGE VOLUME HAS BEEN REDUCED BY HALF.

NOTES:

- 1. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL APPROVED MEASURES AS SHOWN ON THE DRAWINGS. ANY ADDITIONAL MEASURES REQUIRED BY JAMES CITY COUNTY OFFICIALS DUE TO FIELD CONDITIONS SHALL BECOME PART OF THE EROSION AND SEDIMENT CONTROL PLAN FOR THE PROPERTY. ALL FIELD CHANGES MUST BE APPROVED BY THE COUNTY'S INSPECTOR PRIOR TO INSTALLATION.
2. THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN ALL MEASURES TO PREVENT SOIL FROM ERODING OR BEING TRACKED ONTO ADJACENT PROPERTY, STREETS, DRAINAGE SYSTEMS, AND WATERWAYS. THE CONTRACTOR SHALL ALSO PROVIDE SATISFACTORY MEASURES FOR PREVENTING SOIL FROM ACCUMULATING ON THE PUBLIC ROADWAYS BY CONSTRUCTION VEHICLES LEAVING THE SITE, INCLUDING WASH RACKS IF NECESSARY. ALL DEVICES SHALL BE CLEANED OF MUD, DEBRIS, AND OTHER ERODED MATERIAL DURING THE OPERATION. INSPECTION OF DEVICES SHALL BE A DAILY ROUTINE AND REQUIRED AFTER EVERY RAINFALL EVENT.
3. THE CONTRACTOR SHALL MONITOR AND TAKE PRECAUTIONS TO CONTROL DUST, INCLUDING BUT NOT LIMITED TO USING WATER OR CHEMICALS, LIMITING THE NUMBER OF VEHICLES ALLOWED ON-SITE, MINIMIZING THE OPERATING SPEED OF ALL VEHICLES, ETC. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE DAILY SWEEPING OF PUBLIC RIGHT-OF-WAY SHOULD SEDIMENT ACCUMULATE ON PAVED SURFACES.

VDOT

GENERAL NOTES
REVISED 08/04

1. A LAND USE PERMIT MUST BE OBTAINED FROM VDOT BEFORE ANY CONSTRUCTION OR STARTED WITHIN THE EXISTING STATE RIGHT OF WAY. CONTACT THE VDOT RESIDENCY FOR THE PERMIT FEE AND BOND AMOUNT. ALL LAND USE PERMIT APPLICATIONS MUST HAVE TWO (2) SETS OF APPROVED PLANS, A CHECK FOR THE PROCESSING FEE MADE PAYABLE TO VDOT, AND SURETY IN THE REQUIRED AMOUNT.

2. THE DEVELOPER IS RESPONSIBLE FOR THE RELOCATION OF ANY UTILITIES OR PAVEMENT MARKINGS WITHIN THE EXISTING RIGHT OF WAY OR PROPOSED RIGHT OF WAY REQUIRED BY THE DEVELOPMENT OF THE SITE/SUBDIVISION.

3. THE DEVELOPER IS RESPONSIBLE FOR THE COST OF A TRAFFIC SIGNAL OR ANY MODIFICATIONS TO AN EXISTING TRAFFIC SIGNAL THAT ARE DETERMINED TO BE NECESSARY. THESE COSTS WILL BE CHARGED UNDER AN OPERATIONAL PROJECT (ACCOUNTS RECEIVABLE) NUMBER. CONTACT THE VDOT RESIDENCY FOR THE PROPER PROCEDURE.

4. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONSULT WITH THE DEVELOPER'S ENGINEER TO VERIFY THE FINAL APPROVAL OF THE PLANS, OR ANY REVISED PLANS, BY THE VARIOUS AGENCIES (COUNTY, VDOT, ETC.).

5. VDOT APPROVAL OF THESE PLANS WILL EXPIRE IN FIVE (5) YEARS FROM THE DATE OF APPROVAL.

6. VDOT IS TO RECEIVE WRITTEN NOTIFICATION 48 HOURS PRIOR TO THE START OF ANY WORK. A PRE-CONSTRUCTION MEETING WILL BE REQUIRED PRIOR TO ANY LAND DISTURBANCE OF THE SITE. THE DEVELOPER, HIS ENGINEER, GEOTECHNICAL ENGINEER AND CONTRACTOR SHALL ATTEND THE PRE-CONSTRUCTION MEETING. THE DEVELOPER'S CONTRACTOR SHALL HAVE A PROPOSED PROGRESS SCHEDULE OF WORK.

7. ANY ERRORS, CONFLICTS, OR DISCREPANCIES FOUND ON THE APPROVED PLANS SHALL BE REPORTED TO THE DEVELOPER'S ENGINEER AND VDOT FOR RESOLUTION BEFORE PROCEEDING FURTHER WITH THE WORK.

8. THE DEVELOPER'S ENGINEER AND CONTRACTOR (SUB-CONTRACTOR) SHALL VERIFY IN THE FIELD THE ELEVATIONS OF ALL POINTS OF CONNECTION OF SUBMITTAL TO VDOT PRIOR TO THE PROOF ROLL OF THE PAVEMENT TYPICAL, DRAINAGE STRUCTURES, WATERLINES, ETC., PRIOR TO THE CONSTRUCTION IN THE FIELD.

9. AN OPERATIONAL PROJECT (ACCOUNTS RECEIVABLE) NUMBER MAY BE ASSIGNED TO THE SITE/SUBDIVISION. THE DEVELOPER WILL BE RESPONSIBLE FOR THIS BY PROVIDING THE NECESSARY INFORMATION REQUESTED BY VDOT.

10. ALL MATERIALS AND CONSTRUCTION WITHIN THE PROPOSED PUBLIC RIGHT OF WAY TO INCLUDE ENTRANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT VDOT SPECIFICATIONS AND STANDARDS.

11. ANY REQUEST FOR A CHANGE OF SPECIFIED MATERIALS OR DESIGN FROM THE APPROVED PLANS WILL NEED TO BE SUBMITTED TO VDOT. A LETTER MUST ACCOMPANY THE PROPOSED CHANGES AND REVISED PLAN SHEETS AND/OR DRAINAGE CALCULATIONS FOR REVIEW AND APPROVAL BY THE VDOT RESIDENT ENGINEER.

12. THE DEVELOPER WILL BE RESPONSIBLE FOR PROVIDING THE GEOTECHNICAL ENGINEER WITH ALL NECESSARY INFORMATION. THE PROFESSIONAL GEOLOGIST WILL SUBMIT A COMPLETE REPORT WITH BORING DATA AND RECOMMENDATIONS TO VDOT FOR APPROVAL OF HIS PROPOSED METHOD OF CONSTRUCTION. THIS REPORT SHALL INCLUDE SHRINK SWELL VALUES OF THE SOILS, MOISTURE SENSITIVE SOILS, SIEVE ANALYSES, DRY AND WET CBR VALUES, STANDARD PROCTOR AND ATERBERG LIMITS. THE REPORT WILL SHOW THE BORE LOCATIONS, TYPES OF SOILS IDENTIFIED AND STABILIZATION RECOMMENDATIONS FOR SOILS WITH POOR SUPPORT VALUES, HIGH MOISTURE, MICA, AND SILT CONTENT. THE REPORT SHALL INCLUDE A PAVEMENT STRUCTURAL DESIGN RECOMMENDATION BASED ON LABORATORY TESTS OF THE ACTUAL SOILS AND APPROVED TRAFFIC VOLUME FOR THE SITE/SUBDIVISION IN ACCORDANCE WITH THE LATEST VDOT PAVEMENT DESIGN GUIDE FOR SUBDIVISION AND SECONDARY ROADS IN VIRGINIA.

13. WHEN SOILS OCCUR THAT ARE UNSUITABLE FOR FOUNDATIONS, EMBANKMENT FILL, PIPE BACKFILL, SUBGRADE, OR OTHER ROADWAY PURPOSES, THE DEVELOPER'S CONTRACTOR SHALL EXCAVATE SAID MATERIAL UNDER THE DIRECTION OF THE DEVELOPER'S ENGINEER. THE CONTRACTOR SHALL REMOVE SUCH MATERIAL BELOW THE PROPOSED GRADES SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE DEVELOPER'S ENGINEER AND VDOT UPON THE DISCOVERY OF THE UNSUITABLE MATERIAL. CONCURRENCE OF THE ENGINEER SHALL BE OBTAINED BEFORE ADDITIONAL WORK IS UNDERTAKEN.

14. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL EROSION CONTROL MEASURES WILL BE IN PLACE AND REVIEWED BY THE CONTRACTOR DAILY AND AFTER ALL INCREMENTAL WORK IS COMPLETED. THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SILTATION. ANY CORRECTIONS OR REPAIRS WILL BE MADE IMMEDIATELY, IN ACCORDANCE WITH ROAD AND BRIDGE SPECIFICATIONS. VDOT REQUIRES AN INDEPENDENT INSPECTION OF THE ACTUAL CONSTRUCTION OF ANY EROSION AND RECREATION, HOLDING A RESPONSIBLE LAND DISTURBER CERTIFICATION, TO BE IN CHARGE OF THE LAND DISTURBING ACTIVITY AND ON THE WORK SITE AT ALL TIMES.

15. THE CONTRACTOR AND SUBCONTRACTOR(S) SHALL HAVE A COPY OF THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS AND THE VDOT ROAD AND BRIDGE STANDARDS. THE CONTRACTOR SHALL HAVE AT LEAST ONE (1) SET OF APPROVED PLANS WITH ALL APPROVED REVISIONS. THE LAND USE PERMIT WILL BE AT THE SITE AT ALL TIMES.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL UNDERGROUND AND OVERHEAD UTILITIES, WHETHER OR NOT THEY ARE SHOWN ON THE PLANS. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPAIRS AT HIS OWN EXPENSE OF ANY UTILITIES DAMAGED BY HIS CONSTRUCTION METHODS. MISS UTILITY MUST BE CONTACTED AT 1-800-552-7001 AT LEAST 72 HOURS PRIOR TO THE START OF ANY CONSTRUCTION.

17. THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING, WITH MATCHING MATERIALS, ANY PAVEMENT, CURB AND GUTTER, DRIVEWAY, PIPE, SIDEWALK, ETC. THAT ARE DAMAGED DURING THE CONSTRUCTION OF THE SITE/SUBDIVISION.

18. CERTIFICATION AND SOURCE OF MATERIALS ARE TO BE SUBMITTED TO VDOT. ALL MATERIALS MUST MEET VDOT SPECIFICATIONS AND STANDARDS.

19. THE DEVELOPER'S GEOTECHNICAL ENGINEER AND/OR HIS CERTIFIED MATERIALS TECHNICIANS WILL PERFORM COMPACTION (DENSITY) TESTS FOR REVIEW BY VDOT. ALL TESTS WILL BE PERFORMED IN ACCORDANCE WITH THE CURRENT VDOT SPECIFICATIONS AND STANDARDS. BACKFILL MATERIAL FOR PIPE, STRUCTURES, AND UTILITIES LOCATED WITHIN THE PROPOSED RIGHT OF WAY WILL BE COMPACTED AND TESTED AS THE FILL MATERIAL IS PLACED IN UNIFORM LIFTS. A MINIMUM OF 95% DENSITY WITH THE SOILS STANDARD PROCTOR WILL BE OBTAINED FOR THE FINAL 6" OF THE FINISHED SUBGRADE. 100% DENSITY WILL BE OBTAINED. THE TEST RESULTS WILL BE SUBMITTED TO VDOT FOR REVIEW AND COMPLIANCE OF THE MATERIALS, PRIOR TO THE DEVELOPER'S CONTRACTOR REQUESTING AN INSPECTION FOR A PROOF ROLL ON THE SUBGRADE, AGGREGATE STONE, BASE MIX (ASPHALT) OR THE PLACEMENT OF THE SURFACE MIX.

20. ALL DRAINAGE EASEMENTS SHALL BE LABELED AS EITHER "DRAINAGE EASEMENTS" OR "COUNTY DRAINAGE EASEMENTS" AND SHALL NOT BE DEDICATED TO VDOT BECOMING THE RESPONSIBILITY OF VDOT. VDOT DOES NOT ACCEPT RESPONSIBILITY FOR THE MAINTENANCE OF THE DETENTION/RETENTION POND OR ITS STRUCTURE, AND SHALL BE SAVED HARMLESS FROM ANY DAMAGES.

21. TEMPORARY DRAINAGE MEASURES WILL BE MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION TO RELIEVE AREAS THAT MAY CAUSE DAMAGE TO THE RIGHT OF WAY, ROADWAY, OR ADJACENT PROPERTIES.

22. DRY GUTTER (RIP RAP) IS NOT ALLOWED IN THE DITCHES ON VDOT RIGHT OF WAY.

23. ALL STORM SEWER PIPES SHALL BE REINFORCED CONCRETE PIPE (TONGUE AND GROOVE) IN ACCORDANCE WITH ASTM-C-76 OR AN ALTERNATIVE THAT HAS BEEN APPROVED ON THE PLANS.

24. INSTALLATION OF PIPE CULVERTS, STORM SEWERS, AND DRAINAGE STRUCTURES SHALL HAVE BEDDING MATERIAL PLACED UNDER THE PIPES AND STRUCTURES IN ACCORDANCE WITH VDOT SPECIFICATIONS (A MINIMUM OF 4" UNDER PIPES AND A MINIMUM OF 8" UNDER DRAINAGE STRUCTURES). THE BACKFILL MATERIAL SHALL BE SUITABLE MATERIAL FREE OF DEBRIS, SILT, TREE ROOTS (ORGANIC MATERIAL), AND EXCESSIVE MOISTURE. THE FILL MATERIAL WILL BE COMPACTED IN UNIFORM LIFTS AND TESTED FOR DENSITY.

25. ALL VEGETATION (ORGANIC MATERIAL, ROOTS, STUMPS) AND OVERBURDEN ARE TO BE REMOVED FROM THE SHOULDERS PRIOR TO THE CONSTRUCTION OF THE ROAD'S SUBGRADE.

26. ALL CONCRETE SHALL BE CLASS A3-AE (3,000 PSI WITH AIR ENTRAINMENT ADDITIVE) AND TESTED BY THE DEVELOPER'S GEOTECHNICAL ENGINEER FOR CONFORMANCE TO VDOT SPECIFICATIONS AND STANDARDS.

VDOT GENERAL NOTES - CONTINUED

27. THERE SHALL BE A MINIMUM OF 6" OF COMPACTED 21-B AGGREGATE MATERIAL OR STONE DEPTH INSTALLED IN ACCORDANCE WITH THE EXISTING PAVEMENT TYPICAL UNDER THE CURB AND GUTTER. THIS MATERIAL SHALL EXTEND 1' BEYOND THE BACK OF THE CURB AND GUTTER. DENSITY TESTS SHALL BE TAKEN PRIOR TO A PROOF ROLL OF THE MATERIAL AND PLACEMENT OF THE CURB/CURB AND GUTTER. UNDERDRAINS WILL BE INSTALLED ON RAISED CURB MEDIANS IN ACCORDANCE WITH CURRENT VDOT SPECIFICATIONS AND STANDARDS.

28. ALL STREETS WITH CURB AND GUTTER SHALL HAVE A STANDARD CO ENTRANCE INSTALLED IN ACCORDANCE WITH THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS AND STANDARDS. THE CURB AND GUTTER PAN SHALL BE REMOVED PRIOR TO THE INSTALLATION OF THE ENTRANCE UNLESS A WIFE-DOWN OF THE CURB WAS MADE DURING THE INSTALLATION OF THE CURB AND GUTTER. THE SAW CUTTING AND REMOVAL OF ONLY THE CURB PORTION IS NOT ALLOWED. IT IS THE DEVELOPER'S RESPONSIBILITY TO INSURE THAT THE BUILDERS HAVE INSTALLED ALL CONCRETE ENTRANCES IN ACCORDANCE WITH VDOT SPECIFICATIONS AND STANDARDS.

29. ALL UNDERGROUND UTILITIES ARE TO BE IN PLACE PRIOR TO THE PLACEMENT OF THE BASE MATERIAL AND SHALL HAVE A MINIMUM COVERING OF 36" ON CURB AND GUTTER STREETS. THE AREA DIRECTLY BEHIND THE CURB TO THE RIGHT OF WAY LINE SHALL BE RELATIVELY FLAT AT THE RIGHT OF WAY LINE LOCATION. THE DEVELOPER'S CONTRACTOR SHOULD CUT EMBANKMENTS TO THE RIGHT OF WAY LINE PRIOR TO THE INSTALLATION OF ALL UNDERGROUND UTILITIES TO INSURE A MINIMUM 36" OF COVER.

30. THE SUB-BASE AND/OR BASE MATERIAL SHALL HAVE A ROLLER PATTERN AND A CONTROL STRIP WITH DENSITIES PERFORMED ON THE MATERIAL AND THE TEST RESULTS SUBMITTED TO VDOT PRIOR TO THE PROOF ROLL OF THE MATERIAL AND THE PLACEMENT OF THE ASPHALT (HOT MIX) COURSE. THE MATERIAL SHALL BE AT FINISHED GRADE, HAVE THE TEMPLATES AS SHOWN IN THE PAVEMENT TYPICAL, AND HAVE A STONE DEPTH AND PROOF ROLL PERFORMED BY VDOT AND THE DEVELOPER'S SOILS ENGINEER. DENSITY (COMPACTION) TESTS WILL BE PERFORMED USING A ROLLER PATTERN AND A CONTROL STRIP IN ACCORDANCE WITH CURRENT VDOT SPECIFICATIONS AND STANDARDS TO ACQUIRE THE THEORETICAL DENSITY OF THE MATERIAL. OPTIMUM MOISTURE SHALL COME FROM THE SUPPLIER OF THE MATERIAL. ANY YIELD MATERIAL MUST BE CORRECTED PRIOR TO THE PLACEMENT OF THE HOT MIX (ASPHALT). THE HOT MIX SHALL BE PLACED WITHIN 72 HOURS AFTER THE PROOF ROLL HAS BEEN COMPLETED SATISFACTORILY AND ANY SIGNIFICANT RAINFALL PRIOR TO THE PLACEMENT OF THE PRIME COAT AND/OR HOT MIX WILL REQUIRE ANOTHER PROOF ROLL TO INSURE THE MATERIAL IS STABILIZED AND NON-YIELDING.

31. IN ACCORDANCE WITH SECTION 311 OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS, A PRIME COAT OF .30 GAL /SQ. YD. WILL BE REQUIRED FOR ANY PAVEMENT TYPICAL WITH LESS THAN 4" OF HOT MIX PRIOR TO THE PLACEMENT OF THE SURFACE COURSE.

32. ALL HOT MIX (ASPHALT) COURSES SHALL BE PLACED IN ACCORDANCE WITH SECTION 315 OF THE CURRENT VDOT ROAD AND BRIDGE SPECIFICATIONS. THE WEATHER LIMITATIONS OF 40 F SURFACE TEMPERATURE OR 50 F AND RISING AIR TEMPERATURE SHALL BE FOLLOWED. THE DEVELOPER'S GEOTECHNICAL ENGINEER SHALL TEST THE MATERIAL TO INSURE COMPLIANCE WITH CURRENT VDOT SPECIFICATIONS AND THE SUPPLIER'S JOB MIX DESIGN. THE DEVELOPER'S GEOTECHNICAL ENGINEER SHALL ALSO PERFORM A ROLLER PATTERN AND CONTROL STRIP FOR THE THEORETICAL DENSITY (COMPACTION) OF THE MATERIAL IN CONFORMANCE WITH THE CURRENT VDOT SPECIFICATIONS.

33. ALL UTILITY CABINETS, PEDESTALS, AND STREETLIGHTS SHALL BE LOCATED IN ACCORDANCE WITH CLEAR ZONE REQUIREMENTS, AS NOTED IN THE ROAD DESIGN MANUAL. THIS INCLUDES UTILITY CABINETS, PEDESTALS, OR FIRE HYDRANTS LOCATED ON THE SHOULDER.

34. ALL STORM PIPE, DROP INLET STRUCTURES, DITCHES, AND CURB AND GUTTER SHALL BE CLEANED OF DEBRIS AND SILT DURING THE LAST STAGES OF CONSTRUCTION.

35. FLOWERS, SHRUBS, AND TREES SHALL NOT BE PLACED WITHIN THE PROPOSED RIGHT OF WAY BY THE DEVELOPER OR HOMEOWNER WITHOUT AN APPROVED SET OF PLANS AND AN APPROVED PLANTING AGREEMENT. NO IRRIGATION (SPRINKLER) SYSTEMS SHALL BE LOCATED WITHIN THE PROPOSED RIGHT OF WAY. ANY IRRIGATION SYSTEM FOUND WITHIN THE RIGHT OF WAY WILL BE REMOVED PRIOR TO THE ACCEPTANCE OF THE STREETS AND ALL COSTS WILL BE BORNE BY THE OWNER. NO BRICK COLUMNS, ENDWALLS, AND/OR BRICK MAILBOXES WILL BE CONSTRUCTED OR INSTALLED IN THE PROPOSED RIGHT OF WAY. ANY OF THE ABOVE ITEMS FOUND IN THE PROPOSED RIGHT OF WAY WILL BE REMOVED, AND ALL COSTS OF THE REMOVAL WILL BE BORNE BY THE OWNER AND/OR DEVELOPER. THE DEVELOPER IS RESPONSIBLE FOR INSTALLING MAILBOX POSTS.

36. NO EASEMENTS SHALL ENCROACH UPON THE PROPOSED RIGHT OF WAY; ANY EASEMENTS LOCATED WITHIN THE PROPOSED RIGHT OF WAY MUST BE REMOVED FROM THE PLAN PRIOR TO THE RECORDATION OF THE PLAN. A DEED OF QUIT CLAIM WILL BE REQUIRED ON ANY EASEMENTS LOCATED WITHIN THE PROPOSED RIGHT OF WAY PRIOR TO THE ACCEPTANCE OF THE STREETS INTO THE STATE SECONDARY ROAD SYSTEM.

37. CONTACT MR. SAL SIBILIA 72 HOURS IN ADVANCE OF ALL PAVEMENT MARKINGS/SIGN INSTALLATIONS AT (757) 925-1679. FAILURE TO DO SO MAY RESULT IN ADDITIONAL COST TO THE DEVELOPER.

38. CONTACT TRAFFIC ENGINEERING AT (757) 925-2693 A MINIMUM OF 48 HOURS IN ADVANCE WHENEVER AN OPEN CUT OR BORING OF A UTILITY LINE ACROSS A ROAD IS WITHIN 400 FEET OF A TRAFFIC SIGNAL, SO THE LINES CAN BE MARKED. FAILURE TO DO SO COULD BE A COSTLY REPAIR FOR THE DEVELOPER.

39. VDOT DOES NOT ASSUME RESPONSIBILITY FOR MAINTENANCE OF DETENTION/RETENTION POND(S) OR ITS STRUCTURES, AND SHALL BE SAVED HARMLESS FROM ANY DAMAGE.



Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

11832 Rock Landing Drive, Suite 207
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757-673-3386 • FAX 757-873-0757

Prepared for:

Zion Baptist Church

Table with 4 columns: No., Revision, Date, Appr. and 4 rows of empty cells.

PROPOSED IMPROVEMENTS FOR THIS PROJECT WILL REQUIRE COORDINATION WITH COUNTY'S AGENT DUE TO ONGOING IMPROVEMENTS TO RICHMOND AND CENTERVILLE ROAD.

Table with 3 columns: Designed by, Drawn by, Checked by and 3 rows of entries.

Zion Baptist Church

6373 Richmond Road

Williamsburg, Virginia

Issued for:

Site Plan Approval

Not Approved for Construction

Drawing Title

Erosion Control and VDOT Notes

THIS PROJECT IS SITUATED WITHIN SUBWATERSHED 205 AND CATCHMENT 205-106-1 OF POWHATAN CREEK

Professional Engineer seal for Stephen Eric Stewart, No. 040298, 11/19/06, and drawing title C-2, Sheet 2 of 15, Project Number 3152901.

N/F
JAMES CITY COUNTY
PARCEL 2 - WARHILL TRACT
INST. #030017220
TAX PARCEL (32-1)(1-13)

VIRGINIA STATE PLANE
COORDINATES SYSTEM (NAD83)

N/F
JAMES CITY COUNTY
PARCEL 2 - WARHILL TRACT
INST. #030017220
TAX PARCEL (32-1)(1-13)

TAX PARCEL
(24-3)(1-47)
3.783 ACRES

PROVIDE 6" ASTM M-43; VDOT #8
OPEN GRADED COURSE AGGREGATE
UNDERLAIN BY FILTER FABRIC PER
VESCH SPEC 3.19

PROVIDE 150 SY
OF EC-3 MATTING

PROVIDE 30SY
OF EC-3 MATTING

PROPOSED
EXPANSION
5900 ft² EP 126.71
H=30 ft., 288 SEATS
FFE = 126.75

N/F
JAMES CITY COUNTY
PARCEL 2 - WARHILL TRACT
INST. #030017220
TAX PARCEL (32-1)(1-13)

EXISTING 30'
VEPCO R/W
DB 23, PG. 349
DB 79, PG. 77

EXISTING VARIABLE
WIDTH
HAMPTON ROADS
SANITATION DISTRICT
PERPETUAL EASEMENT
DB 747, PG. 912
LIMITS OF CLEARING
AND DISTURBANCE

EXISTING 10'
VEPCO R/W
DB 75, PG. 382

RELOCATE
POWER POLE

APPROXIMATE LOCATION
OF EXISTING VARIABLE
WIDTH DRAINAGE
AND UTILITY EASEMENT
DB 248, PG. 756

EXISTING 10' PERMANENT
SEWER EASEMENT
DB 186, PG. 683

RICHMOND ROAD (160' R/W) U.S. ROUTE 60

CENTERVILLE ROAD (40' R/W) STATE ROUTE 615



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Sign Summary

M.U.T.C.D. Number	Specification Width	Specification Height	Desc.
R1-1	30"	30"	STOP
R7-8	12"	18"	RESERVED PARKING
R7-8A	12"	6"	VAN
R3-2	24"	24"	NO LEFT TURN

PROPOSED IMPROVEMENTS FOR THIS PROJECT WILL REQUIRE COORDINATION WITH COUNTY'S AGENT DUE TO ONGOING IMPROVEMENTS TO RICHMOND AND CENTERVILLE ROAD.

REV	PER PLATTED PROPERTY LINE	DATE	MRG
06/27/06			

Designed by SES Drawn by ARA Checked by SES
CAD checked by Approved by ADS
Scale 1"=25' Date November 13, 2006
Project Title

Zion Baptist Church

6373 Richmond Road
Williamsburg, Virginia

Site Plan Approval

Not Approved for Construction

Layout and Materials Plan

THIS PROJECT IS SITUATED WITHIN SUBWATERSHED 205 AND CATCHMENT 205-106-1 OF POWHATAN CREEK

Drawing Number
C-4
Sheet 4 of 15
Project Number
31529.01

Parking Summary Chart

Description	Existing	Required	Provided
STANDARD SPACES (9' X 18')	39	58	63
STANDARD HANDICAPPED SPACES (13' X 18')	1	2	2
VAN ACCESSIBLE SPACES	1	1	2
TOTAL SPACES	41	61	67

CHAIR SEATING = 192 SEATS
PEW SEATING = 16 ROWS OF 12 PEWS, 192LF OF PEW. 2' PER SEAT = 96 SEATS
TOTAL SEATS = 288. AT 1 PARKING SPACE PER 5 SEATS, 58 REQUIRED STANDARD SPACES



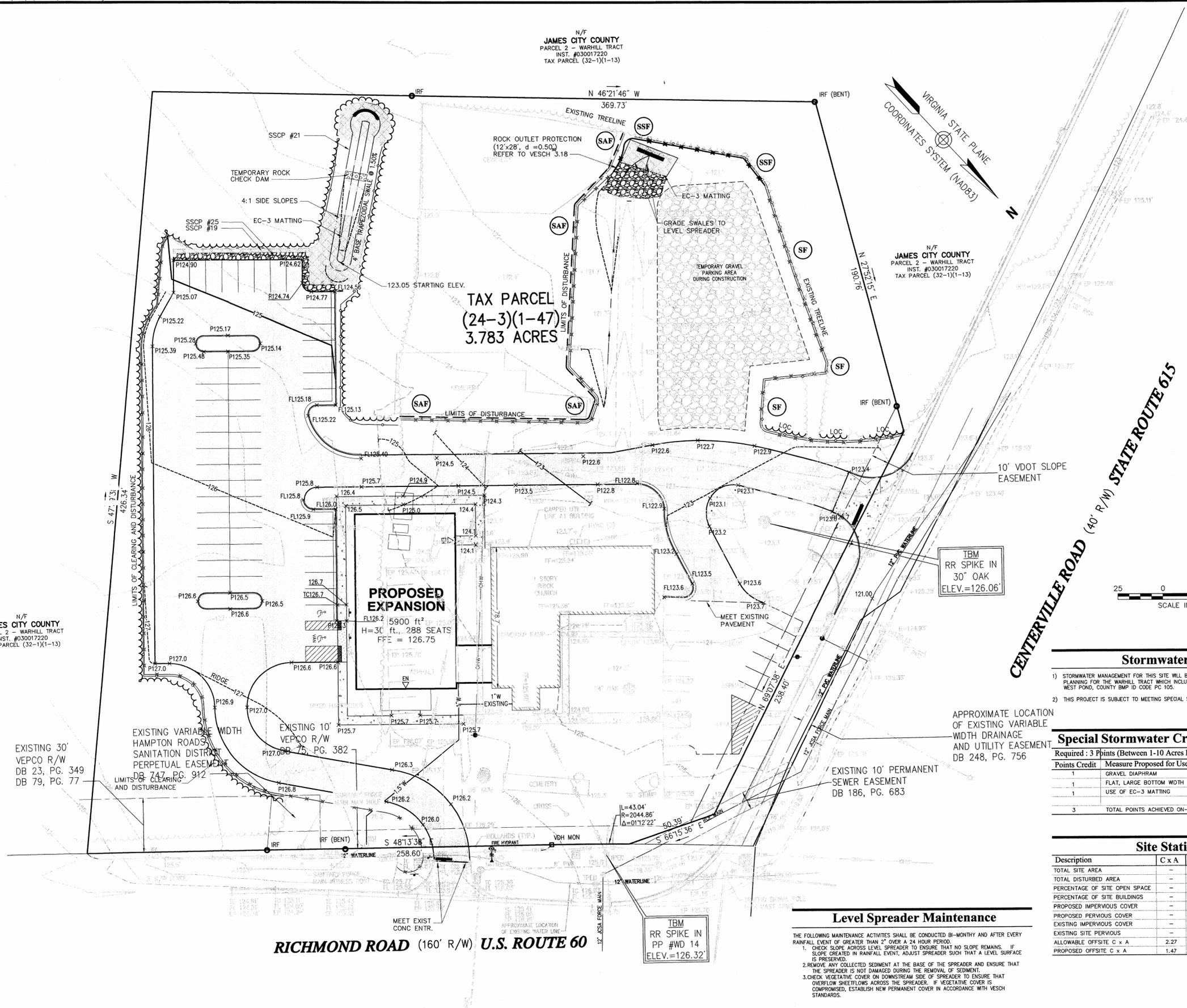
N/F
JAMES CITY COUNTY
 PARCEL 2 - WARHILL TRACT
 INST. #030017220
 TAX PARCEL (32-1)(1-13)



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TAX PARCEL
(24-3)(1-47)
3.783 ACRES

PROPOSED EXPANSION
 5900 ft²
 H=30 ft., 288 SEATS
 FFE = 126.75

N/F
JAMES CITY COUNTY
 PARCEL 2 - WARHILL TRACT
 INST. #030017220
 TAX PARCEL (32-1)(1-13)

N/F
JAMES CITY COUNTY
 PARCEL 2 - WARHILL TRACT
 INST. #030017220
 TAX PARCEL (32-1)(1-13)



Stormwater Notes

- 1) STORMWATER MANAGEMENT FOR THIS SITE WILL BE SATISFIED BY MASTER STORMWATER PLANNING FOR THE WARHILL TRACT WHICH INCLUDES UPGRADES TO THE DISTRICT PARK WEST POND, COUNTY BMP ID CODE PC 105.
- 2) THIS PROJECT IS SUBJECT TO MEETING SPECIAL STORMWATER CRITERIA (SSCP).

Special Stormwater Criteria Compliance

Points Credit	Measure Proposed for Use	Type
1	GRAVEL DIAPHRAM	SSCP #19
1	FLAT, LARGE BOTTOM WIDTH SWALES	SSCP #21
1	USE OF EC-3 MATTING	SSCP #25
3	TOTAL POINTS ACHIEVED ON-SITE	

Level Spreader Maintenance

THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE CONDUCTED BI-MONTHLY AND AFTER EVERY RAINFALL EVENT OF GREATER THAN 2" OVER A 24 HOUR PERIOD.
 1. CHECK SLOPE ACROSS LEVEL SPREADER TO ENSURE THAT NO SLOPE REMAINS. IF SLOPE CREATED IN RAINFALL EVENT, ADJUST SPREADER SUCH THAT A LEVEL SURFACE IS PRESERVED.
 2. REMOVE ANY COLLECTED SEDIMENT AT THE BASE OF THE SPREADER AND ENSURE THAT THE SPREADER IS NOT DAMAGED DURING THE REMOVAL OF SEDIMENT.
 3. CHECK VEGETATIVE COVER ON DOWNSTREAM SIDE OF SPREADER TO ENSURE THAT OVERFLOW SHEETPILOWS ACROSS THE SPREADER. IF VEGETATIVE COVER IS COMPROMISED, ESTABLISH NEW PERMANENT COVER IN ACCORDANCE WITH VESCH STANDARDS.

PROPOSED IMPROVEMENTS FOR THIS PROJECT WILL REQUIRE COORDINATION WITH COUNTY'S AGENT DUE TO ONGOING IMPROVEMENTS TO RICHMOND AND CENTERVILLE ROAD.

REV	PER PLATTED PROPERTY LINE	DATE	BY

DESIGNED BY	SES	DRAWN BY	ARA	CHECKED BY	SES
CAD CHECKED BY		APPROVED BY	ADS		
SCALE	1"=25'	DATE	NOVEMBER 13, 2006		

Zion Baptist Church

6373 Richmond Road
 Williamsburg, Virginia

Issued for
Site Plan Approval

Not Approved for Construction
 Drawing Title

Grading and Drainage Plan

THIS PROJECT IS SITUATED WITHIN SUBWATERSHED 205 AND CATCHMENT 205-106-1 OF POWHATAN CREEK

Professional Engineer Seal for Stephen Eric Stewart, No. 040298, dated 11/18/06. Project Number 315291.

C-5

Sheet of 5 15
 Project Number 315291.01



Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

11832 Rock Landing Drive, Suite 207
Newport News, Virginia 23606
757-873-3386 • FAX 757-873-0757

Sign Summary

M.U.T.C.D. Number	Specification		Desc.
	Width	Height	
R1-1	30"	30"	STOP
R7-8	12"	18"	RESERVED PARKING
R7-8A	12"	6"	VAN
R3-2	24"	24"	NO LEFT TURN

PROPOSED IMPROVEMENTS FOR THIS PROJECT WILL REQUIRE COORDINATION WITH COUNTY'S AGENT DUE TO ONGOING IMPROVEMENTS TO RICHMOND AND CENTERVILLE ROAD.

Revised Per County Comments	Date	By
RELOCATED ENTRANCE DRIVE	08/15/07	JBH
REV PER PLATTED PROPERTY LINE	06/27/06	MRO

No. Revision Date Apprd.
 Designed by SES Drawn by ARA Checked by SES
 CAD checked by Approved by ADS
 Scale 1"=25' Date November 13, 2006
 Project Title

Zion Baptist Church

6373 Richmond Road
Williamsburg, Virginia

Site Plan Approval

Not Approved for Construction
Drawing Title

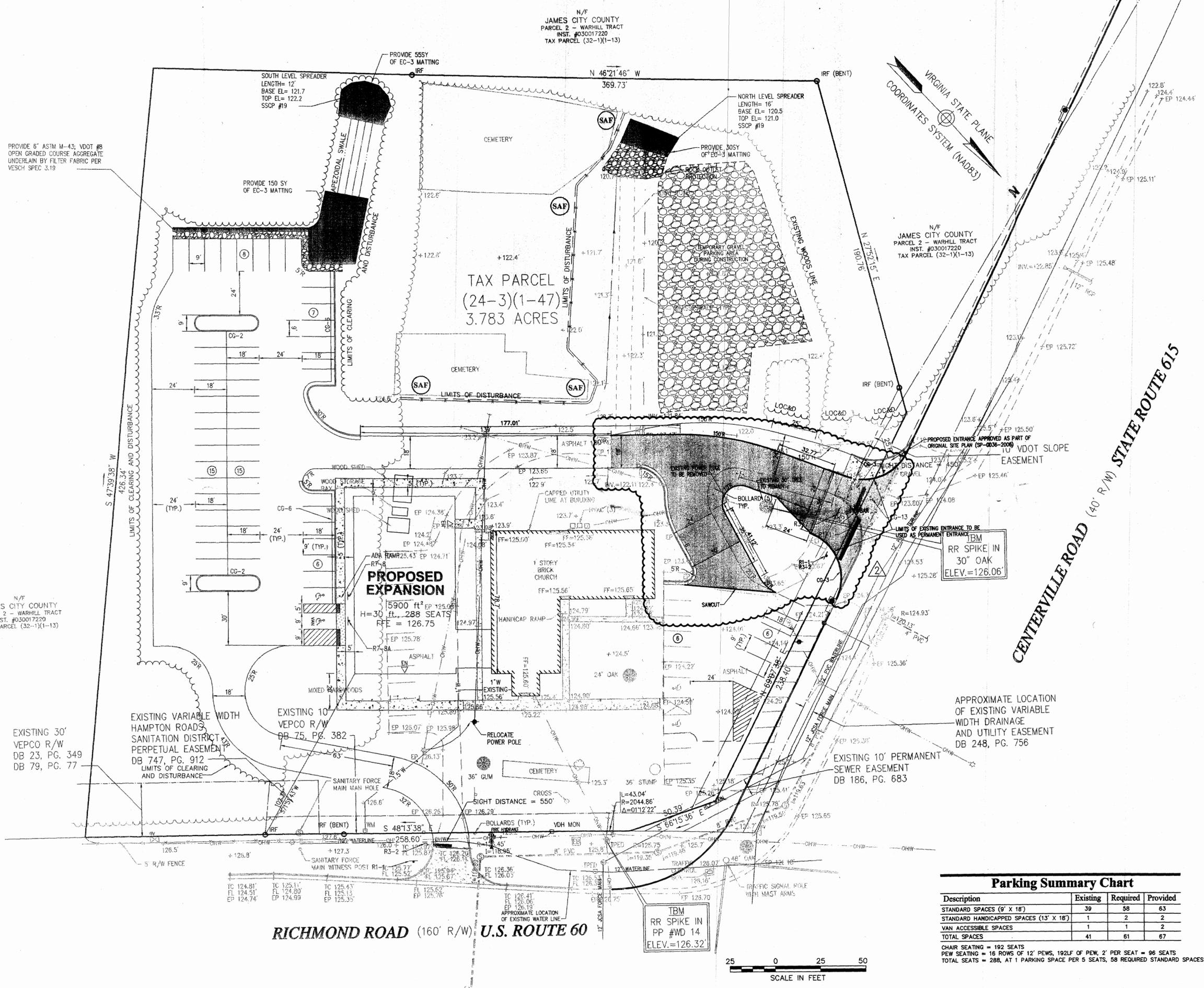
Layout and Materials Plan

THIS PROJECT IS SITUATED WITHIN SUBWATERSHED 205 AND CATCHMENT 205-106-1 OF POWHATAN CREEK

Professional Engineer Seal: M.W.D. SLEDD, JR., Lic. No. 6758, 8/15/07

C-4

Sheet of 4 15
Project Number 31529.01





Vanasse Hangen Brustlin, Inc.

Transportation
Land Development
Environmental Services

11832 Rock Landing Drive, Suite 207
Newport News, Virginia 23606
757-873-3386 • FAX 757-873-0757

N/F
JAMES CITY COUNTY
PARCEL 2 - WARHILL TRACT
INST. #030017220
TAX PARCEL (32-1)(1-13)

VIRGINIA STATE PLANE
COORDINATES SYSTEM (NAD83)

N/F
JAMES CITY COUNTY
PARCEL 2 - WARHILL TRACT
INST. #030017220
TAX PARCEL (32-1)(1-13)

TAX PARCEL
(24-3)(1-47)
3.783 ACRES

PROPOSED EXPANSION
5900 ft² EP 125.00
FL. 288 SEATS
H=30
FFE = 126.75

CENTERVILLE ROAD (40' R/W) STATE ROUTE 615



PROPOSED IMPROVEMENTS FOR THIS PROJECT WILL REQUIRE COORDINATION WITH COUNTY'S AGENT DUE TO ONGOING IMPROVEMENTS TO RICHMOND AND CENTERVILLE ROAD.

No.	Revision	Date	Appr.
1	RELOCATED ENTRANCE DRIVE	08/15/07	JBH
2	REV PER PLATTED PROPERTY LINE	06/27/06	MRC

Stormwater Notes

- 1) STORMWATER MANAGEMENT FOR THIS SITE WILL BE SATISFIED BY MASTER STORMWATER PLANNING FOR THE WARHILL TRACT WHICH INCLUDES UPGRADES TO THE DISTRICT PARK WEST POND, COUNTY BMP ID CODE PC 105.
- 2) THIS PROJECT IS SUBJECT TO MEETING SPECIAL STORMWATER CRITERIA (SSCP).

Special Stormwater Criteria Compliance

Points Credit	Measure Proposed for Use	Type
1	GRAVEL DIAPHRAM	SSCP #19
1	FLAT, LARGE BOTTOM WIDTH SWALES	SSCP #21
1	USE OF EC-3 MATTING	SSCP #25
3	TOTAL POINTS ACHIEVED ON-SITE	

Site Statistics

Description	C x A	Area (Ac.)
TOTAL SITE AREA	-	3.78 Ac.
TOTAL DISTURBED AREA	-	1.87 Ac.
PERCENTAGE OF SITE OPEN SPACE	-	2.57 Ac. (68%)
PERCENTAGE OF SITE BUILDINGS	-	0.25 Ac. (6.6%)
PROPOSED IMPERVIOUS COVER	-	1.21 Ac.
PROPOSED PERVIOUS COVER	-	2.57 Ac.
EXISTING IMPERVIOUS COVER	-	0.71 Ac.
EXISTING SITE PERVIOUS	-	3.07 Ac.
ALLOWABLE OFFSITE C x A	2.27	-
PROPOSED OFFSITE C x A	1.47	-

Level Spreader Maintenance

THE FOLLOWING MAINTENANCE ACTIVITIES SHALL BE CONDUCTED BI-MONTHLY AND AFTER EVERY RAINFALL EVENT OF GREATER THAN 2" OVER A 24 HOUR PERIOD.
1. CHECK SLOPE ACROSS LEVEL SPREADER TO ENSURE THAT NO SLOPE REMAINS. IF SLOPE CREATED IN RAINFALL EVENT, ADJUST SPREADER SUCH THAT A LEVEL SURFACE IS PRESERVED.
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Zion Baptist Church

6373 Richmond Road
Williamsburg, Virginia

Issued for
Site Plan Approval

Not Approved for Construction
Drawing Title

Grading and Drainage Plan

THIS PROJECT IS SITUATED WITHIN SUBWATERSHED 205 AND CATCHMENT 205-106-1 OF POWHATAN CREEK

COMMONWEALTH OF VIRGINIA
ALVIN D. SLEDO, JR.
Lic. No. 6758
8/15/07
PROFESSIONAL ENGINEER

C-5
Sheet of 5 15
Project Number 31529.01

N/F
JAMES CITY COUNTY
PARCEL 2 - WARHILL TRACT
INST. #030017220
TAX PARCEL (32-1)(1-13)

EXISTING 30' VEPCO R/W DB 23, PG. 349 DB 79, PG. 77

EXISTING VARIABLE WIDTH HAMPTON ROADS SANITATION DISTRICT PERPETUAL EASEMENT DB 747, PG. 912

RICHMOND ROAD (160' R/W) U.S. ROUTE 60

TBM RR SPIKE IN PP #WD 14 ELEV.=126.32'

APPROXIMATE LOCATION OF EXISTING VARIABLE WIDTH DRAINAGE AND UTILITY EASEMENT DB 248, PG. 756

EXISTING 10' PERMANENT SEWER EASEMENT DB 186, PG. 683

OWNER: ZION BAPTIST CHURCH
P.O. BOX 88
LIGHTFOOT, VIRGINIA 23090

CONTACT: JOHN MORMON, DEACON
(757) 565-2598 (O)
(757) 758-5657 (H)

ENGINEER: ESPEY, HUSTON & ASSOCIATES, INC.
11838 ROCK LANDING DRIVE
NEWPORT NEWS, VIRGINIA 23606
(757) 596-8267

CONTACT: STEVEN E. POPHAL, C.L.A.
MANAGER, LAND DEVELOPMENT SERVICES

ZION BAPTIST CHURCH
LAND USE SUMMARY TABLE

A.	ZONING OF SITE:	R--8, RURAL RESIDENTIAL DISTRICT
B.	PARKING REQUIREMENTS	
	NUMBER OF SPACES REQUIRED:	80 (1 PER 5 SEATS)
	NUMBER OF HANDICAPPED SPACES REQUIRED:	4
	NUMBER OF SPACES PROVIDED (TOTAL):	81
	NUMBER OF HANDICAPPED SPACES PROVIDED:	4
C.	OPEN SPACE DATA	
	TOTAL SITE AREA:	2.86 ACRES +/- = 100%
	DEVELOPED AREA:	1.22 ACRES +/- = 43%
	OPEN SPACE AREA:	1.64 ACRES +/- = 57%
	IMPERVIOUS AREA:	1.07 ACRES +/- = .37%
	AMOUNT OF SITE COVERED BY BUILDINGS:	5,200.00 SQUARE FEET
	PERCENT OF SITE COVERED BY BUILDINGS:	4%

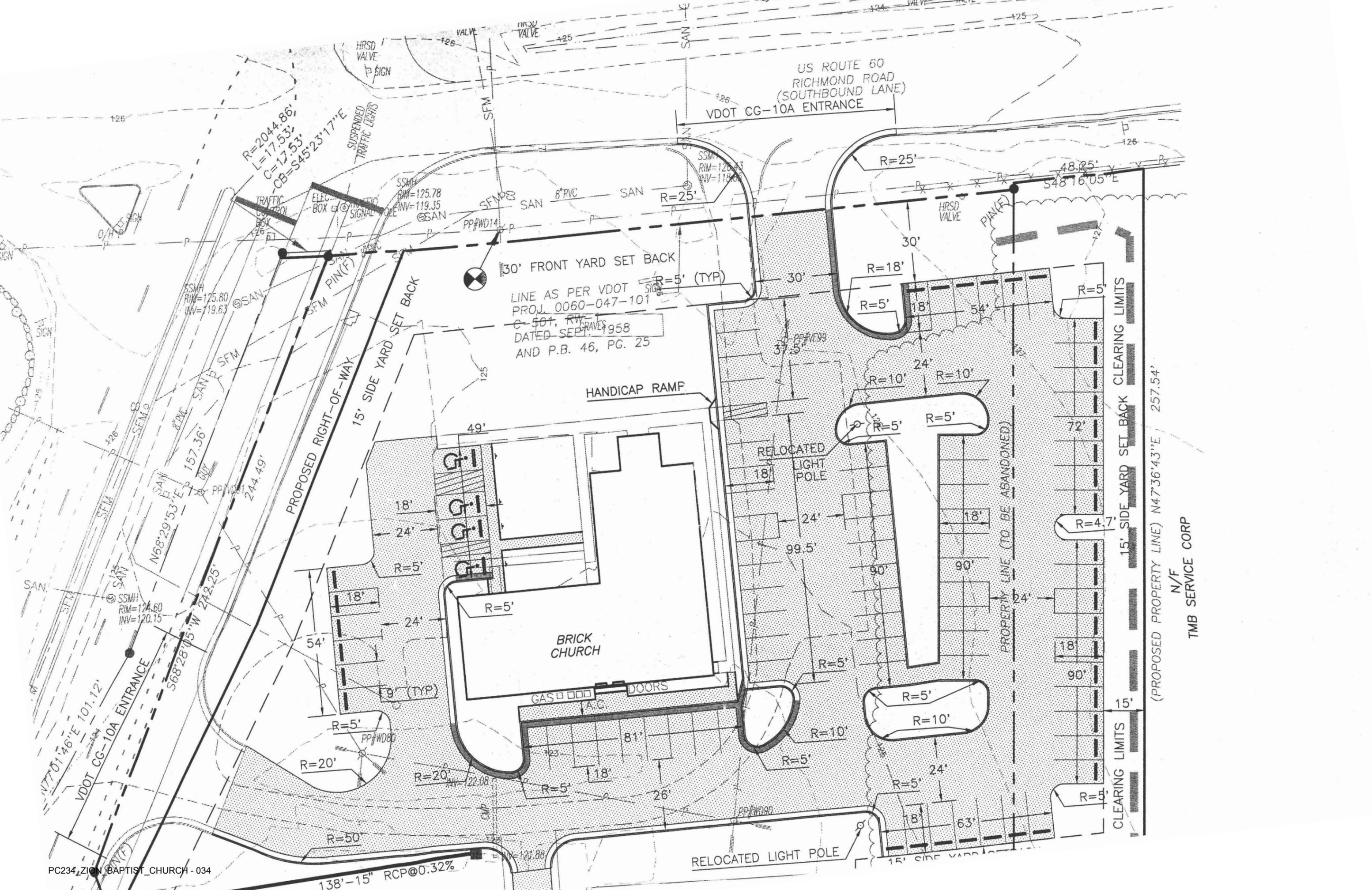
ZION BAPTIST CHURCH
JAMES CITY COUNTY, VIRGINIA

LAYOUT PLAN

DRAWN BY: M.D.C.	CHECKED BY: H.F.R.
DATE: 12/12/97	SCALE: 1" = 30'

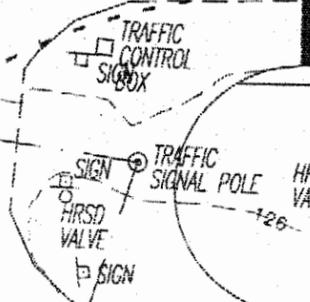
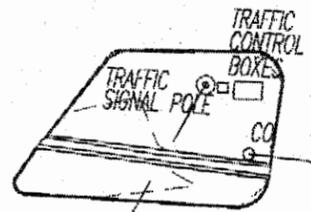
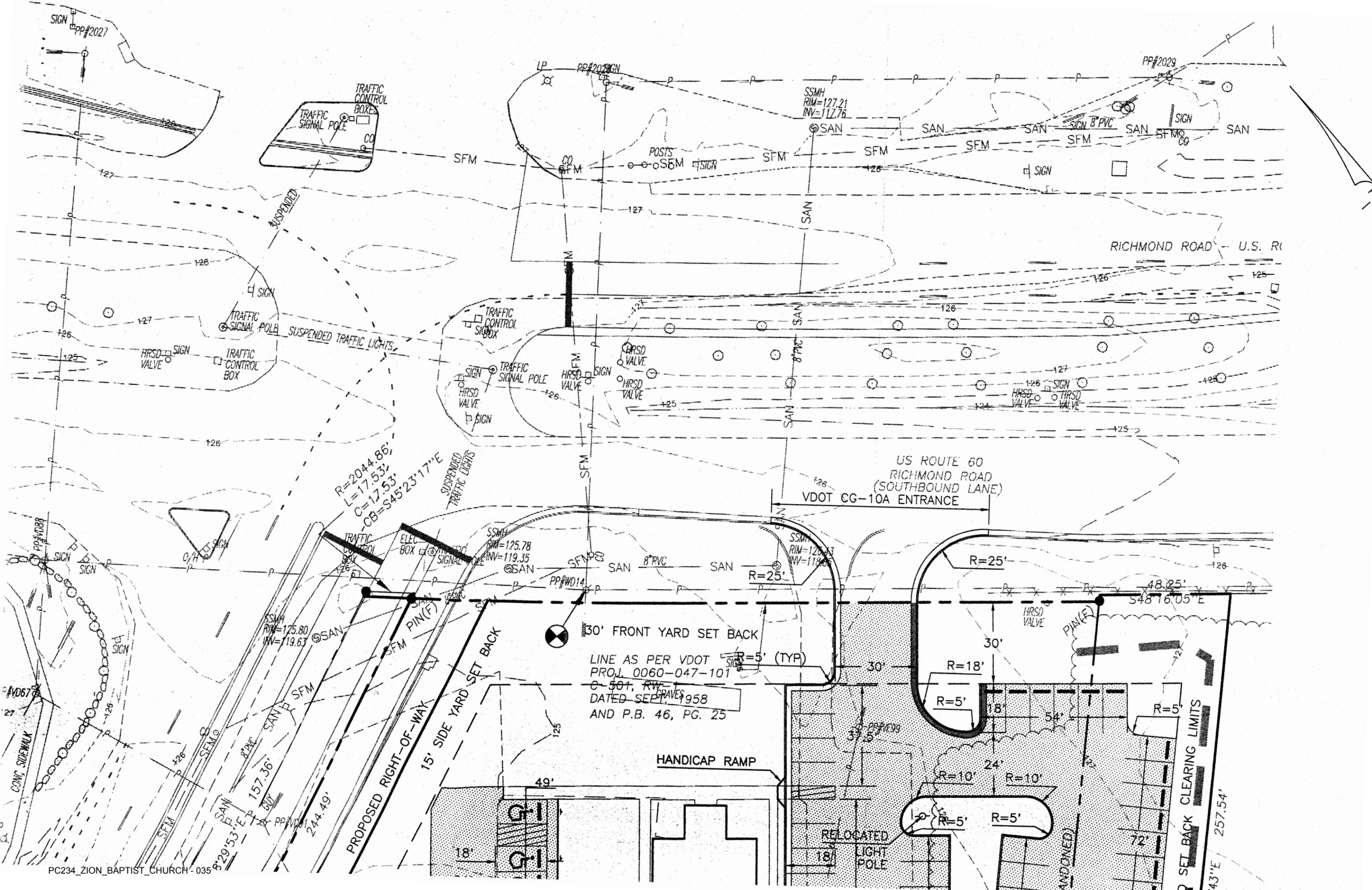
SHEET NO.:
2 OF 5

EHA JOB NUMBER 18657



N/F
TMB SERVICE CORP

(PROPOSED PROPERTY LINE) N47°36'43"E 257.54'



US ROUTE 60
 RICHMOND ROAD
 (SOUTHBOUND LANE)
 VDOT CG-10A ENTRANCE

$R=2044.86'$
 $L=17.53'$
 $C=17.53'$
 $CB=S45^{\circ}23'17''E$

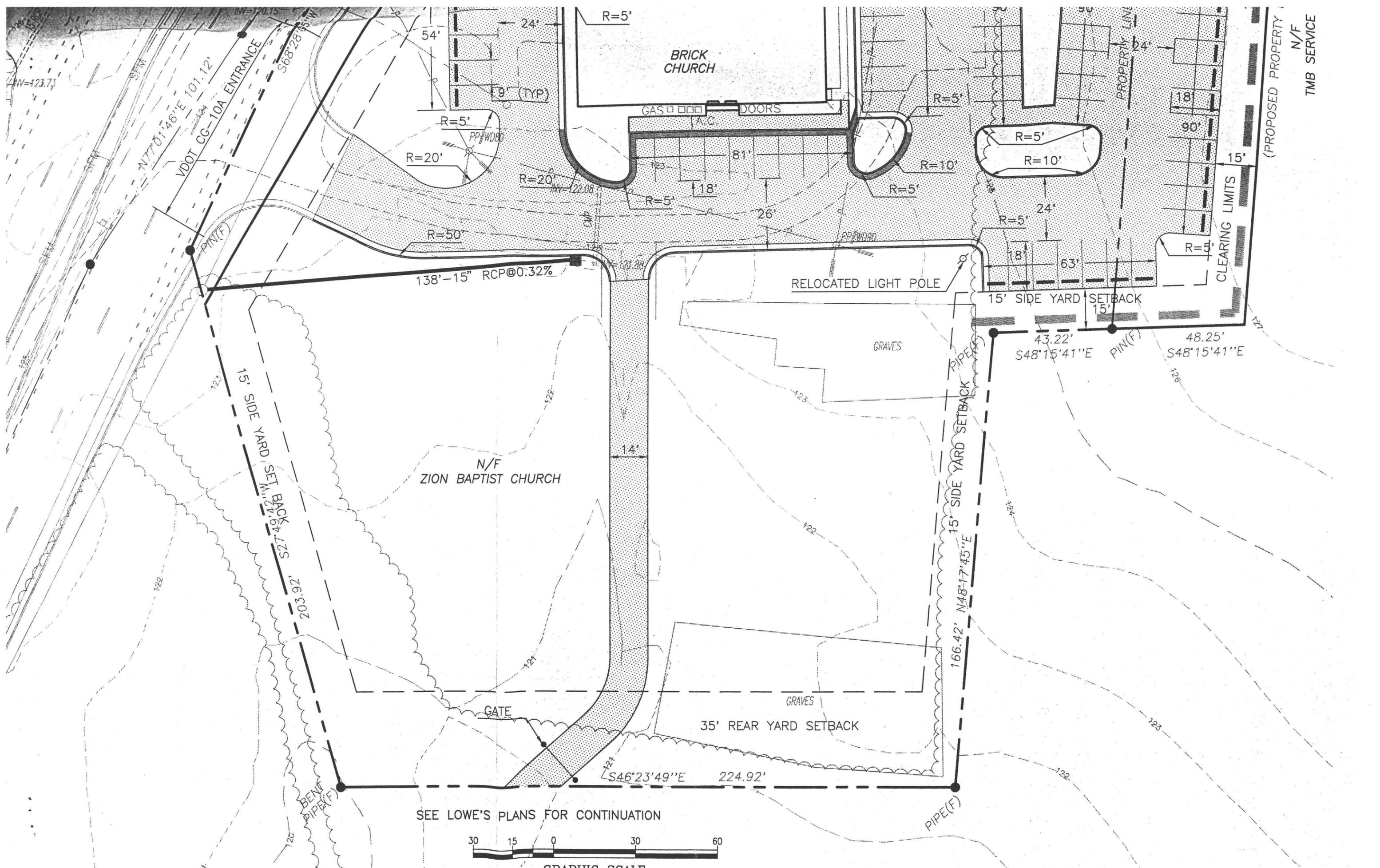
30' FRONT YARD SET BACK
 LINE AS PER VDOT
 PROJ. 0060-047-101
 C-501, REV. 1958
 DATED SEPT. 1958
 AND P.B. 46, PG. 25

PROPOSED RIGHT-OF-WAY
 15' SIDE YARD SET BACK

HANDICAP RAMP

RELOCATED
 LIGHT POLE

SET BACK CLEARING LIMITS



SEE LOWE'S PLANS FOR CONTINUATION

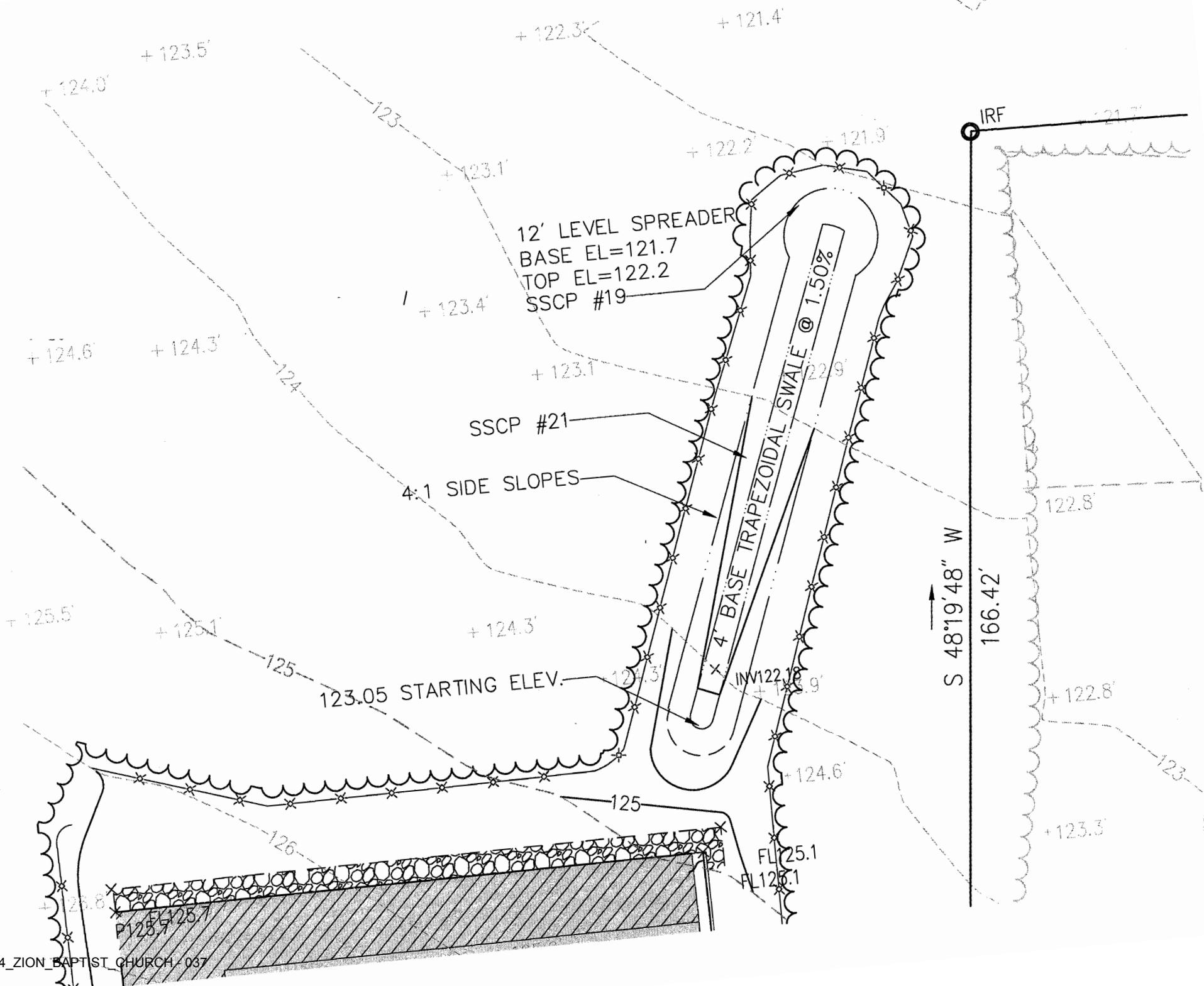


GRAPHIC SCALE

(PROPOSED PROPERTY)
N/F
TMB SERVICE

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PC 34_ZION_BAPTIST_CHURCH_037



This report details the stormwater management system calculations for the Zion Baptist Church improvements to be made as part of the Lowes construction.

Currently, the Zion Church site drains very slowly to the south into a ditch that ultimately discharges to the VDOT detention pond across the road from the Outlets Mall detention pond. ~~The site will continue to discharge to this pond, but the ditch will be replaced by a roadway drainage pipe network.~~

Calculations for the on-site 15" pipe are included with this report. The tailwater elevation for this calculation is obtained from the 10-year storm analysis for the roadway drainage system.

Stormwater quantity control calculations are not included with this report. The water draining from this site continues to go to the VDOT drainage basin, and that basin will be enlarged to handle the expected increase in flows from both the roadway and the church. While the VDOT pond will not (and is not required to) meet all James City County pond criteria, the drainage situation will be improved by the expansion of the pond simply because the water will be detained for a longer period of time. Drainage on the church site will be improved by the addition of curb and gutter and a single curb inlet. Little area will be added to the existing drainage area. - *but impervious cover will be increased*

The curb inlet on the site is designed to intercept all water flowing to it in the 10-year storm. Since it serves a parking lot largely used only on Sundays, the spread on the inlet has been limited to 20.77 feet, which does not submerge the entire driveway and causes a reasonably small ponded area in the back of the property. Even in the 10-year storm, access to the site will not be limited by inlet flooding, since there are two entrances to the site.



ESPEY, HUSTON & ASSOCIATES, INC.
 11838 Rock Landing Drive, Suite 250
 Newport News, VA, USA 23606-4232
 (757) 596-8267 FAX (757) 596-8660

Job Name: Lowes / Zion Baptist Church
 Job No.: 18657
 Date: 12-5-97
 By: PMD

DRAINAGE AREA AND INLET INFORMATION WORKSHEET

Contributing Land Uses: _____ Soil Type & Group: 29B Loam ^{Slagle Sandy} Drainage Area for Site D1 :

Land Use	Area (sf)	Area (ac)	C	CN	C*A	CN*A
Impervious	44101	1.0124	0.90		0.9112	
Grassed (Good)	33364	0.7659	0.35		0.2681	
Sum of Values	77465	1.7783			1.1793	
Weighted Average			0.663			

Time of Concentration: _____ Kinematic Wave Parameters ^{Porosity = 0.412 Suction Head = 4.35}
^{Sat. Hyd Cond = 0.43 Initial Sat = 0.69}
^(Green-Ampt Parameters)

Variable	Overland Flow Kin. Wave	Shallow Conc. Flow Chan. Vel. Method	Channel Flow Chan. Vel. Method	Gutter Flow Chan. Vel. Method	TOTAL Tc (mins)
Length (ft) / Height (ft)	134 / 1.20	151 / 3.02	/	/	NOTE: If Total Tc is less than 5 minutes, then a Tc of 5 minutes is used
Slope (ft/ft)	0.0090	0.0200	/	/	
C factor / n value	- / 0.30	- / 0.015	/	/	
Side Slopes, Z1 / Z2	- / -	- / -	/	/	
Flow Depth (ft)	-	-	/	/	
Area (sf) / WP (ft)	- / -	- / -	/	/	
Velocity (fps) / Q (cfs)	-	2.87 / -	/	/	
Tc (min)	25.40	0.88	/	/	26.28

Design Rainfall Intensities: NORFOLK IDF Curves **Flow Rates:** = 1.0083 * C * I * A (U.S. Units)

Inlet Design Intensity $(i_{INLET}) = \underline{3.50}$ $Q_{INLET} = \underline{4.16}$ cfs
 Design Storm #1 (2-yr) i_2 (in/hr) = 3.05 $Q_2 = \underline{3.63}$ cfs
 Design Storm #2 (10-yr) i_{10} (in/hr) = 4.00 $Q_{10} = \underline{4.76}$ cfs
 Design Storm #3 (100-yr) i_{100} (in/hr) = 5.90 $Q_{100} = \underline{7.02}$ cfs

Inlet Information: (Design using intensity i_{INLET})

Total flow to inlet: This subarea = 4.76 cfs Overflow = 0 cfs TOTAL = 4.76 cfs

Curb Inlets:

Gutter Longitudinal Slope (ft/ft) = 0.0055 (min)
 Pavement X-Slope (ft/ft) = 0.0173
 Gutter X-Slope (ft/ft) = 0.0833
 Gutter Width (ft) = 2

Grate Inlets:

Ditch Side Slopes (H/V): L = _____ R = _____
 Inlet Type = _____
 Eff. Perimeter (ft) = _____ Eff. Area (sf) = _____

Inlet Length (ft) = 6
 Flow Intercepted (cfs) = 4.76
 Flow Bypassing Inlet (cfs) = 0.00
 Spread Including Gutter Width (ft) = 20.77
 Flow Depth at Curb (ft) = 0.36'

Ponded Depth (ft) = _____

Rim Elevation = 122.43

Inlet Max Depth (ft) = 3.99

State DOT Inlet Type = D1-3C

MIN REQ'D DEPTH = 3.91' **OK**

Storm Sewer Tabulation

Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfal Inten (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac. @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	HGL up (ft)	HGL down (ft)	Invert up (ft)	Invert down (ft)	Dns line #
1	3-F to 3-G	0.00	0.00	0.00	3.61	32.2	3.43	12.4	0.0	13.1	42.1	30 c	76	1.05	2.7	2.7	98.08	98.00	94.30	93.50	0
2	3-E to 3-F	0.02	0.90	0.02	3.60	31.7	3.46	12.4	0.0	13.2	41.0	30 c	80	1.00	5.6	5.2	98.91	98.19	97.70	96.90	1
3	3-C to 3-F	0.02	0.90	0.02	0.02	5.0	7.09	0.1	0.0	0.1	12.5	15 c	32	3.75	3.1	3.1	101.09	99.89	101.00	99.80	1
4	3-B to 3-E	0.08	0.90	0.07	0.07	5.0	7.09	0.5	0.0	0.5	13.2	15 c	36	4.17	4.8	4.8	102.68	101.18	102.50	101.00	2
5	3-D to 3-E	0.00	0.00	0.00	3.51	30.8	3.52	12.3	0.0	13.1	40.0	30 c	168	0.95	7.1	7.1	100.91	99.31	99.90	98.30	2
6	4-J to 3-D	0.10	0.90	0.09	3.34	30.0	3.57	11.9	0.0	12.6	39.4	30 c	152	0.92	5.5	3.6	102.59	101.68	101.40	100.00	5
7	4-H to 4-J	0.05	0.90	0.04	2.03	29.5	3.61	7.3	0.0	7.3	40.0	27 c	90	1.67	7.4	7.4	110.17	108.67	109.50	108.00	6
8	4-F to 4-H	0.04	0.90	0.04	0.04	5.0	7.09	0.3	0.0	0.3	14.2	18 c	33	1.82	3.0	3.0	112.54	111.94	112.40	111.80	7
9	4-E to 4-H	0.05	0.90	0.04	1.95	29.0	3.64	7.1	0.0	7.1	40.2	27 c	80	1.69	7.6	7.6	112.63	111.28	111.99	110.64	7
10	4-A to 4-E	0.28	0.90	0.25	1.68	27.5	3.75	6.3	0.0	6.3	22.9	24 c	278	1.03	6.1	6.1	116.83	113.98	116.10	113.25	9
11	5-B to 4-A	0.00	0.00	0.00	1.43	26.2	3.85	5.5	0.0	5.5	19.2	24 c	236	0.72	4.5	2.8	118.73	117.40	117.90	116.20	10
12	5-A to 5-B	0.28	0.90	0.25	0.25	5.0	7.09	1.8	0.0	1.8	6.4	15 c	236	0.97	4.4	4.4	121.56	119.26	121.10	118.80	11
13	4-K to 4-J	0.00	0.00	0.00	1.22	8.2	6.26	7.6	0.0	8.4	29.0	30 c	40	0.50	3.1	2.6	103.05	103.06	101.70	101.50	6
14	7-J to 4-K	0.11	0.90	0.10	0.10	5.0	7.09	0.7	0.7	1.4	14.4	15 c	60	5.00	7.2	7.2	108.37	105.37	108.10	105.10	13
15	7-I to 4-K	0.00	0.00	0.00	1.12	6.8	6.58	7.4	0.0	7.4	15.3	24 c	240	0.46	4.9	3.8	104.06	103.20	103.10	102.00	13
16	7-H to 7-I	0.00	0.00	0.00	1.12	6.1	6.77	7.6	0.0	7.6	10.0	18 c	128	0.90	5.7	4.9	105.40	104.44	104.35	103.20	15
17	7-G to 7-H	0.20	0.90	0.18	0.32	5.6	6.92	2.2	0.0	2.2	21.4	18 c	60	4.17	7.8	7.8	108.23	105.73	107.90	105.40	16
18	7-F to 7-G	0.10	0.90	0.09	0.14	5.4	6.97	1.0	0.0	1.0	19.8	18 c	28	3.57	2.8	0.7	109.38	109.18	109.00	108.00	17
19	7-E to 7-H	0.55	0.90	0.50	0.80	5.4	6.96	5.5	0.0	5.5	11.9	18 c	120	1.29	5.0	3.2	106.90	105.91	106.00	104.45	16
20	7-D to 7-E	0.14	0.90	0.12	0.30	5.4	6.98	2.1	0.0	2.1	13.6	18 c	12	1.67	1.7	1.4	107.28	107.29	106.30	106.10	19
21	7-C to 7-D	0.11	0.90	0.10	0.18	5.2	7.05	1.3	0.0	1.3	21.8	18 c	40	4.30	3.0	1.1	108.55	107.32	108.12	106.40	20
22	7-B to 7-C	0.09	0.90	0.08	0.08	5.0	7.09	0.6	0.0	0.6	16.4	18 c	28	2.43	2.4	1.2	109.19	108.69	108.90	108.22	21

PROJECT FILE: ROADWAY.STM I-D-F FILE: ORFRICH.IDF TOTAL NUMBER OF LINES: 26 RUN DATE: 12-07-1997

NOTES: c = circular; e = elliptical; b = box; Intensity = $80.90316 / (Tc + 14.20002)^{.8236774}$; Return period = 10 Yrs.

Storm Sewer Tabulation

Line #	Line ID	Incr. Area (ac)	Rnoff coeff (C)	Incr. CA	Sum CA	Tc (min)	Rnfal Inten (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac. @ full (cfs)	Line size (in x in)	Line length (ft)	Line slope (%)	Veloc. up (ft/s)	Veloc. down (ft/s)	HGL up (ft)	HGL down (ft)	Invert up (ft)	Invert down (ft)	Dns line #
23	7-A to 7-F	0.06	0.90	0.05	0.05	5.0	7.09	0.4	0.0	0.4	11.3	18 c	78	1.15	2.1	1.0	110.24	109.51	110.00	109.10	18
24	4-G to 4-E	0.24	0.90	0.22	0.22	5.0	7.09	1.5	0.0	1.5	16.7	21 c	36	1.11	1.0	0.7	113.53	113.53	112.49	112.09	9
25	3-A to 3-D	0.19	0.90	0.17	0.17	5.0	7.09	1.2	0.0	1.2	13.9	15 c	56	4.64	6.5	6.5	105.16	102.56	104.90	102.30	5
→ 26	Chc to 5-B	1.78	0.66	1.18	1.18	25.4	3.91	4.6	0.0	4.6	3.6	15 c	138	0.32	3.8	4.2	119.79	119.04	118.44	118.00	11

PROJECT FILE: ROADWAY.STM

I-D-F FILE: ORFRICH.IDF

TOTAL NUMBER OF LINES: 26

RUN DATE: 12-07-1997

NOTES: c = circular; e = elliptical; b = box; Intensity = $80.90316 / (Tc + 14.20002)^{.8236774}$; Return period = 10 Yrs.

Zion Baptist Stormwater Calculations Package

Submitted to: James City County

Date: August 3, 2006

Prepared by: Stephen Stewart, P.E., M.B.A.

VHB Project No: 31529.01



I Stormwater Narrative

II SCS Compliance

III Supporting Letters

- i Scott Thomas, June 24, 2005
- ii Scott Thomas, January 17, 2006

IV Drainage Area Maps and Grading Plan

- i Pre Development Drainage Area Map
- ii Post Development Drainage Area Map
- iii Proposed Grading Plan

V Soils Map

VI Drainage Calculations Summary

- i CBPA Worksheet B

VII Trapezoidal Swale Details

- i Plan view
- ii Depth calculations
- iii Level Spreader details (VESCH 3.12)

VIII Sediment Trap Sizing

- i Volume Requirements
- ii HY-22 Dimensioning

IX Erosive Velocity Calculations

*SP-36-06
2ND SUB
(FINAL)*

Stormwater Narrative for Zion Baptist Church Site Improvements

August 3, 2006

Existing conditions and infrastructure at the Zion Baptist Church (located at the intersection of Richmond Road and Centerville Road) present significant development challenges. The existing church building was constructed prior to requirements for stormwater treatment and all drainage from the site either infiltrates, sheetflows, or flows via roughly defined swales South (away from Richmond Road) to undisturbed woods at the rear of the site.

Soils on the site are Type B soils and are generally very good for infiltration. The majority of the on-site soil is classified as Kempsville-Emporia, fine sandy loam (19B) with an infiltration rate of 2-6 in/hour. Soils found at the rear of the site, where the runoff will discharge have the same infiltration rate but are classified as a Slagle, fine sandy loam (29B). Please refer to the enclosed Soils Map for specific limits of soils.

As stated, there is no existing stormwater infrastructure on site and the proposed improvements to Centerville Road will not accommodate Zion's flow. However, the regional BMP, District Park West Pond, to the South of our site was designed to handle and treat improvements to the Zion property. Ultimately stormwater will discharge to the pond but until improvements are made to the neighboring parcel, stormwater will be handled by multiple means to ensure water quality is improved and that erosive conditions are prevented.

The Zion Baptist site is within a James City County designated Special Stormwater Criteria management area and will require 3 design point credits. Site design incorporated multiple measures that will earn 3 points including the following:

- Flat, large bottom swales ✓ *SSCP #21*
- EC-3 Matting ✓ *SSCP #25*
- Gravel Diaphragm ✓ *SSCP #16*

While some of the proposed measures overlap, the required points credits will be met. A ninety linear foot, trapezoidal swale, with a base width of 4', set at a slope of 1.5% will collect and route stormwater to the rear of the property. A level spreader at the end of the swale will distribute sheetflow evenly before discharging to the neighboring property. High grass will be proposed within the swale to retard flow and to increase the Manning 'n' within the channel. The remaining stormwater runoff will collect in existing swales and also travel to the rear of the site before reaching another level spreader that will convert it to a less erosive sheetflow.

Special Stormwater Criteria Compliance

Required: 3 Points (Between 1-10 Acres Disturbed)

Point Credits	Measured Proposed for Use	Type
1	EC-3 Matting	SSCP #25
1	Gravel Diaphragm	SSCP #23
1	Flat, large bottom width swales	SSCP #21
3	Total Points Achieved On-Site	

Post Development Drainage Area Map

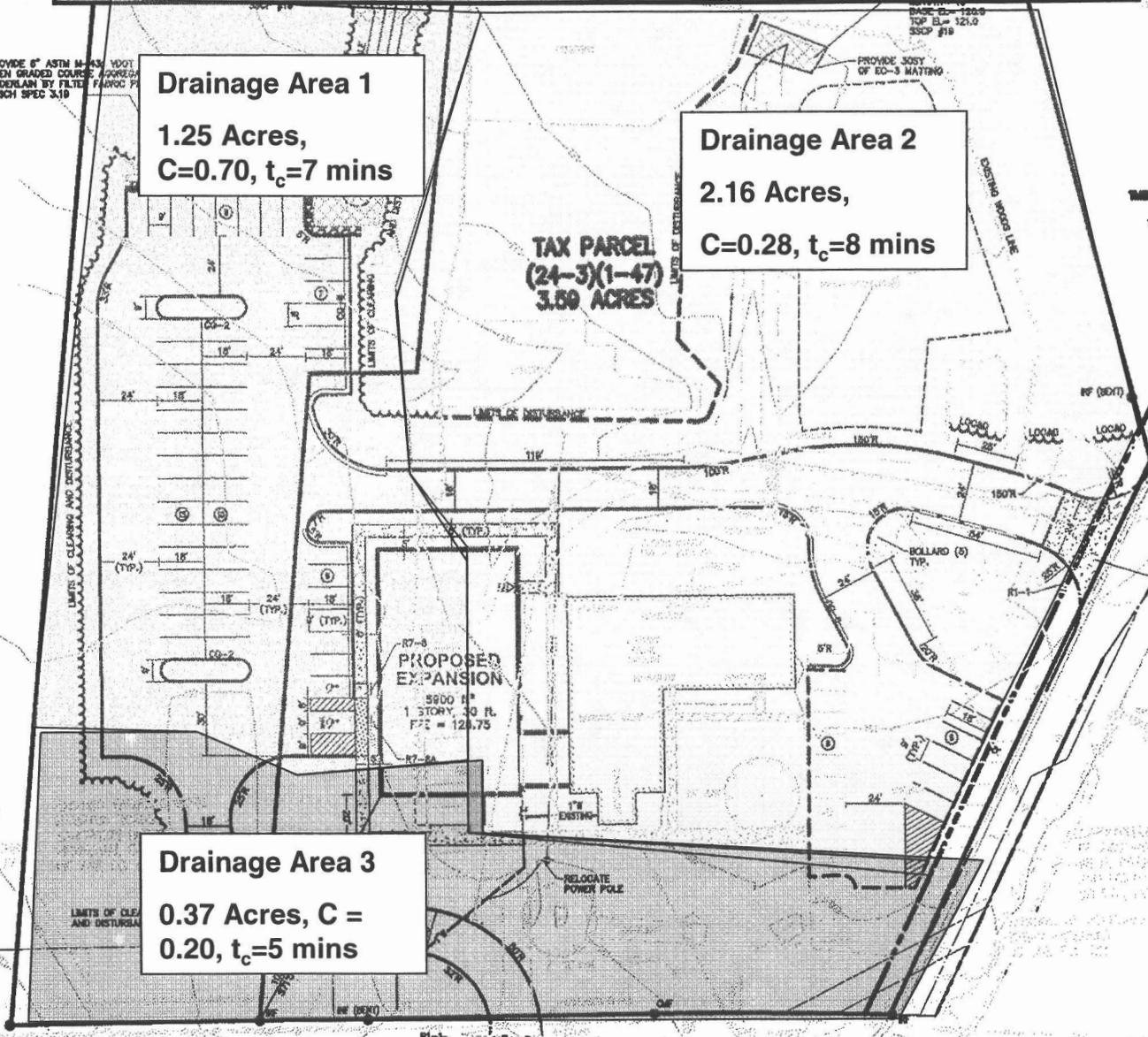
PROVIDE 6" ASTM 14-44 100T
 OPEN GRADED COURSE APPROX. 4"
 UNDERLAIN BY FILTER FABRIC PER
 VENCH SPEC 3.10

Drainage Area 1
 1.25 Acres,
 $C=0.70, t_c=7$ mins

Drainage Area 2
 2.16 Acres,
 $C=0.28, t_c=8$ mins

TAX PARCEL
(24-3)(1-47)
3.89 ACRES

N/P
 TWD SERVICE CORPORATION
 20 004, PG. 100
 10 04, PG. 30-32
 TAX PARCEL (24-1)(1-43)



Drainage Area 3
 0.37 Acres, $C =$
 $0.20, t_c=5$ mins

PROPOSED EXPANSION
 5800 SF
 1 STORY, 33 FL.
 $F2 = 128.75$

RICHMOND ROAD (160' R/W) U.S. ROUTE 60

Parking Summary Chart

Description	Existing	Required	Provided
STANDARD SPACES (8' X 12')	20	06	03
STANDARD HANDICAPPED SPACES (12' X 18')	1	2	2
VAN ACCESSIBLE SPACES	1	1	1
TOTAL SPACES	22	09	06

GUIDANCE CALCULATION PROCEDURE

WORKSHEET B: REDEVELOPMENT - Zion Baptist Church

Expansion of Zion Baptist Church. Project includes the exchange of land along Centerville Road for a neighboring parcel. Project design includes demolition of some existing parking and adding additional parking.

1. Compile site-specific data.

		<u>PROJECT LIMITS</u>						
		PRE-DEVELOPMENT		POST-DEVELOPMENT				
A	area	=	3.78	acres	=	3.78	acres	
I _a	church	=	0.19	acres	church	=	0.25	acres
	Parking/	=	0.00	acres	Parking/	=	0.00	acres
	drives	=	0.49	acres	drives	=	0.89	acres
	sidewalk	=	0.03	acres	sidewalk	=	0.07	acres
	total I _a =	=	0.71	acres		=	1.21	acres
I	= (total I _a /A) x 100	=	19	% expressed		=	32	% expressed
				in whole numbers				in whole numbers

WHERE:

A = area of site (in acres)
 I_a = actual amount of impervious area

2. Calculate the pre-development load (L_{pre}).

$$L_{pre} = \frac{1.89}{\text{lbs/ac/yr}} \quad L = [0.05 + (0.009 \times I_{site})] \times A \times 2.28$$

3. Calculate the post-development load (L_{post}).

$$L_{post} = \frac{2.91}{\text{lbs/ac/yr}} \quad L = [0.05 + (0.009 \times I_{site})] \times A \times 2.28$$

4. Calculate the pollutant removal requirement (RR)

$$RR = L_{post} - (0.9 \times L_{pre})$$

$$= \frac{2.91}{\text{lbs/yr}} - \frac{1.7}{\text{lbs/yr}}$$

$$= \frac{1.21}{\text{lbs/yr}}$$

If RR < or = 0, **STOP** and submit analysis to this point
 If RR > 0, **CONTINUE**

To determine the overall BMP efficiency required (%RR) when selecting BMP options:

$$\%RR = \frac{RR}{L_{post}} \times 100$$

$$= \frac{1.21}{2.91} \times 100$$

$$= \frac{41.69}{\%}$$



Project: _____ Project # _____
Location: _____ Sheet _____ of _____
Calculated by: _____ Date: _____
Checked by: _____ Date: _____
Title _____

TOTAL SITE AREA: 3.783 Ac

IMPERVIOUS AREA:

EXISTING

- BUILDINGS	5,193	0.12 Ac
- PARKING	21,474	0.49 Ac
- SIDEWALKS	1,359	0.031 Ac
- SHEDS	290	0.066 Ac

Σ 0.707 Ac
~ 19% SITE

PROPOSED

- BUILDINGS	11,093	0.25 Ac
- PARKING	38,627	0.89 Ac
- SIDEWALKS	2,884	0.066 Ac

Σ 1.206 Ac
~ 32% SITE



Project:
Location:
Calculated by:
Checked by:
Title

Project #
Sheet of
Date:
Date:

C x A STATISTICS - PROPOSED

PROPOSED

<u>AREA DESCRIPTION</u>	<u>A, ft²</u>	<u>w</u>	<u>c</u>	<u>C x W</u>
BUILDINGS	11,093	} 0.32	0.9	0.29
PARKING	38,627			
SIDEWALKS	2,884			
WOODED	51,246	0.31	0.2	0.06
GRASS	60,807	0.37	0.1	0.04
	Σ 3.78 Ac = 164,657			<u>C = 39</u>

$$t_c = t_{\text{OVERLAND PARKING}} + t_{\text{SWALE}}$$

7 mins
(PLATE 5-1, SEELYE)

$$+ \frac{4.75}{\sqrt{MANNING}}$$

84 / (S ~ 1.5%, 4:1, 4' BW)

84 / 4.57 fps ~ 18 sec ~ 0 min

t_c = 7 min



Project:
Location:
Calculated by:
Checked by:
Title

Project #
Sheet of
Date:
Date:

C x A STATISTICS - EXISTING

EXISTING

<u>AREA DESC.</u>	<u>A, ft²</u>	<u>W</u>	<u>C</u>	<u>C x W</u>
BUILDINGS	5,193	} 0.19	0.9	0.17
PARKING	21,474			
SIDEWALKS	1,374			
SHEDS	290			
WOODED	71,235	0.41	0.2	0.082
GRASS / PASTURE	65,091	0.40	0.1	0.04
	Σ 164,657 ft ²			<u>C = 29</u>

FHWA Urban Drainage Design Program, HY-22
HYDRAULIC PARAMETERS OF OPEN CHANNELS

Trapezoidal, Rectangular, or Triangular X-Section
Date: 01/17/2006

Project No. :32159.00
Project Name.:Zion Baptist
Computed by :SES, PE

INPUT PARAMETERS

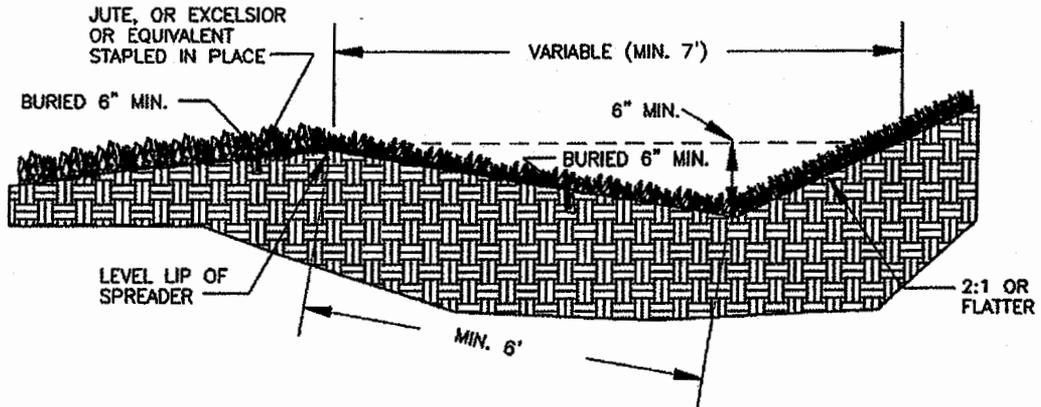
1. Channel Slope (ft/ft)	0.0040
2. Channel Bottom Width (ft)	6.00
3. Left Side Slope (Horizontal to 1)	4.00
4. Right Side Slope (Horizontal to 1)	4.00
5. Manning's Coefficient	0.030
6. Discharge (cfs)	3.90
7. Depth of Flow (ft)	<u>0.36</u>

OUTPUT RESULTS

Cross Section Area (Sqft)	2.68
Average Velocity (ft/sec)	<u>1.46</u>
Top Width (ft)	8.88
Hydraulic Radius (ft)	0.30
Froude Number	0.47

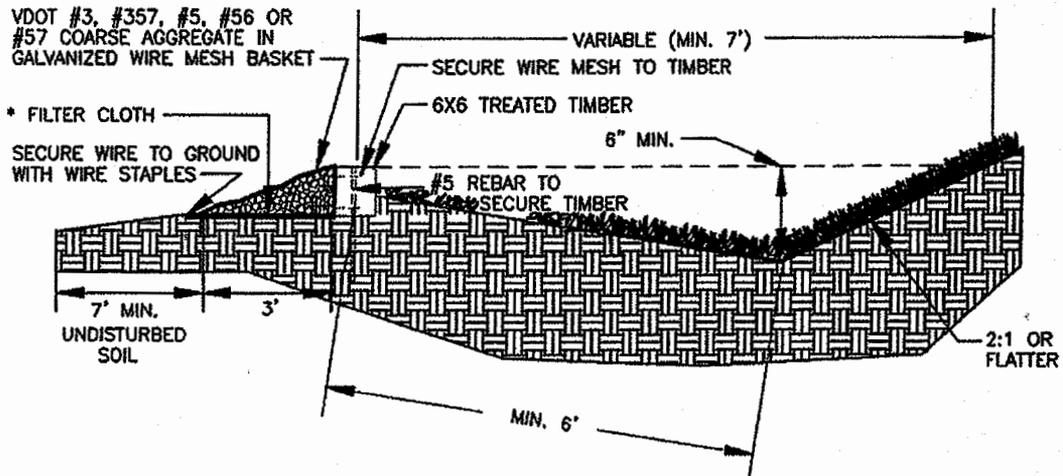
Level Spreader

**LEVEL SPREADER
CROSS SECTION**



LEVEL SPREADER WITH VEGETATED LIP

CROSS SECTION



LEVEL SPREADER WITH RIGID LIP

Refer to Std. & Spec. 3.21 - VA Erosion and Sediment Control Handbook



Project: Zion Baptist

Project # 31529.01

Location:

Sheet of

Calculated by:

Date:

Checked by:

Date:

Title SED. TRAP

SEDIMENT TRAP SIZING + DESIGN

TOTAL CONTRIBUTING AREA: 0.64 AC

REQ'D VOLUME = $0.64 \times 134 \text{ CY} = 86 \text{ CY} \Rightarrow 2316 \text{ CF}$

WET STORAGE = 1158 CF

DRY STORAGE = 1158 CF

BASE ELEVATION = 122.0

BASE DIM = 2' x 90'

Z = 2'

TOP ELEV. = 125.0

TOTAL STORAGE = 87.8 CY

STONE OUTLET LENGTH = 6'

STONE OUTLET ELEVATION = 124.0

Storage Volumes
Date: 03/31/2006

Box Structure

Project No. :
Project Name.:
Computed by :

INPUT PARAMETERS

1. Height of Box (ft)	12.00
2. Height Increment (ft)	0.25
3. Box Length (ft)	90.00
4. Box Width (ft)	2.00
5. Box Slope (ft/ft)	2.0000

OUTPUT RESULTS

Maximum Depth (ft)	3.00
Maximum Storage (ft**3)	2340.00

Stage(ft)	Storage(ft)
-----------	-------------

0.00	0.00
0.25	56.58
0.50	136.67
0.75	240.75
1.00	369.33
1.25	522.92
1.50	702.00
1.75	907.08
2.00	1138.67
2.25	1397.25
2.50	1683.33
2.75	1997.42
3.00	2340.00



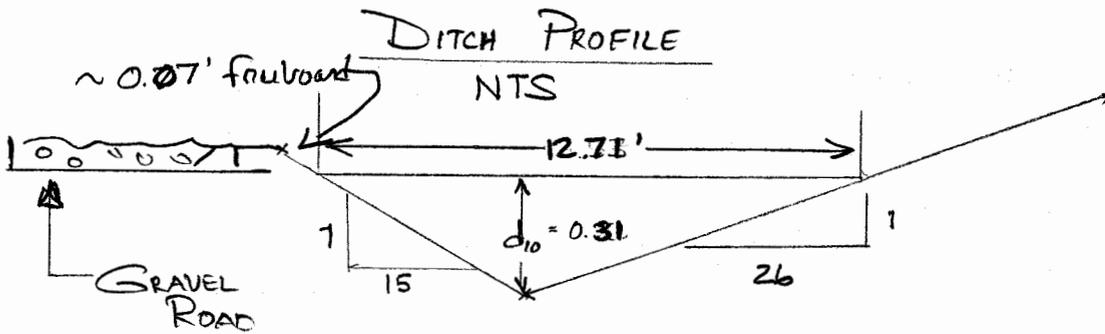
Project: Zion
Location:
Calculated by:
Checked by:
Title

Project # 31529.01
Sheet of
Date:
Date:

GRAVEL ROAD SWALE ADEQUACY CHECK (EAST)

$$Q_{10} \sim 3.92 \text{ CFS}$$

$$S_{CH} \sim 1.3\%$$



$$d_{10} = 0.31'$$

$$\bar{V}_{10} = 1.76 \text{ fps}$$

$$\text{TOP WIDTH} = 12.71'$$

FHWA Urban Drainage Design Program, HY-22
HYDRAULIC PARAMETERS OF OPEN CHANNELS

Trapezoidal, Rectangular, or Triangular X-Section
Date: 08/03/2006

Project No. :
Project Name.:
Computed by :

INPUT PARAMETERS

1. Channel Slope (ft/ft)	0.0131
2. Channel Bottom Width (ft)	0.00
3. Left Side Slope (Horizontal to 1)	15.00
4. Right Side Slope (Horizontal to 1)	26.00
5. Manning's Coefficient	0.025
6. Discharge (cfs)	3.92
7. Depth of Flow (ft)	0.31

OUTPUT RESULTS

Cross Section Area (Sqft)	1.97
Average Velocity (ft/sec)	1.99
Top Width (ft)	12.71
Hydraulic Radius (ft)	0.15
Froude Number	0.89



Project:
Location:
Calculated by:
Checked by:
Title

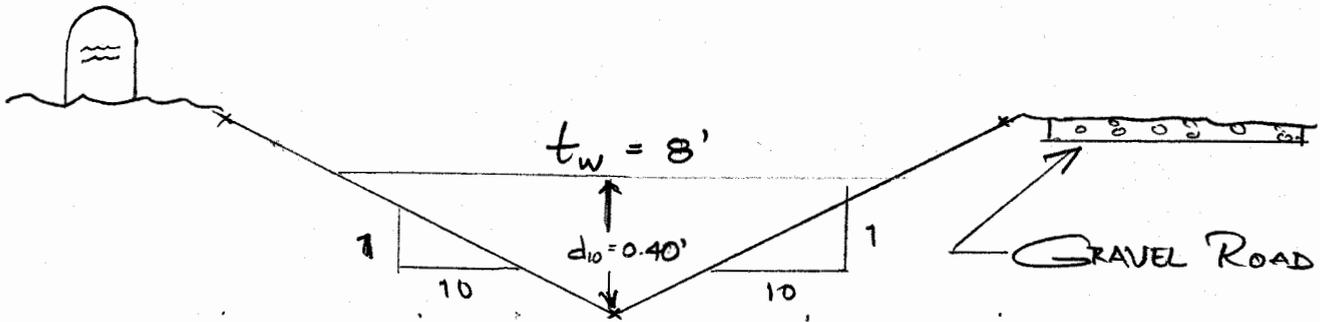
Project #
Sheet of
Date:
Date:

GRAVEL ROAD SWALE ADEQUACY CHECK (WEST)

$Q_{10} \sim 3.92 \text{ CFS}$

$S_{ch} \sim 1.31\%$

DITCH PROFILE
NTS



$d_{10} = 0.40$

$\bar{V}_{10} =$

$t_w = 8'$

FHWA Urban Drainage Design Program, HY-22
HYDRAULIC PARAMETERS OF OPEN CHANNELS

Trapezoidal, Rectangular, or Triangular X-Section
Date: 08/03/2006

Project No. :
Project Name.:
Computed by :

INPUT PARAMETERS

1. Channel Slope (ft/ft)	0.0130
2. Channel Bottom Width (ft)	0.00
3. Left Side Slope (Horizontal to 1)	10.00
4. Right Side Slope (Horizontal to 1)	10.00
5. Manning's Coefficient	0.025
6. Discharge (cfs)	3.92
7. Depth of Flow (ft)	0.40

OUTPUT RESULTS

Cross Section Area (Sqft)	1.60
Average Velocity (ft/sec)	2.45
Top Width (ft)	8.00
Hydraulic Radius (ft)	0.20
Froude Number	0.97



Computations

Project: Zion

Project # 31529.01

Location:

Sheet of

Calculated by:

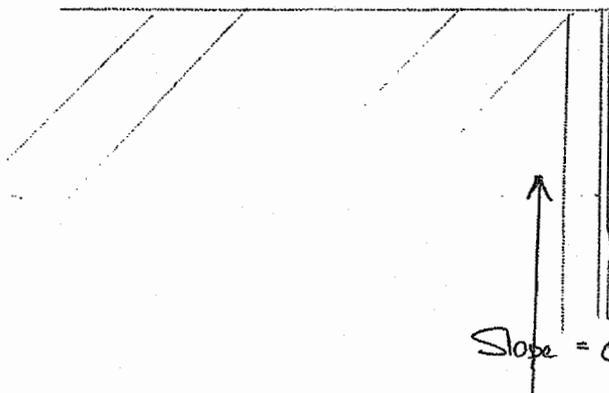
Date:

Checked by:

Date:

Title EROSION VELOCITY CHECK

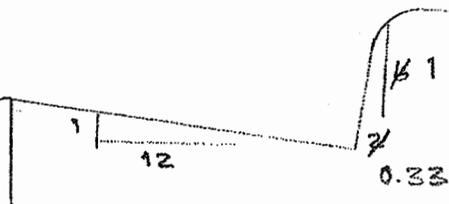
REAR OF PARKING LOT



$Q_{10} = 3.9 \text{ CFS}$ (Conservatively assume $\frac{1}{2}$ flow to swale goes through this point)

$\therefore Q_{10} = 1.95 \text{ CFS}$

Slope = 0.5%



Assume a V-ditch section (See HY-22)

$\bar{V} = 2.58 \text{ fps}$, if Z of 12 is continued, \therefore since Z is discontinued the depth is less and the V is less. However, to be conservative and protect the sandy soils, a 4' rock buffer of 6" deep stone will be proposed along the rear of the parking lot.

FHWA Urban Drainage Design Program, HY-22
HYDRAULIC PARAMETERS OF OPEN CHANNELS

Trapezoidal, Rectangular, or Triangular X-Section
Date: 02/03/2006

Project No. :31529.01
Project Name.:Zion Baptist Site Improvements
Computed by :SES, PE

INPUT PARAMETERS

1. Channel Slope (ft/ft)	0.0050
2. Channel Bottom Width (ft)	0.00
3. Left Side Slope (Horizontal to 1)	12.00
4. Right Side Slope (Horizontal to 1)	0.33
5. Manning's Coefficient	0.013
6. Discharge (cfs)	1.95
7. Depth of Flow (ft)	0.35

OUTPUT RESULTS

Cross Section Area (Sqft)	0.76
Average Velocity (ft/sec)	2.58
Top Width (ft)	4.32
Hydraulic Radius (ft)	0.16
Froude Number	1.09

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment		Adjusted CN
			%C	%UC	
Shopping Center	96	14.300			96.00
Community College	86	52.100			86.00
High School (soccer fields & roads)	88	6.600			88.00
Sports Complex	88	31.800			88.00
State Roads & R/W	92	4.500			92.00
Forested Land	70	41.800			70.00
Existing Pond	100	7.200			100.00
Utility Easement	75	6.400			75.00
Existing Church Site	90	2.500			90.00
Stadium Site	93	12.600			93.00
High School (assumed pre-dev condit	70	16.800			70.00
Existing residential development	77	3.300			77.00
COMPOSITE AREA & WEIGHTED CN --->		199.900			83.04 (83)

TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.

WORKSHEET FOR SCS HYDROLOGIC PARAMETERS

Site Conditions:	<input checked="" type="checkbox"/>	Existing	Project: James City County PPEA Dam
	<input type="checkbox"/>	Proposed	Subarea Number: D1
Off-Site Land Use:	<input checked="" type="checkbox"/>	Existing	By: M. Claud
	<input type="checkbox"/>	Proposed	Date: 3/7/2005

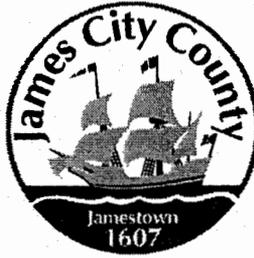
RUNOFF CURVE NUMBER

	Land Use or Zoning	Area (acres)	RCN	RCN x Area
	On-Site High School (soccer fields & roads)	6.6	88	580.8
	On-Site Community College	52.1	88	4584.8
	Off-Site Shopping Center	14.3	96	1372.8
	On-Site Forested Land	41.8	70	2926
	On-Site Existing Pond	7.2	100	720
	Off-Site State Roads & R/W	4.5	92	414
	On-Site Sports Complex	31.8	88	2798.4
	On-Site Utility Easment	6.4	75	480
	On-Site Stadium Site	12.6	88	1108.8
	Off-Site Existing Church Site	2.5	90	225
	On-Site High School (assume pre-dev conditions)	16.8	70	1176
	Off-Site Existing residential development	3.3	77	254.1

Total Area 0.312 sq. mi Weighted RCN =
(80.9 Hectares)

TIME OF CONCENTRATION

ID	Type of Flow	n	Length (ft)	Slope (ft/ft)	Area (sf)	Wet P (ft)	Velocity (fps)	Tc (hrs)
Sheet Flow (P ₂ = 3.5 in.)								
A	Grass (long)	0.24	100	0.01	$T_c = \frac{0.007 (nL)^{0.8}}{(P_2)^{0.5} S^{0.4}}$			0.30
Shallow Concentrated Flow								
B	Paved		1000	0.010			5	0.06
Channel Flow								
C	Piped	0.09	5000	0.0100			7.00	0.20
								Total T _c 0.55



**PLANNING DIVISION
TRANSMITTAL**



DATE: December 14, 1997

TO: Environmental Division County Engineer
JCSA(2)
VDOT(3)

Fire
Health (Old Colony)
Real Estate Assessment

FROM: Gary A. Pleskac, Senior Planner, 253-6689

SUBJECT: SP-139-97, Zion Baptist Site Improvements

ITEMS ATTACHED: Stormwater Calcs
Site Plan

INSTRUCTIONS: Please Review and Comment.

ENGINEER/FIRM CONTACT: Espey-Huston, Associates

RETURN REQUESTED: December 29, 1997

AGENCY COMMENTS:

Gordon, Michael

From: Scott Thomas [SCOTTT@james-city.va.us]
Sent: Friday, June 24, 2005 11:43 AM
To: Gordon, Michael
Cc: Wayland Bass; William Porter
Subject: Zion Baptist Church Expansion

Mike – As promised I am responding back to you with some guidance as you move forward with the expansion plan for the Zion Baptist Church at the intersection of Richmond and Centerville Roads. Some time ago we met at the site and discussed what would be required for erosion and sediment control and stormwater management for the building and parking additions as envisioned. At that time, the proposed improvements under the Warhill PPEA and TNCC was not well-defined and I instructed you that additional impervious cover for the expansion would be subject to water quality and County stream channel protection requirements.

Well a lot has happened in the past year or so as it pertains to the Warhill PPEA project and I can give you some better guidance. As part of the Warhill PPEA project, the District Park West pond (BMP ID Code: PC105) will be upgraded as a BMP to serve the outlet mall, the TNCC site and the road improvements for the Warhill tract. This basin will serve about 200 acres of which about 60 acres will be impervious and will be upgraded to provide water quality and stream channel protection control for the upland improvements. As drainage from the Zion Church site will eventually get into manmade drainage systems which gets into the proposed storm trunk line and go to the District Park West Pond, it is our Division's intention to include the church site in this framework. I have briefly discussed this intent with Bill Porter, Assistant County Administrator, who is currently negotiating with the church due to Centerville Road and Richmond Road expansions necessary under the PPEA project and Wayland Bass, County Engineer, who is assigned to the stormwater management team for the Warhill PPEA project. I believe we are all in agreement with this at this time.

Therefore, here is revised guidance. You can attach this email to your plan of development submission when you finally submit it to Planning.

- Provide an Environmental Inventory
- Provide an Erosion and Sediment Control Plan for land-disturbing activities for the expansion portion.
- Address Water Quality requirements with onsite BMPs. →
- Stream Channel Protection requirements will be handled by the downstream regional facility and will not be required to be addressed onsite.
- Address Special Stormwater Criteria which was adopted by the BOS on December 14, 2005 (attached). SSC is based on the anticipated disturbed area for the project and there are about 40 choices to choose from to comply with the criteria.

It would be anticipated that there will be a strip of wooded buffer natural area between the church and the TNCC improvement site; therefore, although stream channel protection will not be required onsite, the outfall of proposed onsite drainage system (channel, pipe, etc.) should be non-erosive and comply with Minimum Standard # 19 of the Virginia Erosion and Sediment Control regulations. Simply put a level spreader or other similar feature should be placed at the outfall of the proposed system to ensure that gully erosion does not occur within the natural wooded area.

I know it's early in your process, but we are advancing with the design of the upgrades for the District Park West Pond rather quickly. I prefer that we incorporate the runoff characteristics of the proposed church site now into that design – at least as much as we know at this point. Therefore, I request that you provide me some preliminary site information to the best of your knowledge at this point. I need the following information on the church site.

Total Site Area – Based on County GIS, the parcel is 2.45 acres
Existing Impervious Cover of the Site
Proposed Impervious Cover Associated with the expansion

1450 2012

We will need this to tabulate total impervious cover to the west pond and also to determine runoff curve numbers for the drainage subarea the church is in when it is completed (for stream channel protection purposes. Please email me back and I will forward it on appropriately.

Scott J. Thomas, P.E.
James City County
Environmental Division

Visit:

http://www.james-city.va.us/resources/devmgmt/div_devmgmt_environ.html

and

www.protectedwithpride.org

Stewart, Stephen

From: Scott Thomas [SCOTTT@james-city.va.us]
Sent: Tuesday, January 17, 2006 12:27 PM
To: Stewart, Stephen
Cc: Matthew Arcieri
Subject: RE: Zion Baptist Church Stormwater

Stephen

As discussed with you on the phone this morning, I suggest that it would be best to just go ahead and submit the plan of development to start the process. Being part of the Warhill PPEA team, I am quite aware of the situation you face on this one. To give you a better update, the Zion Baptist Church would be covered for both water quality and stream channel protection (for existing and improvements) by upgrades that have occurred to the District Park West Pond PC 105. I believe we allowed 2.5 acres at a RCN of 90 and imperviousness up to 60 percent to make sure this site was covered in downstream facility design (ie. storm trunk, BMP, etc.). So there is no need to incorporate water quality into the site design, unless you prefer to use onsite methods to meet Special Stormwater Criteria requirements. Because of the site's location in the Powhatan Creek watershed, it would be subject to SSC criteria. This has also been the case for all the County related projects on the Warhill Tract. Although quantity control will be covered once the development around the TNCC site comes to fruition, we must focus on interim control to ensure the discharges from the site do not create erosive conditions on the interim.

Based on the review of your sketch, I would have two comments at this time:

- Incorporate a dry swale component (ie. permeable soil and underdrain) into the 6 ft. wide swale to promote infiltration to serve as interim quantity control, but would also help you to achieve SSC.
- It would like you would need 3 unit SSCP measures to achieve SSC criteria.
- Incorporate a level spreader device at the end of the conveyance swale to spread out flow and try to return it to sheet flow to prevent erosion at the outfall. The TNCC road/site plan would pick up drainage from there.

(Note: The goal would be to provide interim control which does not cause erosion at the outfall until such time as the TNCC road/site work can handle the increased runoff from this site.)

We will not know who the assigned case manager will be from our Planning Division until the plan is actually submitted. However, Matt Arcieri (253-6876) is assigned to the Warhill PPEA team from Planning and may be able to give you some guidance from a Planning perspective if you have questions about the buffers, etc. I've attached our Special Stormwater Criteria for your information.

Scott J. Thomas, P.E.
James City County
Environmental Division

Visit:

http://www.james-city.va.us/resources/devmgmt/div_devmgmt_environ.html

and

www.protectedwithpride.org

-----Original Message-----

From: Stewart, Stephen [mailto:SStewart@VHB.com]
Sent: Tuesday, January 17, 2006 11:24 AM
To: Scott Thomas
Subject: Zion Baptist Church Stormwater

Scott,

1/17/2006

PC234_ZION_BAPTIST_CHURCH - 074

I'm the Project Manager for the improvement to Zion Baptist church located at Centerville and Richmond Road. I see from the attached email that you and Mike Gordon previously met on-site to discuss the stormwater options that challenge development. After considering various options, I'd like to talk to you about the attached pdf sketch and my proposed improvements. I will follow this email with a call.

Thanks for your help.

Stephen

Stephen E. Stewart, PE, MBA

Project Manager

Vanasse Hangen Brustlin, Inc. (VHB)

11832 Rock Landing Drive, Suite 207

Newport News, Virginia 23606-4231

Phone 757.873.3386 Fax 757.873.0757

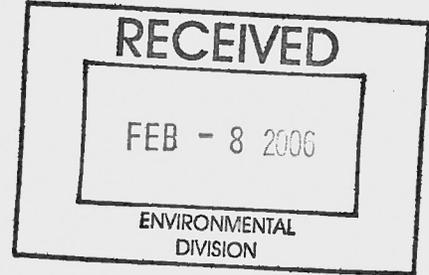
[sstewart@vhb.com](mailto:ssstewart@vhb.com) www.vhb.com

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Vanasse Hangen Brustlin, Inc. 101 Walnut St
Watertown, MA 02472
617-924-1770

PUBLIC HEARING TRANSMITTAL

DATE: February 8, 2006

TO: Fire
Environmental
JCSA
Co. Engineer
VDOT
Allen Murphy
Bill Porter
Marvin Sowers
Adam Kinsman



FROM: Ellen Cook, Senior Planner

SUBJECT: SUP-3-06, Zion Baptist Church (EXPANSION)

ITEMS ATTACHED:
1. Master Plan
2. DRAFT potential SUP conditions

INSTRUCTIONS: Please review and return comments by February 17, 2006. **This case will be brought before the March 6, 2006 Planning Commission meeting. (Please see also SUP-24-01 and SUP-22-04)**

FEB 10 2006
DUE MARCH 1ST

2/10/06
Scott
Comments in
SUP-003-06.0
Mike

Scott Thomas

From: Scott Thomas
Sent: Tuesday, January 17, 2006 12:27 PM
To: 'Stewart, Stephen'
Cc: Matthew Arcieri
Subject: RE: Zion Baptist Church Stormwater

Stephen

As discussed with you on the phone this morning, I suggest that it would be best to just go ahead and submit the plan of development to start the process. Being part of the Warhill PPEA team, I am quite aware of the situation you face on this one. To give you a better update, the Zion Baptist Church would be covered for both water quality and stream channel protection (for existing and improvements) by upgrades that have occurred to the District Park West Pond PC 105. I believe we allowed 2.5 acres at a RCN of 90 and imperviousness up to 60 percent to make sure this site was covered in downstream facility design (ie. storm trunk, BMP, etc.). So there is no need to incorporate water quality into the site design, unless you prefer to use onsite methods to meet Special Stormwater Criteria requirements. Because of the site's location in the Powhatan Creek watershed, it would be subject to SSC criteria. This has also been the case for all the County related projects on the Warhill Tract. Although quantity control will be covered once the development around the TNCC site comes to fruition, we must focus on interim control to ensure the discharges from the site do not create erosive conditions on the interim.

Based on the review of your sketch, I would have two comments at this time:

- Incorporate a dry swale component (ie. permeable soil and underdrain) into the 6 ft. wide swale to promote infiltration to serve as interim quantity control, but would also help you to achieve SSC.
- It would like you would need 3 unit SSCP measures to achieve SSC criteria.
- Incorporate a level spreader device at the end of the conveyance swale to spread out flow and try to return it to sheet flow to prevent erosion at the outfall. The TNCC road/site plan would pick up drainage from there.

(Note: The goal would be to provide interim control which does not cause erosion at the outfall until such time as the TNCC road/site work can handle the increased runoff from this site.)

We will not know who the assigned case manager will be from our Planning Division until the plan is actually submitted. However, Matt Arcieri (253-6876) is assigned to the Warhill PPEA team from Planning and may be able to give you some guidance from a Planning perspective if you have questions about the buffers, etc. I've attached our Special Stormwater Criteria for your information.

Scott J. Thomas, P.E.
James City County
Environmental Division

Visit:

http://www.james-city.va.us/resources/devmgmt/div_devmgmt_environ.html

and

www.protectedwithpride.org

-----Original Message-----

From: Stewart, Stephen [mailto:SStewart@VHB.com]
Sent: Tuesday, January 17, 2006 11:24 AM
To: Scott Thomas
Subject: Zion Baptist Church Stormwater

Scott,

I'm the Project Manager for the improvement to Zion Baptist church located at Centerville and Richmond Road. I see from the attached email that you and Mike Gordon previously met on-site to discuss the stormwater options that challenge development. After considering various options, I'd like to talk to you about the attached pdf sketch and my proposed improvements. I will follow this email with a call.

Thanks for your help.

Stephen

Stephen E. Stewart, PE, MBA

Project Manager

Vanasse Hangen Brustlin, Inc. (VHB)

11832 Rock Landing Drive, Suite 207

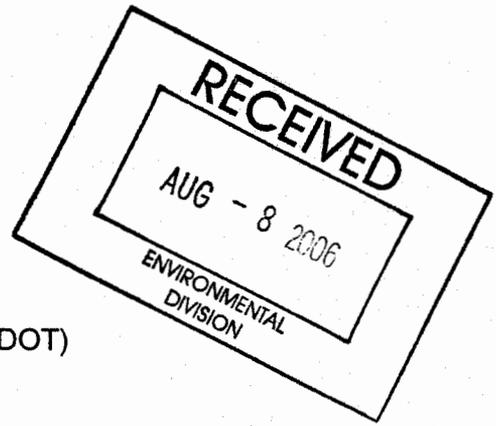
Newport News, Virginia 23606-4231

Phone 757.873.3386 Fax 757.873.0757

sstewart@vhb.com www.vhb.com

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Vanasse Hangen Brustlin, Inc. 101 Walnut St
Watertown, MA 02472
617-924-1770

TRANSMITTAL



DATE: 07 August 2006

TO: Environmental Division
Virginia Department of Transportation (VDOT)
James City Service Authority (JCSA)
Fire Department
Landscape Planning (Scott Whyte)

FROM: David W. German, Planner

SUBJECT: **SP-036-06 Zion Baptist Church**
(Second Submission, 03 August 2006)

ITEMS ATTACHED: All reviewing agencies: Site Plan
JCSA: Comment Letter
Water Data Sheets (x3)
Environmental: Comment Letter
E&S Calculations
Stormwater Calculations

ACTION REQUESTED: *Please review and respond with any comments or concerns that you may have by 21 August 2006. Thank you!*

NOTES:
(No additional notes.)

Approved.
Scott Thomas for DEC
08-15-06

AUG 15 2006
Due Aug 29

(Note: VHB to make 5 minor corrections on E&S and Drainage plans in final sets back to Planning. per conversation on 8-15-06 between Scott Thomas and Steven Stewart.)

David W. German, Planner
Planning Division
Development Management Department
101-A Mounts Bay Road, P.O. Box 8784
Williamsburg, Virginia 23187-8784
(757) 253-6685

10. When the original submission was made, VHB did not have a recorded plat showing the newly acquired right-of-way. This line represented the approximate location of the right-of-way and has adjusted to correctly reflect its location.
11. The front entrance is also identified with the requested symbol.
12. Comment noted and complied with at ground breaking ceremony.
13. The table has been updated as requested.
14. Courthouse Construction is coordinating these efforts.

Environmental Division Comments:

- ~~1.~~ Comment noted.
- ~~2.~~ Courthouse Construction will secure this permit upon approval of Site Plan.
3. Site information and statistics are now shown on the Cover Sheet, as requested.
- ~~4.~~ The SUP number for this project is referenced, as requested.
- ~~5.~~ The requested note is provided on the Cover Sheet.
- ~~6.~~ The corrected property boundary is shown and no longer disturbs neighboring parcels.
- ~~7.~~ General Note #22 on Sheet C-1, references the required permit. Courthouse Construction will secure the required permit upon Site Plan approval.
- ~~8.~~ Comment noted and coordinated with Client's contractor, Courthouse Construction.
- ~~9.~~ The requested note is provided within the title block of each sheet.
- ~~10.~~ The Environmental Inventory sheet has been updated to meet JCC standards.
- ~~11.~~ The Environmental Inventory sheet has been updated to meet JCC standards.
- ~~12.~~ A completed James City County Erosion and Sediment Control and Stormwater Management Design Plan Checklist are included with this submission.
13. The E&S narrative has been revised to be consistent with this site.
- ~~14.~~ These notes have been removed from the plans.
- ~~15.~~ A safety fence is provided to prevent disturbance and access to the cemetery.
16. ~~a.~~ As requested, the sequence of construction is also being shown on Sheet C-3.
 - ~~b.~~ The environmental division is now designated, as requested.
 - ~~c.~~ The sequence has been modified to specify that demolition activities shall not occur until E&S measured installed and functional.
- ~~17.~~ The emphasized note has been added, as requested.
- ~~18.~~ Super silt fence (wire reinforced) has been added, as suggested.
- ~~19.~~ A temporary check dam is now shown.
- ~~20.~~ In order to achieve SSC credit, EC-3 matting is specified in the requested areas as well in areas surrounding the level spreaders.
- ~~21.~~ Proposed grades are shown on the sediment trap, as requested.
- ~~22.~~ Dust control measures are specified on the Erosion and Sediment Control Plan and identified in the narrative.

Stormwater Management/Drainage:

23. The level spreaders have been relabeled.
24. A maintenance plan for the level spreaders is provided on the Grading Plan, as requested.



Mr. David W. German

August 3, 2006

Page 4 of 4

25. A detail of the gravel diaphragm is provided on Sheet C-11 and is based upon the Virginia Stormwater Management Handbook detail for a pea gravel diaphragm.
26. To dissipate energy from the swale and prevent erosion around the level spreader, rip rap outlet protection is provided.
27. Comment noted. SSC criteria is met with other proposed measures.

Twelve (12) copies of the Site Plan (Sheets C1-C11, SV1, EI-1, L1, & SL-1, dated March 24, 2006 revised August 3, 2006) are enclosed for your use. Also enclosed are two (2) copies of the Stormwater Calculations, dated August 3, 2006. Please call if you have any questions, or if additional information is needed.

Sincerely,

VANASSE HANGEN BRUSTLIN, INC.

Stephen E. Stewart

Stephen E. Stewart, PE, MBA
Project Manager

SES/rpl

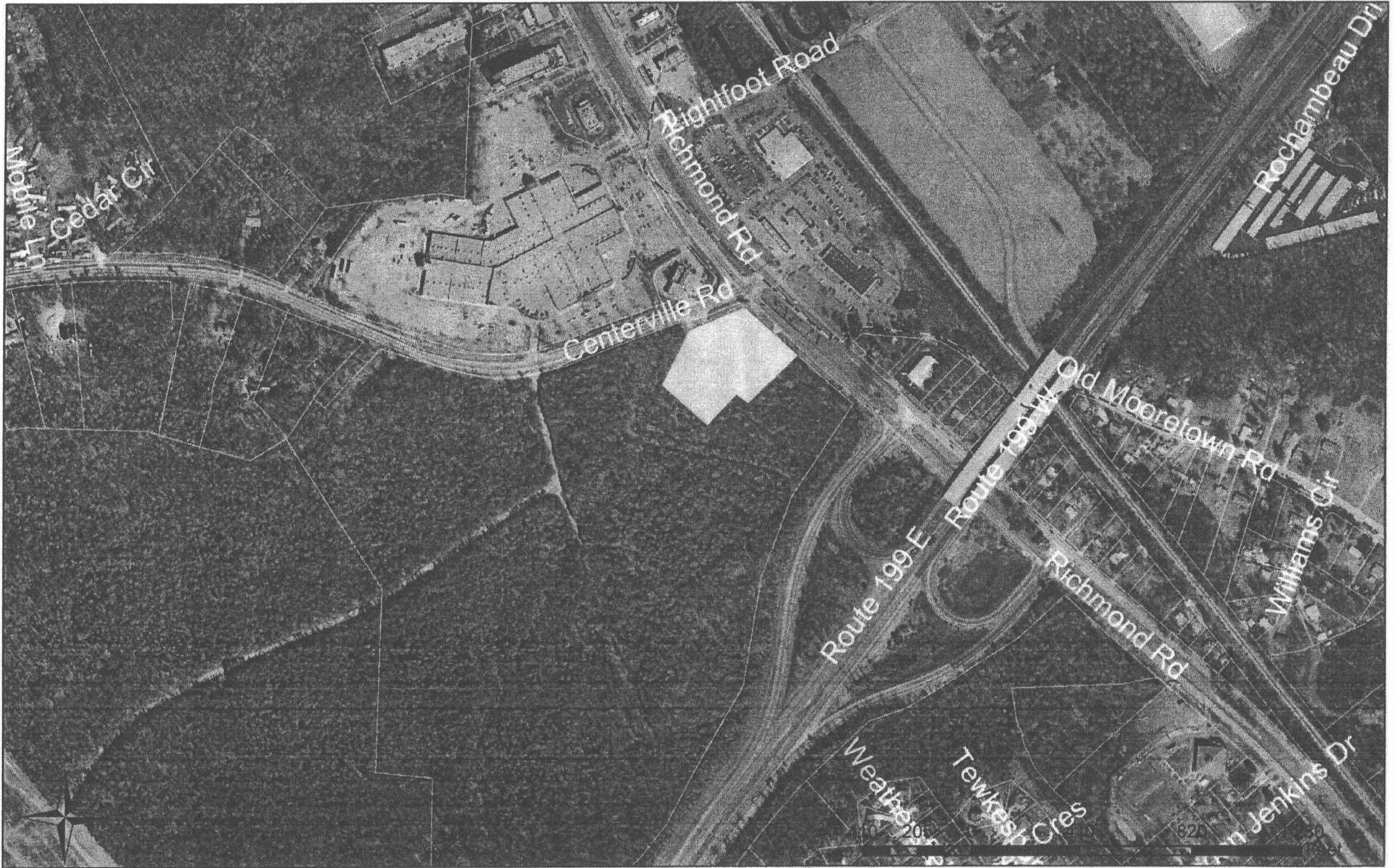
Enclosures

cc: Deacon John Mormon, Zion Baptist Church
Mr. Troy Royston, Courthouse Construction, Inc.



JCC-SUP-3-06

Zion Baptist Church Expansion



PROJECT DESCRIPTION

Mr. John Morman, on behalf of Zion Baptist Church, has applied for a special use permit (SUP) to allow the construction of approximately 5,900 square feet of additions to the existing Zion Baptist Church located at 6373 Richmond Road, at the intersection of Centerville Road. The proposed additions would house the relocated sanctuary, allowing the former sanctuary to be used as the fellowship hall. The existing church is approximately 4,140 square feet in size. At the time it was originally constructed, a house of worship was a permitted use in the R-8, Rural Residential, zoning district. Currently, a house of worship requires an SUP in the R-8 district. An expansion of a specially permitted use also requires an SUP.

The property is located at the southern side of Centerville Road at the intersection of Richmond Road. The parcel is adjacent to the Warhill Tract which was recently rezoned (Z-6-05). The approved Warhill Master Plan indicates that the area immediately surrounding the church parcel will have buildings associated with the Thomas Nelson Community College (TNCC) campus; the Warhill Master Plan also includes the Third High School and various sports facilities. During the rezoning process, 1.14 acres of land were conveyed to Zion Baptist by the County in exchange for additional right-of-way along Centerville Road.

PUBLIC IMPACTS

Environmental

Watershed: Powhatan Creek

Staff Comments: Environmental staff noted that this site was included in overall stormwater master planning associated with the Warhill Master Plan and other County Warhill tract development. It was included in postdevelopment drainage assumptions associated with the TNCC site and associated drainage systems. As such, the Zion Baptist Church expansion is covered for ultimate stormwater quality and quantity control by regional best management practice (BMP) methods consistent with the approved Powhatan Creek Watershed Master Plan. Environmental staff further stated that it would be important to ensure that increased runoff from the site, on an interim basis, does not result in the erosion of existing natural off-site receiving channels until such time as associated off-site drainage improvements are implemented. Environmental staff has reviewed the applicant's initial plan for addressing this issue and has generally concurred with the concept: final details of the stormwater plan will be worked out at the plan of development stage.

Public Utilities

This site is served by public water and sewer.

Staff Comments: JCSA staff had only minor technical comments to be addressed at the plan of development stage.

Transportation

The property has existing entrances on both Centerville Road and Richmond Road. Both entrances would continue to be utilized, and both would be right-in, right-out only. Based on Institute of Transportation Engineers projections, the expanded church would generate 388 total trips on a given Sunday, and 11 weekday p.m. peak hour trips.

2005 Traffic Counts:

Centerville Road (from Richmond Road to Ruth Lane/Route 678): 10,364

Richmond Road (from Lightfoot Road to Olde Towne Road): 23,288

2026 Volume Projected:

Centerville Road (from Route 60 to Longhill Road): 15,000

Richmond Road (from Centerville Road to Route 199): 31,000

Road Improvements:

- Condition 5 states that all entrances shall be approved by VDOT prior to final site plan approval.
- Relevant road improvements which have been approved and will be completed in association with the Third High School/TNCC project include: Centerville Road will be widened to a four-lane, median divided roadway from Richmond Road to the Warhill entrance road; and the northbound Centerville Road approach to Richmond Road will be reconstructed to accommodate a left,

combination left-through, and a right-turn movement, with approximately 300 feet of left-turn storage capacity.

VDOT Comments: The traffic generated from the church expansion as proposed will not adversely impact the local roadway network. Since this portion of Centerville Road will become divided by a concrete median, the entrance will be limited to right-in/right-out only. No changes to the design of the entrance will be required as a result of this.

Staff Comments: The traffic study conducted for the Warhill Rezoning states that with the added traffic from the Third High School and TNCC, the Centerville/Richmond Road intersection is projected to operate at a Level of Service "C" in both 2007 and 2017 once the signal is optimized and specific geometric improvements (listed above) are made. Church officials state that the current church membership and attendance should remain approximately the same with or without the proposed additions, as the additions are for the purpose of providing more space for existing uses. As a result, the proposed additions are not likely to significantly increase the church's trip generation, and the trips that are generated will be largely for off-peak days and times.

COMPREHENSIVE PLAN

Land Use Map Designation

The Property is designated as Mixed Use on the Comprehensive Plan Land Use Map, specifically the Lightfoot Mixed Use Area. The Comprehensive Plan states "for the undeveloped land in the vicinity of and including the Route 199 crossover of Richmond Road (Route 60 West) at the Warhill property, the principle suggested uses are a mixture of public uses and commercial, office and limited industrial."

Since this expansion will be contained within the existing church property, and will not impact the development of the Mixed Use potential for the Warhill property, staff finds this expansion to be generally consistent with the Comprehensive Plan.

Other Considerations

- **Community Character:** Both Centerville Road and Richmond Road are designated as Community Character Corridors.

Conditions

SUP Conditions 1, 2, 3, and 6 are included to address any negative impacts the project might have on these Character Corridors. The proposed expansion is located approximately 90 feet from Richmond Road (approximately the same distance as the existing structure) and over 170 feet from Centerville Road.

RECOMMENDATION

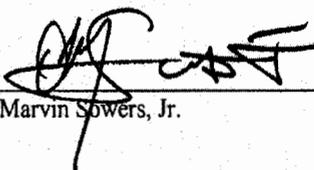
Staff finds the proposed additions consistent with surrounding zoning and development and consistent with the Comprehensive Plan. Staff recommends the Board approve this application with the following conditions:

1. **Concept Plan:** This special use permit shall be valid for a 5,900-square-foot expansion of the Zion Baptist Church and accessory uses thereto as shown on the "Exhibit for SUP" dated February 3, 2006. Development of the site shall be generally in accordance with the above-referenced plan as determined by the Development Review Committee of the James City County Planning Commission (the "DRC"). Minor changes may be permitted by the DRC, as long as they do not change the basic concept or character of the development.
2. **Architecture:** The building materials, design, scale, and colors of the addition shall be compatible with that of the existing structure. The colors, design, and building materials for the addition shall be submitted to, and approved by, the Planning Director prior to final site plan approval.
3. **Lighting:** Any new exterior site or building lighting shall have recessed fixtures with no bulb, lens, or globe extending below the casing. The casing shall be opaque and shall completely surround the entire light fixture and light source in such a manner that all light will be directed downward and the light source are not visible from the side. Fixtures which are horizontally mounted on poles shall not exceed 15 feet in height. No glare defined as 0.1 foot-candle or higher shall extend outside the property lines.

4. Water Conservation: The owner shall be responsible for developing and enforcing water conservation standards to be submitted to and approved by the James City Service Authority prior to final development plan approval. The standards may include, but shall not be limited to such water conservation measures as limitations on the installation and use of irrigation systems and irrigation wells, the use of approved landscaping materials including the use of drought tolerant plants where appropriate, and the use of water conserving fixtures and appliances to promote water conservation and minimize the use of public water resources.
5. Entrance Improvements: Entrance improvements shall meet the requirements of the Virginia Department of Transportation (VDOT) and shall be approved by VDOT prior to final site plan approval.
6. Landscaping: A landscaping plan shall be approved by the Planning Director, or his designee, prior to final site plan approval. The owner shall provide landscaping for the area surrounding the future church expansion to mitigate the impact of the expansion on the adjacent property. Landscaping shall be provided along the Centerville and Richmond Road Community Character Corridors which exceeds ordinance planting requirements by at least 125 percent.
7. Commencement of Construction: If construction has not commenced on this project within 36 months from the issuance of a special use permit, the special use permit shall become void. Construction shall be defined as obtaining permits for building construction and footings and/or the foundation has passed required inspections.
8. Severance Clause: This special use permit is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

Ellen Cook

CONCUR:



O. Marvin Sowers, Jr.

EC/tlc
Sup_3_06ZionCrch

ATTACHMENTS:

1. Planning Commission Minutes
2. Location Map
3. Exhibit for SUP (separate cover)
4. Resolution

SUP-13-06 APPROVED MAR 14 2006

RESOLUTION

CASE NO. SUP-3-06. ZION BAPTIST CHURCH EXPANSION

WHEREAS, the Board of Supervisors of James City County has adopted by ordinance specific land uses that shall be subjected to a special use permit (SUP) process; and

WHEREAS, Mr. John Morman has applied on behalf of Zion Baptist Church for an SUP to allow the expansion of the existing church by approximately 5,900 square feet; and

WHEREAS, the proposed building is shown on the plan prepared by VHB, Inc., dated February 3, 2006, and entitled "Zion Baptist Church: Exhibit for SUP"; and

WHEREAS, the property is located on land zoned R-8, Rural Residential District, and can be further identified as Parcel No. (1-47) on James City County Real Estate Tax Map No. (24-3); and

WHEREAS, the Planning Commission, following its public hearing on March 6, 2006, voted 7 to 0 for approval of this application.

NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of James City County, Virginia, does hereby approve the issuance of Special Use Permit No. 3-06 as described herein with the following conditions:

1. Concept Plan. This SUP shall be valid for a 5,900-square-foot expansion of the Zion Baptist Church and accessory uses thereto as shown on the "Exhibit for SUP" dated February 3, 2006. Development of the site shall generally be in accordance with the above-referenced plan as determined by the Development Review Committee (DRC) of the James City County Planning Commission. Minor changes may be permitted by the DRC, as long as they do not change the basic concept or character of the development.
2. Architecture. The building materials, design, scale, and colors of the addition shall be compatible with that of the existing structure. The colors, design, and building materials for the addition shall be submitted to, and approved by the Planning Director prior to final site plan approval.
3. Lighting. Any new exterior site or building lighting shall have recessed fixtures with no bulb, lens, or globe extending below the casing. The casing shall be opaque and shall completely surround the entire light fixture and light source in such a manner that all light will be directed downward and the light source is not visible from the site. Fixtures which are horizontally mounted on poles shall not exceed 15 feet in height. No glare defined as 0.1 foot-candle or higher shall extend outside the property lines.
4. Water Conservation. The owner shall be responsible for developing and enforcing water conservation standards to be submitted to and approved by the James City Service Authority prior to final development plan approval. The standards may include, but shall not be limited to, such water conservation measures as limitations

on the installation and use of irrigation systems and irrigation wells, the use of approved landscaping materials including the use of drought tolerant plants where appropriate, and the use of water conserving fixtures and appliances to promote water conservation and minimize the use of public water resources.

5. Entrance Improvements. Entrance improvements shall meet the requirements of the Virginia Department of Transportation (VDOT) and shall be approved by VDOT prior to final site plan approval.
6. Landscaping. A landscaping plan shall be approved by the Planning Director, or his designee, prior to final site plan approval. The owner shall provide landscaping for the area surrounding the future church expansion to mitigate the impact of the expansion on the adjacent property. Landscaping shall be provided along the Centerville and Richmond Road Community Character Corridors which exceeds the ordinance planting requirements by at least 125 percent.
7. Commencement of Construction. If construction has not commenced on this project within 36 months from the issuance of an SUP, the SUP shall become void. Construction shall be defined as obtaining permits for building construction and footings and/or the foundation has passed required inspections.
8. Severance Clause. This SUP is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

Bruce C. Goodson
Chairman, Board of Supervisors

ATTEST:

Sanford B. Wanner
Clerk to the Board

Adopted by the Board of Supervisors of James City County, Virginia, this 14th day of March, 2006.

SUP_3_06ZionCrch.res

**SPECIAL USE PERMIT-3-06. Zion Baptist Church Expansion
Staff Report for the March 14, 2006, Board of Supervisors Public Hearing**

This staff report is prepared by the James City County Planning Division to provide information to the Planning Commission and Board of Supervisors to assist them in making a recommendation on this application. It may be useful to members of the general public interested in this application.

PUBLIC HEARINGS

Planning Commission:
Board of Supervisors:

Building F Board Room; County Government Complex

March 6, 2006, 7 p.m.
March 14, 2006, 7 p.m.

SUMMARY FACTS

Applicant: John Morman
Land Owner: Zion Baptist Church
Proposal: House of Worship Expansion
Location: 6373 Richmond Road
Tax Map/Parcel No.: (24-3)(1-47)
Parcel Size: 3.59 acres
Zoning: R-8, Rural Residential
Comprehensive Plan: Mixed Use
Primary Service Area: Inside

STAFF RECOMMENDATION

Staff finds the proposed additions consistent with surrounding zoning and development and consistent with the Comprehensive Plan. Staff recommends the Board approve this application with the conditions listed in the staff report.

Staff Contact: Ellen Cook

Phone: 253-6685

PLANNING COMMISSION RECOMMENDATION

At their March 6, 2006, meeting, the Planning Commission recommended approval of this application by a vote of 7-0.

Proposed Changes Made Since Planning Commission Meeting

None.

**UNAPPROVED MINUTES OF THE MARCH 6, 2006 MEETING
OF THE PLANNING COMMISSION**

SUP-3-06 Zion Baptist Church

Ms. Ellen Cook stated that Mr. John Morman has applied on behalf of Zion Baptist Church for a special use permit to expand the existing church by approximately 5,900 square feet. The site is zoned R-8, Rural Residential and is located at 6373 Richmond Road, at the intersection of Centerville and Richmond Roads. The property is further identified as parcel (1-47) on JCC Tax Map No. (24-3), and is designated Mixed Use on the Comprehensive Plan Land Use Map. Uses suggested by the Comprehensive Plan for this Mixed Use Area include public uses, commercial, office and limited industrial. Staff recommended approval.

Mr. Fraley opened the public hearing.

Mr. Morman represented Zion Baptist Church stating that the church needed additional space for the different activities that are held there.

Mr. David Alexick, 6436 Centerville Road, stated that citizens seated in the rear were having a difficult time hearing the speakers. Mr. Alexick stated that he did not oppose the case.

Hearing no other requests to speak the public hearing was closed.

Mr. Kennedy motioned for approval of the application.

Ms. Jones seconded the motion.

In a unanimous roll call vote the application was recommended for approval (7-0). AYE: Hunt, Jones, Hughes, Kennedy, Billups, Obadal, Fraley (7); NAY: (0).

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ZION BAPTIST CHURCH EXPANSION
COUNTY PLAN NO. SP - 36 - 06
May 30, 2006

General:

1. ✓ A Land-Disturbing Permit and Siltation Agreement, with surety, are required for this project.
2. ✓ A Standard Inspection / Maintenance agreement is required to be executed with the County due to the proposed stormwater conveyance systems and Stormwater Management/BMP facilities associated with this project. (Note: This is required for the two permanent level spreaders as proposed for the project.)
3. ✓ Site Tabulation. Move the site statistics table from Sheet C-5 onto the cover sheet. In one central area, show site area, proposed impervious cover, percent impervious cover (new site) and a disturbed area estimate for the project on the cover sheet. It must be demonstrated that the site imperviousness does not exceed 60 percent. *32% < 60%, cover*
4. ✓ SUP. Provide reference to the Special Use Permit SUP-03-06 for the project as approved on March 14, 2006. *cover*
5. ✓ Stormwater Note. Although provided on the grading & drainage plan, provide a note on the cover sheet of the drawing set to indicate that "stormwater management for this site is satisfied by master stormwater management planning associated with the Warhill Tract which included upgrades to the District Park West Pond, County BMP ID Code PC 105".
6. ✓ Offsite Work. Currently the drawing set shows work on offsite parcels including clearing, grading and installation of temporary erosion and sediment control and permanent drainage facilities. Provide evidence of permission to occupy and disturb the offsite adjacent tract from the parcel owner (GPIN 3210100013, TMB Service Corporation). A Land-Disturbing permit cannot be issued for this project until it is confirmed that the offsite owner gives permission to occupy, disturb and perform these activities or that this parcel now belongs to the church. (Note: It is our understanding that a portion of this adjacent parcel may have been provided to the church from the County during activities associated with the Warhill PPEA project. If that is the case, the site plan must reflect proper property line and ownership information.) *New boundary shown. No offsite work.*
7. ✓ VSMP. It appears construction activity for the site will exceed 2,500 square feet. Therefore, it is the owner's responsibility to register for coverage under the General Permit for Discharge of Stormwater from Construction Activities, in accordance with current requirements of the Virginia Department of Conservation and Recreation and the Virginia Stormwater Management Program. Visit <http://www.dcr.virginia.gov/sw/vsmp.htm> or contact the DCR Central Office at 804-371-7330 for additional information. (Note: General note # 22 on the cover sheet of the plans can be modified to reflect information associated with the DCR Virginia Stormwater Management Permit.) *Note 22, Sheet C-1*

*Stephen Stewart
MN
wms office
873-3386
220-0500*

- 8. ✓ VDOT. It appears a VDOT CE-7 (temporary construction entrance permit) may be required. Contact the Williamsburg Residency, Permits and Subdivisions at 757-253-4832 for further information.
- 9. ✓ Centerville and Richmond Roads. Provide reference on all applicable plan sheets to improvement work being performed on/along Centerville Road and Richmond Road US Route 60 from the Warhill Site Roadways and Improvements (ie. Warhill PPEA project) under County Plan No. SP-61-05. Provide a general note on the plan to indicate that work as proposed for this site may require general coordination with the County and/or the County's agent due to ongoing road improvement activities being performed on or along Richmond and/or Centerville Roads.

note added on title block of all sheets

Chesapeake Bay Preservation:

- 10. ✓ Although an environmental inventory plan sheet was provided in the plan set, an inventory showing whether or not components as listed under Section 23-10(2) of the Chesapeake Bay Preservation ordinance was not provided/listed. An inventory should list the components, state whether there are impacts or not and quantify impacts (acres, square feet, linear feet, etc.), if applicable.
- 11. ✓ The environmental inventory must show a limit of work (clearing and grading), to include installation of erosion and sediment control measures, BMPs and utilities, consistent with the site erosion and sediment control plan. The limit of work should be clearly transposed onto the inventory sheet so that the development plan's impact to environmentally sensitive areas (components per Section 23-10(2) of the County's Chesapeake Bay Preservation ordinance) can be properly assessed.

Sheet EI-1

Sheet EI-1

Erosion & Sediment Control Plan:

- 12. ✓ Design Checklist. Please provide a completed standard James City County Erosion and Sediment Control and Stormwater Management Design Plan Checklist, specific to this project. The intent of the checklist is to ensure the plan preparer has provided all items necessary for a complete and expeditious review.
- 13. E&S Narrative. The "offsite areas" and "stormwater runoff" portions of the Erosion and Sediment Control narrative on Sheet C-2 appears to reference a project other than Zion Baptist Church as it refers to Queens Creek, the York River and two onsite bioretention facilities. This questions the validity of the entire narrative as provided and whether any of the information even pertains to this specific project. Check and revise the entire narrative specific to this project.
- 14. ✓ Notes. General notes # 24 and # 25 on Legend and Note Sheet C-1 appear to have information that is not relevant to James City County. Check and revise these notes accordingly.

Provided.

change sw runoff considerations on sheet C-2 from Queens Creek to Pow Creek

- 15. Safety Fence. For maximum protection of existing cemetery areas situated on the site, add safety fence in accordance with Minimum Standard & Spec. 3.01 of the VESCH to the site erosion and sediment control plan, Sheets C-3 and C-7. Safety fence should be used effectively around the cemetery where construction traffic, access or site work, including laydown or storage areas, are in proximity to the cemetery.

Key symbols SAT per MS & S 3.01 Also show SAT on sheet C-4

16. Sequence of Construction. A sequence of construction (construction and erosion control event schedule) was provided on Sheet C-2. The following comments pertain to the sequence of construction as presented.
- 16a. ✓ If possible, it is preferred that the sequence of construction be moved to erosion and sediment control plan Sheet C-3 or Sheet C-7, rather than hidden on note Sheet C-2. *C-3.*
- 16b. ✓ Modify Step # 1 in the sequence to include contacting the Environmental Division at 253-6670 to schedule the pre-construction meeting, not Code Compliance.
- 16c. Sheet C-7 identifies demolition activities to occur on the site. The sequence must show when demolition activities are to occur. Minimum Standard # 4 of the Virginia Erosion and Sediment Control regulations would require that all perimeter erosion and sediment control measures be installed and functional before upslope land-disturbing begins, including that associated with site demolition activities. *step 5 before step 8*
17. ✓ Demolition Plan. Provide a label or legend for the hatched area on Sheet C-3, which is assumed to be area to be demolished. Provide a large "boxed" note on demolition plan Sheet C-3 to specify that demolition activities as indicated on this sheet cannot begin until all site erosion and sediment control plan measures are installed and functional. *C-3*
18. E&SC Plan. As level spreaders are not for sediment trapping purposes, in the northwest corner of the site, replace the far west silt fence (approximately 80 feet in length) with super (wire-reinforced) silt fence. Although the site is relatively flat at this location, the existing/proposed road to the right of the cemetery area does and will concentrate drainage to this location. A segment of super-silt fence would do a better job to handle concentrated disturbed area runoff at this location rather than regular silt fence and not put too much dependence on the level spreader for sediment trapping purposes. *Label SSF C-5*
19. ✓ E&SC Plan. The area situated to the northwest of the new parking area (ie. parking area to the south of the new building expansion) is proposed to be a temporary sediment trap during construction, and then a graded trapezoidal swale and level spreader system following stabilization of the site. Once the trap is removed and the system converted to a swale-level spreader, it will be necessary to provide at least one temporary rock check dam within the swale, until the swale itself is stabilized. Show and label the "temporary check dam" on Sheet C-5. *Sheet C-5*
20. ✓ E&SC Plan. Provide erosion control matting at the area of transition from the west side of the new parking lot (at the overflow from the gravel diaphragm) to where the trapezoidal swale grading begins as there is about 3 ft. of drop in 30 feet. If EC-3 turf-reinforcement matting is used for this area rather than EC-2, then Special Stormwater Criteria credit can be given as a better matting is being used than that required. Use of EC-2 would comply with erosion control purposes; however, EC-3 would meet the erosion control purpose and SSC criteria. *EC-3*
21. Sediment Trap. Label proposed grading for the sediment trap on Sheet C-7 and show cleanout elevation required for the temporary sediment trap either on plan Sheet C-7 or the detail on Sheet C-10.

22. Dust Control. Due to the proximity of the construction site to heavily traveled Richmond and Centerville Roads, add dust control measures in accordance with Minimum Standard 3.39 of the VESCH to the erosion and sediment control plan for the site. Show VESCH keys and symbols on the plan view and legend on Sheet C-7.

Stormwater Management / Drainage:

23. ✓ Level Spreaders. Label the proposed level spreaders. The one situated to the west of the new parking area (parking area to the south of the new building) should be called the "south level spreader" and the one situated to the west of the temporary gravel and future parking area should be labeled as the "north level spreader". S + N

24. ✓ Level Spreaders. As the two proposed level spreaders are permanent not temporary features a BMP maintenance plan is required. The maintenance plan must be provided within the plan set. Refer to Minimum Standard & Spec. 3.21 of the VESCH for information about maintenance of level spreaders. Ensure the maintenance plan references Minimum Standard & Spec. 3.21. sheet C-5

25. ✓ Pretreatment. Label the pretreatment gravel diaphragm shown along the west edge of the new south parking lot area. Provide a detail to show rock requirements, dimensions and whether geotextile fabric is necessary in the diaphragm. See page 3.13-12 of the Virginia Stormwater Management Handbook for material specifications for pea-gravel diaphragms. (Note: Although provided for quantity control, if it is felt that the diaphragm will provide a water quality component for the development plan, it can be used to achieve SSC criteria.)

26. ✓ Stormwater Channels. It is unclear if the existing stormwater conveyance channels along both sides of the existing road along the north side of the existing cemetery need to be re-shaped or re-graded due to increased runoff from the proposed temporary gravel and future parking lot area. This needs to be looked at from a drainage plan standpoint. Evaluate the channels and design in accordance with Minimum Standard # 19 as an onsite stormwater conveyance channel. If the channels need re-shaped show grading, details and provide computations as necessary. It would appear that a rock outlet protection pad is necessary in the south end of the level spreader to dissipate concentrated channel flow and reduce flow velocity from the channels prior to entry into the "north" level spreader. riprap provided
- Response to Comm # 25 says pea-gravel diaphragm detail provided on sheet C-11. Not found.

27. SSC. Special Stormwater Criteria credit cannot be given to SSCP # 8 (level spreaders) as shown in the matrix on Sheet C-5 as the level spreaders are being used to address basic stormwater quantity control (MS-19) requirements for the site. SSCP cannot be used to address traditional stormwater management criteria and the SSC criteria; therefore measure from the SSCP menu must be chosen. (Note: Refer to the top of page 5 of the SSC criteria paper for more information. Also, once addressed the fourth paragraph on the first page of the stormwater narrative must be revised See above related comments to the gravel diaphragm and use of EC-3 TRM matting as it pertains to SSC.)

3 RRD, 3 PROVIDED

mon/SJT

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ZION BAPTIST CHURCH EXPANSION
COUNTY PLAN NO. SUP - 03 - 06
February 10, 2006

General:

1. For the SUP application, provide a preliminary estimate of impervious cover associated with the church expansion project (ie. east building expansion, new parking and new pavement for access roads).
2. Provide a note on the concept plan to indicate that this project is situated within Subwatershed 205 and Catchment 205-106-1 of Powhatan Creek.
3. Powhatan Creek. This project is situated in the Powhatan Creek watershed. Please note the James City County Board of Supervisors, by resolution dated February 26th 2002, adopted eight (8) goals and 21 priorities associated with the Powhatan Creek Watershed Management Plan. This project is subject to the contents of that plan. The owner, applicant, developer and plan preparer should be advised of and completely review the goals, priorities (tools) and entire contents of this study, including sub-watershed maps, as layout and design of the proposed project could be affected by and should remain consistent with these items. Refer to the watershed management plan and the associated sub-watershed maps for environmental sensitive areas, features and/or recommendations that may apply to the sub-watershed in which the project area is situated. Some specific items to note include:
 - Subwatershed 205 has the highest quality of any subwatershed within the Powhatan Creek watershed and is classified as sensitive. The streams are rated as having the best stream habitat in the watershed and the subwatershed is classified as a Stream Protection area.
 - Recommendations include: use of Special Stormwater Criteria, cluster or open space design and limiting disturbances to conservation areas and stream valleys. A regional pond facility (R205-4) is targeted for this subwatershed.
 - Adjacent development on the Warhill Tract has been proceeding forward with a stern awareness and conformance to goals, priorities and recommendations of Subwatershed 205 from the approved Powhatan Creek Watershed Management plan. As such, this site was included in overall stormwater master planning associated with the Warhill PPEA and other County Warhill tract development. It was included in postdevelopment drainage assumptions associated with the TNCC site and associated roadway storm drainage systems, the primary storm trunk line (72-inch), pretreatment sediment forebay and upgrades to the County District Park West Pond PC 105.

As such, the Zion Baptist Church expansion is covered for ultimate stormwater quality and quantity control by regional BMP methods consistent with the approved Powhatan Creek Watershed Management Plan; however, the site is still subject to the Virginia Erosion and Sediment Control regulations for onsite erosion and sediment control and Minimum Standard # 19 criteria for onsite drainage system design. As ultimately, runoff from the church expansion area will connect to drainage systems associated with the TNCC, the Third High School and/or

the Warhill PPEA project and will be properly conveyed to the District Park West Pond for stormwater treatment, of primary importance will be to ensure that increased runoff from the site, on an interim basis, does not result in the erosion of existing natural offsite receiving channels until such time as associated offsite drainage improvements are implemented.

4. Provide a large boxed note on the concept plan to indicate that “Stormwater management for this site will be satisfied by master stormwater planning for the Warhill Tract which includes upgrades to the District Park West Pond, County BMP ID Code PC 105.”
5. Provide a note on the concept plan to indicate the church expansion project will be subject to Special Stormwater Criteria.
6. Drainage Plan. This comment is intended to give guidance for the final plan of development and does not pertain to the SUP application. Currently the concept plan shows the entire area to the southwest of the proposed parking area (ie. the parking lot to the east of the existing and proposed building) as being entirely cleared and a meandering stormwater channel being installed. This results in almost one-half acre of clearing for stormwater purposes. It is preferred that more existing indigenous vegetation be preserved in this area and the stormwater system consist of the gravel diaphragm (by the parking lot) to a stormwater conveyance channel (perhaps dry swale) and ending at a level spreader device at the existing low point in topography at the site border. Clearing in this area should be limited to only that necessary to install the stormwater conveyance channel system and level spreader. The level spreader should keep adequate buffer/separation from the existing cemetery. The remaining area to the southwest of the proposed parking area should be left in a natural vegetated state to the greatest extent possible, consistent with performance standards of Section 23-9(b)(1) and (2) of the County’s Chesapeake Bay Preservation ordinance. Some other items of importance that will be expected at the time of plan of development include:
 - An Environmental Inventory for the church expansion area;
 - An Erosion and Sediment Control Plan for the church expansion area including submission of our Division standard design plan checklist;
 - Computations to show drainage plan compliance with Minimum Standard # 19 for onsite stormwater conveyance channel design
 - Adequate plans and details for the gravel diaphragm, conveyance channel and level spreader
 - Compliance with SSC criteria
 - Conformance with assumptions for design of the offsite regional trunk line, forebay and basin which include a limitation from the site of 2.5 acres of drainage area with a runoff coefficient C of 0.90, or equivalent.

DRAFT SUP CONDITIONS

* Notes conditions whose exact wording was approved by the BOS for SUP-24-01 (expired Zion Baptist Expansion). The other conditions are similar in nature but some wording has been updated.

Concept Plan: This Special Use Permit shall be valid for the expansion of the Zion Baptist Church to a maximum of 5,900 square feet and accessory uses thereto as shown on the "Zion Baptist Church Layout and Materials Plan" dated February 3, 2006. Development of the site shall be generally in accordance with the above referenced plan as determined by the Development Review Committee of the James City County Planning Commission. Minor changes may be permitted by the DRC, as long as they do not change the basic concept or character of the development.

*Architecture: The building materials, design, scale and colors of the addition shall be compatible with that of the existing structure. The colors, design, and building materials for the addition shall be submitted to, and approved by, the Planning Director prior to final site plan approval.

Lighting: Any new exterior site or building lighting shall have recessed fixtures with no bulb, lens, or globe extending below the casing. The casing shall be opaque and shall completely surround the entire light fixture and light source in such a manner that all light will be directed downward and the light source are not visible from the side. Fixtures which are horizontally mounted on poles shall not exceed 15 feet in height. No glare defined as 0.1 foot-candle or higher shall extend outside the property lines.

Water Conservation: The owner shall be responsible for developing and enforcing water conservation standards to be submitted to and approved by the James City Service Authority prior to final development plan approval. The standards may include, but shall not be limited to such water conservation measures as limitations on the installation and use of irrigation systems and irrigation wells, the use of approved landscaping materials including the use of drought tolerant plants where appropriate, and the use of water conserving fixtures and appliances to promote water conservation and minimize the use of public water resources.

*Entrance Improvements: Entrance improvements shall meet the requirements of the Virginia Department of Transportation (VDOT) and shall be approved by VDOT prior to final site plan approval.

*Landscaping: A landscaping plan shall be approved by the Planning Director, or his designee, prior to final site plan approval. The owner shall provide landscaping for the area surrounding the future church expansion to mitigate the impact of the expansion on the adjacent property. Landscaping along the Richmond Road Community Character Corridor shall be 125% of ordinance requirements.

*Commencement of Construction: If construction has not commenced on this project within thirty-six (36) months from the issuance of a special use permit, the special use permit shall become void. Construction shall be defined as obtaining permits for building construction and footings and/or foundation has passed required inspections.

*Severance Clause: This special use permit is not severable. Invalidation of any word, phrase, clause, sentence, or paragraph shall invalidate the remainder.

ENVIRONMENTAL DIVISION REVIEW COMMENTS
ZION BAPTIST CHURCH EXPANSION
COUNTY PLAN NO. SP - 36 - 06
May 30, 2006

MDW/SJT

General:

1. A Land-Disturbing Permit and Siltation Agreement, with surety, are required for this project.
2. A Standard Inspection / Maintenance agreement is required to be executed with the County due to the proposed stormwater conveyance systems and Stormwater Management/BMP facilities associated with this project. *(Note: This is required for the two permanent level spreaders as proposed for the project.)*
3. Site Tabulation. Move the site statistics table from Sheet C-5 onto the cover sheet. In one central area, show site area, proposed impervious cover, percent impervious cover (new site) and a disturbed area estimate for the project on the cover sheet. It must be demonstrated that the site imperviousness does not exceed 60 percent.
4. SUP. Provide reference to the Special Use Permit SUP-03-06 for the project as approved on March 14, 2006.
5. Stormwater Note. Although provided on the grading & drainage plan, provide a note on the cover sheet of the drawing set to indicate that "stormwater management for this site is satisfied by master stormwater management planning associated with the Warhill Tract which included upgrades to the District Park West Pond, County BMP ID Code PC 105".
6. Offsite Work. Currently the drawing set shows work on offsite parcels including clearing, grading and installation of temporary erosion and sediment control and permanent drainage facilities. Provide evidence of permission to occupy and disturb the offsite adjacent tract from the parcel owner (GPIN 3210100013, TMB Service Corporation). A Land-Disturbing permit cannot be issued for this project until it is confirmed that the offsite owner gives permission to occupy, disturb and perform these activities or that this parcel now belongs to the church. *(Note: It is our understanding that a portion of this adjacent parcel may have been provided to the church from the County during activities associated with the Warhill PPEA project. If that is the case, the site plan must reflect proper property line and ownership information.)*
7. VSMP. It appears construction activity for the site will exceed 2,500 square feet. Therefore, it is the owner's responsibility to register for coverage under the General Permit for Discharge of Stormwater from Construction Activities, in accordance with current requirements of the Virginia Department of Conservation and Recreation and the Virginia Stormwater Management Program. Visit <http://www.dcr.virginia.gov/sw/vsmp.htm> or contact the DCR Central Office at 804-371-7330 for additional information. *(Note: General note # 22 on the cover sheet of the plans can be modified to reflect information associated with the DCR Virginia Stormwater Management Permit.)*

8. VDOT. It appears a VDOT CE-7 (temporary construction entrance permit) may be required. Contact the Williamsburg Residency, Permits and Subdivisions at 757-253-4832 for further information.
9. Centerville and Richmond Roads. Provide reference on all applicable plan sheets to improvement work being performed on/along Centerville Road and Richmond Road US Route 60 from the Warhill Site Roadways and Improvements (ie. Warhill PPEA project) under County Plan No. SP-61-05. Provide a general note on the plan to indicate that work as proposed for this site may require general coordination with the County and/or the County's agent due to ongoing road improvement activities being performed on or along Richmond and/or Centerville Roads.

Chesapeake Bay Preservation:

10. Although an environmental inventory plan sheet was provided in the plan set, an inventory showing whether or not components as listed under Section 23-10(2) of the Chesapeake Bay Preservation ordinance was not provided/listed. An inventory should list the components, state whether there are impacts or not and quantify impacts (acres, square feet, linear feet, etc.), if applicable.
11. The environmental inventory must show a limit of work (clearing and grading), to include installation of erosion and sediment control measures, BMPs and utilities, consistent with the site erosion and sediment control plan. The limit of work should be clearly transposed onto the inventory sheet so that the development plan's impact to environmentally sensitive areas (components per Section 23-10(2) of the County's Chesapeake Bay Preservation ordinance) can be properly assessed.

Erosion & Sediment Control Plan:

12. Design Checklist. Please provide a completed standard James City County Erosion and Sediment Control and Stormwater Management Design Plan Checklist, specific to this project. The intent of the checklist is to ensure the plan preparer has provided all items necessary for a complete and expeditious review.
13. E&S Narrative. The "offsite areas" and "stormwater runoff" portions of the Erosion and Sediment Control narrative on Sheet C-2 appears to reference a project other than Zion Baptist Church as it refers to Queens Creek, the York River and two onsite bioretention facilities. This questions the validity of the entire narrative as provided and whether any of the information even pertains to this specific project. Check and revise the entire narrative specific to this project.
14. Notes. General notes # 24 and # 25 on Legend and Note Sheet C-1 appear to have information that is not relevant to James City County. Check and revise these notes accordingly.
15. Safety Fence. For maximum protection of existing cemetery areas situated on the site, add safety fence in accordance with Minimum Standard & Spec. 3.01 of the VESCH to the site erosion and sediment control plan, Sheets C-3 and C-7. Safety fence should be used effectively around the cemetery where construction traffic, access or site work, including laydown or storage areas, are in proximity to the cemetery.

16. Sequence of Construction. A sequence of construction (construction and erosion control event schedule) was provided on Sheet C-2. The following comments pertain to the sequence of construction as presented.
 - 16a. If possible, it is preferred that the sequence of construction be moved to erosion and sediment control plan Sheet C-3 or Sheet C-7, rather than hidden on note Sheet C-2.
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19. E&SC Plan. The area situated to the northwest of the new parking area (ie. parking area to the south of the new building expansion) is proposed to be a temporary sediment trap during construction, and then a graded trapezoidal swale and level spreader system following stabilization of the site. Once the trap is removed and the system converted to a swale-level spreader, it will be necessary to provide at least one temporary rock check dam within the swale, until the swale itself is stabilized. Show and label the "temporary check dam" on Sheet C-5.
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