STABILIZATION/PRESERVATION
OF THE
ST. JOHN'S EPISCOPAL CHURCH RUINS

HARPERS FERRY NATIONAL HISTORICAL PARK
FY 2004 -2005

PKG. 320C/PMIS #027506

HISTORIC STRUCTURES RECORD OF TREATMENT



HISTORIC PRESERVATION TRAINING CENTER
Department of Interior
National Park Service
4801A Urbana Pike
Frederick, MD 21704

STABILIZATION/PRESERVATION OF THE
ST. JOHN'S EPISCOPAL CHURCH RUINS

HARPERS FERRY NATIONAL HISTORICAL PARK
FY04/05
PKG. 320C/PMIS #027506

HISTORIC STRUCTURES RECORD OF TREATMENT

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Accounting

STABILIZATION/PRESERVATION
OF THE
ST. JOHN'S EPISCOPAL CHURCH RUINS
PKG. 320C/PMIS #027506

Account	Amount Obligated	Revised Estimate
3064-6424-MAL (FY04)	69,019.00	

Component Completion Report for project:_____

Component Account Costs By Budget Object Class (based on AFS3):

Account	Personal Service Cost	Travel Cost	Contract Work Cost	Contract Number	Supply Cost	Equipment Cost	Other Cost	Total Cost By Account
	48,692.00				3,072.00		17,255.00	69,019.00
Total Component Account Cost								

Account	Amount Obligated	Revised Estimate
3064-6529-MRL (FY05)	112,016.00	

Component Completion Report for project:_____

Component Account Costs By Budget Object Class (based on AFS3):

Account	Personal Service Cost	Travel Cost	Contract Work Cost	Contract Number	Supply Cost	Equipment Cost	Other Cost	Total Cost By Account
	56,434.00	2,022.00			22,990.00	3,906.00	26,664.00	112,016.00
Total Component Account Cost								

Narrative

Narrative Statement

STABILIZATION/PRESERVATION
OF THE
ST. JOHN'S EPISCOPAL CHURCH RUINS

HARPERS FERRY NATIONAL HISTORICAL PARK
FY 04 & FY 05

PKG. 320C/PMIS #027506

Work Order # 3064-6424-MAL (FY04) & 3064-6529-MRL (FY05)

Project Narrative

The overall condition of the stone masonry ruins exhibited accelerated signs of masonry deterioration, multiple sections of wall fall & material separation, absent stones units (voids), mortar loss, open mortar joints, friable mortar, fading mortar washes and volunteer vegetation emergent on all wall sections and elevations of the standing masonry feature.

The first objective of this two-phase preservation project was first to perform the vital masonry repairs to stabilize the weakened & failing Tudor brick arch situated in the remains of the main entryway of the church ruins. During this task, selective disassembly, brick resetting, selective repointing, stone re-setting and weather-proofing tasks were addressed to steady the brick arch and masonry walls adjacent to the brick & stone archways.

The second objective of this project, Phase II, was to continue selective repair/rebuilding of failed wall sections, conduct a comprehensive repointing of approximately 1500 square feet of stone wall joints at all interior & exterior elevations with the primary focus on the elevated (scaffold) East elevation's tower, walls, and corners. Other stabilization tasks included repair & replacement of wall head mortar caps, repair and/or replacement of wood lintels, conservation treatments of plaster remnants on interior surfaces and vegetation mitigation throughout the masonry feature.

Project History

Phase I – September 2003 thru September 2004

Phase I activities were executed during a 3 week period from September 25 - October 16, 2003, completing the masonry repairs necessary to stabilize and repair the fading Tudor brick arch and ancillary selective repointing of the interior and exterior stone work in the adjacent standing walls while the arch was staged with scaffolding. The project was

postponed for the remainder of 2003 due to the winter weather. Work resumed in June 2004 and continued intermittently through September 2004.

Preservation tasks completed during these two periods of masonry maintenance included mobilization, preliminary documentation tasks, and scaffold assembly @ the tower section. Tasks completed during this phases also included;

- Mortar analysis and material mock-ups for review & approval
- Partial selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs)
- Repair and stabilization of the solitary Tudor Brick arch
- Selective repair/rebuild approximately 100 cubic feet of stone wall
- Selective repointing of approximately 1500 square feet of stone wall joints at all standing wall elevations
- Plaster conservation treatments on interior wall sections @ the tower

During the realization of Phase I, it was determined that the scope of work for Phase II would be modified to shift the focus and funding toward a comprehensive stabilization of the masonry walls throughout the feature. All scheduled archeological and landscape work tasks as proposed in the Project Agreement were abandoned to focus on the masonry ruins.

Phase II – June 2005 thru August 2005

Phase II onsite activities were initiated on May 23rd with the delivery and preliminary staging for the system scaffold.

Tasks completed during Phase II at the Episcopal Church Ruins;

- Mobilization, Documentation, Demobilization
- Scaffold Tower Assembly @ tower and adjoined wall sections
- Selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs)
- Supplementary stabilization repairs at the solitary Tudor Brick arch
- Selective repair/rebuild approximately 100 cubic feet of stone walls throughout
- Comprehensive raking, prep & repointing of 1500 +/- square feet of stone wall joints at all standing wall elevations throughout – interior & exterior.
- Plaster conservation treatments on interior wall sections @ the tower section

The Final Inspection was conducted with the HAFE Historical Architect on Monday 8/22/05 @ 9:30 a.m. Scaffold Resources commenced disassembly and removal of the system scaffold promptly on 8/22/05. Identified punch list items were completed the following week.

Selected Photographs



Figure 1: Phase I repairs underway on the Tudor brick arch



Figure 2: Phase I repairs on the brick arch



Figure 3: One photo of the existing conditions of the brick arch @ the spring line.



Figure 4: View of the scaffold assembly and shelter for the Phase I arch repairs – October 2004



Figure 5: Begin Phase II – View of interior conditions during the Preconstruction meeting - April 2005



Figure 6: Interior view of tower ruins – April 2005



Figure 7: View of interior northeast corner – April 2005



Figure 8: View of exterior south & south east elevations – April 2005

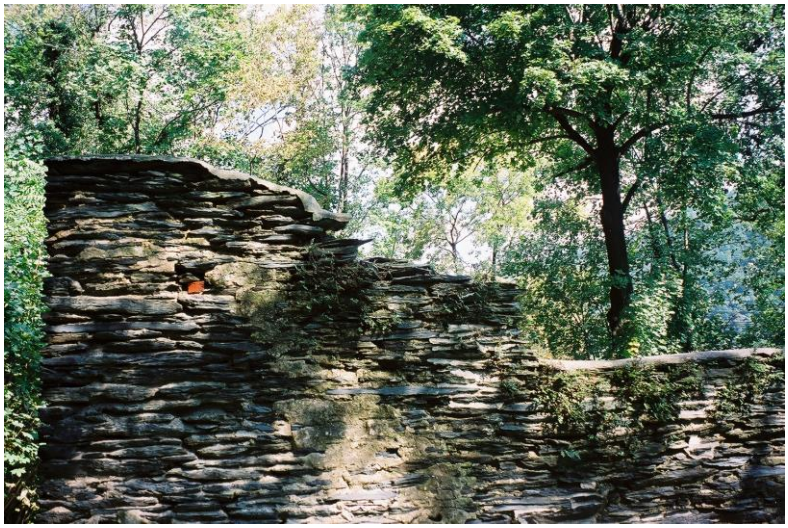


Figure 9: View of exterior southwest corner – April 2005



Figure 10: View of interior southwest corner – April 2005



Figure 11: Systems scaffold assembly to begin Phase II repairs and stabilization tasks – May 2005



Figure 12: View of existing conditions on the interior northeast corner



Figure 13: View of the interior wall conditions adjacent to the stone archway – most cement pointing was removed and replaced with a sympathetic lime mortar re-pointing



Figure 14: View of the wall head conditions prior to removal. All cement mortar cap material was removed and all wall heads and wall sections were disassembled to sound & stable construction bond.



Figure 15: Second view of the wall head conditions prior to stabilization tasks. All cement mortar cap material was removed from all wall heads on the elevated tower section and wall sections were disassembled to sound & stable construction bond. Wall were then rebuilt using the original material & natural hydraulic lime mortar



Figure 16: Wall head, corner rebuild and cement pointing mortar removal tasks underway.



Figure 17: Wall rebuild 90% completed on elevated tower section



Figure 18: Replacement mortar cap installation



Figure 19: Replacement mortar cap completed on elevated tower section above brick and stone arches



Figure 20: View of interior south wall elevation



Figure 21: View of north interior wall section



Figure 22: View of exterior north elevation with systems scaffold



Figure 23: Center exterior wall section on north elevation



Figure 24: Final inspection – northeast interior corner



Figure 25: Final inspection – northwest interior corner



Figure 26: Final Inspection – interior southeast corner



Figure 27: Final inspection – south exterior wall @ center



Figure 28: Final inspection – east south east exterior corner



Figure 29: Final inspection - Paired arches looking in from the southeast.



Figure 30: Final inspection – northeast exterior wall



Figure 31: Final inspection



Figure 32: Final inspection



Figure 25: Cursory inspection January 2007- looking southeast.



Figure 26: Cursory inspection January 2007- looking along south exterior wall.



Figure 27: Cursory inspection January 2007- looking southeast at arch work.

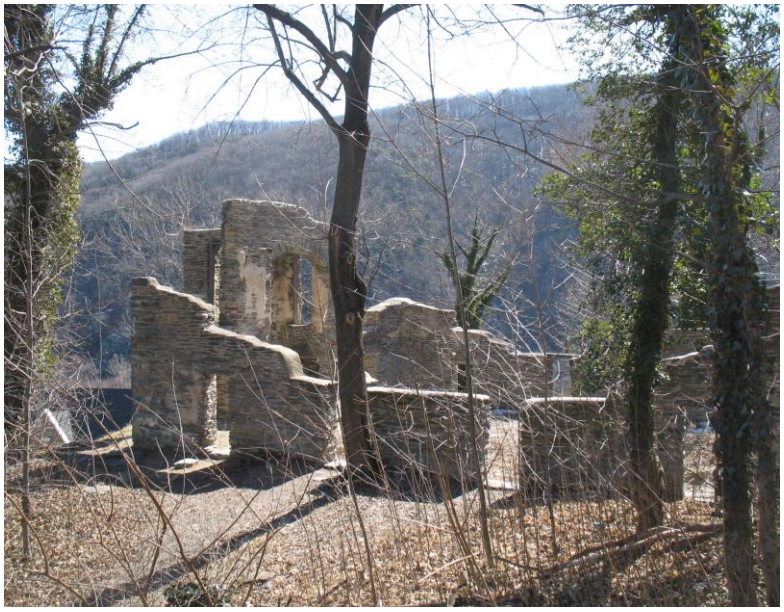


Figure 28: Cursory inspection January 2007- looking south.

Project Agreement

United States Department of the Interior
NATIONAL PARK SERVICE
Historic Preservation Training Center
4801A Urbana Pike, Gambrill House
Frederick, MD 21704-7307

IN REPLY REFER TO:
H30(HPTC)

September 29, 2003

Memorandum

To: Superintendent, Harpers Ferry National Historical Park

From: Superintendent, Historic Preservation Training Center

Ref: Pkg. 320C/PMIS #27506
Stabilization/Preservation of the Episcopal Church Ruins
Harpers Ferry National Historic Park, FY 04

Subject: Transmittal of **FINAL** Project Agreement

Enclosed is the **FINAL** Project Agreement for the referenced project. Since this document serves as the basic agreement between our respective offices, I urge your careful review to ensure that it meets with your expectations and approval.

If we can provide any additional information regarding this document, please do not hesitate to contact either Doug Hicks or Scott Jones, both of the HPTC, at (301) 663-8206.

H. Thomas McGrath

Enclosure

cc:
Peter Dessauer, Historic Architect, HAFE (w/enclosure)
Mike Castagnetto, Chief of Maintenance, HAFE (w/enclosure)
Gar Gauthier, B & U Foreman, HAFE (w/enclosure)
Matt Graves, Cultural Resource Manager, HAFE (w/enclosure)
Mia Parsons, Chief Archeologist, HAFE (w/enclosure)



FINAL PROJECT AGREEMENT

PKG. 320C/PMIS #27506
STABILIZATION/PRESERVATION
OF THE
EPISCOPAL CHURCH RUINS
HARPERS FERRY NATIONAL HISTORICAL PARK
FY04

September 29, 2003

RECOMMENDED:_____DATE:_____
SUPERINTENDENT, HISTORIC PRESERVATION TRAINING CENTER

APPROVED:_____DATE:_____
SUPERINTENDENT, HARPERS FERRY NATIONAL HISTORICAL PARK

Submitted by:
National Park Service
Historic Preservation Training Center
4801-A Urbana Pike
Frederick, Md.

I. DESCRIPTION OF THE PROJECT

The Episcopal Church Ruins are located along the footpath leading up from Lower Town to Camp Hill, halfway between Arsenal Square and the Cemetery, just east of Jefferson's Rock.
The overall objective of this preservation project is to perform selective masonry repairs necessary to 1) stabilize the deteriorating Tudor brick arch, 2) to conduct selective repointing, stone re-setting tasks, weather-proofing of the primary (standing) masonry walls at all elevations and 3) selective landscape & drainage improvements within the ruin grounds.

The overall condition of the stone masonry ruins are exhibiting accelerated signs of masonry deterioration, areas of wall fall & separation, absent stones units (voids), mortar loss, open mortar joints, friable mortar, fading mortar washes and volunteer vegetation is emergent on all sections and elevations of the standing masonry walls.

Urgent consideration and attention is vital for restoration of the solitary Tudor arch located in what was most likely the alter section of the church sanctuary. Advanced attrition and lose of the brick masonry arch (form and brick fabric) is of paramount concern. Restoration repairs will be completed at the arch first order to stabilize this unique and exclusive architectural feature.

NOTE: Archeological assistance on behalf of HAFE should be programmed and scheduled for execution during Phase II in the 3rd quarter of FY 04.

This agreement covers all anticipated stabilization/preservation tasks, for all work at the Episcopal Church Ruins during FY 04, as included in the following scope of work and associated cost estimate. Supporting information for this project was also obtained from the PMIS park funding request for the maintenance and repair of this feature.

II. STRUCTURE DESCRIPTION

The National Park Service initiated (1959) and adopted a policy of archaeological ruin stabilization & preservation management as the preferred treatment for the St. Johns Episcopal Church site, dating 1851 through 1907. The primary focus and responsibility is to sustain the residual masonry ruins form and historic fabric insitu for public interpretation and visitor's safety. The Episcopal Church Ruins are located along the footpath leading up from Lower Town to Camp Hill, halfway between Arsenal Square and the Cemetery, just east of Jefferson's Rock and west of the Catholic Church, in Harpers Ferry National Historical Park. The church ruins command a view of the pedestrian foot path down into Harpers Ferry Lower Town and the Gap at the confluence of the Potomac and Shenandoah Rivers and are on the main walking/hiking route an estimated 400,000 visitors hike each year. The damaging storms, winter snows and unprecedented precipitation occurring in 1996 had an adverse effect on all the ruins and stone walls in Harpers Ferry NHP, namely those located on Virginius Island. In September of 2003, Tropical Storm Isabel also impacted the Harpers Ferry Park with

heavy rains and high river levels, mandating evacuation of the lower town facilities and exhibits.

III. SCOPE OF THE PROJECT

The Historic Preservation Training Center (HPTC) proposes to execute this project in two phases, both to be performed in FY 04 under this Project Agreement.

Phase I will first and foremost focus on the immediate repair and stabilization of the Tudor brick arch. During the execution of the arch repairs, rudimentary investigation and examination of the resource will be conducted, necessary to ascertain stabilization and treatment options, alternatives and/or recommendations for the stabilization of all primary exterior walls and any interior or secondary masonry walls associated with the church ruins. Associated archeological surveys/monitoring will also be coordinated (as needed) with determined vegetation removal and any related excavation activities to be performed.

Information gathered during Phase I will be used to develop precise treatments for Phase II stabilization of the primary and secondary stone walls, anticipated to be programmed for execution during the 3rd quarter of FY 04. This two-phase method will allow the HPTC to fully conduct a structural consultation survey, present sound treatment recommendations, monitor the resource, coordinate tasks with HAFE staff, and ultimately insure that the preservation treatments are completed within the available funding limit.

HPTC will work within the Secretary of the Interior's Standards for the Treatment of Historic Properties as preservation specialists to complete the following stabilization tasks at the Episcopal Church Ruins. When complete, repairs performed will have stabilized the existing ruins while preserving the enduring historic form.

Phase I - First Quarter - FY04

- Mobilization, Documentation, Demobilization
- Scaffold Tower Assembly
- Mortar analysis and material mock-ups for approval
- Selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs)
- Repair and stabilization of the solitary Tudor Brick arch

Phase II - Third Quarter - FY04

- HAFE Archeological Assistance, Field Investigation & Planning
- Removal of encroaching vegetation, trees, roots and/or tree materials (stumps) within the church sanctuary area as well as along determined sections of the exterior perimeter walls @ all elevations

- Recovery of original building stone units (wall fall) for primary wall repair tasks - TBD!
- Selective repair/rebuild approximately 100 cubic feet of stone wall
- Continued selective repointing of approximately 1500 square feet of stone wall joints at all elevations
- Evaluate, test and execute mortar wash/cap techniques and alternatives @ primary exterior walls for storm water shed - (rough racking)
- Remedy any site earth deficiencies, landscape improvements and complete final site grading (HAFE maintenance assistance)
- Improve drainage and landscape throughout and about the ruins exhibit grounds

PHASE I - FIRST QUARTER FY04

TASK #1: Mobilization/ Documentation & Demobilization

MOBILIZATION:

- Assemble and transport tools and materials to a HAFE designated staging area at the project site.
- Establish office and storage facilities as a base of operation in the park at an approved location and contract all necessary services required for operations.
- Organize tools, equipment and materials to facilitate the work progression
- Designate work area with safety signage defining hard hat areas of work.
- Prepare project site safety analysis plan.
- Post hard hat and any additional signage as may become necessary
- Execute necessary vegetation, tree and stump removal as directed and approved by HAFE
- Document existing site and feature conditions prior to HPTC tasks initiation using photographs, field sketches, and narratives.

DOCUMENTATION:

HPTC will document all existing conditions and on-going stabilization work tasks with 4x6 color photographs with negatives and electronic photo disk. Project documentation will include weekly reports, correspondence, compliance, photographic narrative, archival research, field sketches, measured drawings, material and vendor list, and any related services. This task is accomplished on a daily basis under the duties and responsibility of the Exhibits Specialist/Project Leader.

DEMOBILIZATION:

Upon completion of all work, pedestrian restraints and excess materials will be removed. HPTC tools and equipment will be loaded onto vehicles and made ready for transport.

The work site and adjacent area will be policed for trash and any construction related items.

Following completion of all tasks the immediate grounds will be graded, grass seeded and returned to the existing conditions prior to construction unless directed by the Park to do otherwise. All work sites and staging areas will be restored to an acceptable condition at the completion of the work comparable to the existing before project inception.

TASK #2: Scaffold Tower Assembly

HPTC will transport and assemble all required scaffold for worker access to the arch elevation. This task will be completed with two (2) independent tower assemblies, (14' x 25') with erection of towers on the building interior and exterior elevations. The towers will then be secured together creating a catwalk system, providing workers access through and around the arch feature. Scaffold assembly at this location will also aid with additional inspections and anticipated repointing repairs on the adjacent wall sections.

TASK #3: Brick Mending Repairs @ Tudor Altar Arch, selective repointing @ tower section & timber replacements/repairs

HPTC will research, develop and apply traditional masonry building techniques while performing stabilization repairs to the arch work. This will include replicating the arch brickwork bonding patterns and utilizing lime mortars to reproduce and/or replicate the historic mortar formula. Selective repointing tasks will also be executed within the tower area with use of staged scaffold system.

- * Mortar analysis and material mock-ups for approval
- Brick selection from HAFE bone yard - Virginius Island salvage brick
- Centering fabrication for arch repair & form
- Selective disassembly of loose brick units @ arch intrados
- Repair the solitary Tudor Brick arch – insitu
- Selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs) Determination for repair or replacement will be determined in the field by HPTC.

* The HPTC will analyze mortar samples to determine proportions of constituent parts and to develop a mortar mix that will match the existing in color and texture. The strength of the proposed mix will be in the range of a Type 'N' which has a compressive strength of 350 -650lbs. / in^2. The analysis process is completed through a chemical or acid digestion of the representative mortar selected.

PHASE II - THIRD QUARTER FY04

Task #1: Archeological Assistance, Field Investigation & Planning

Phase II will determine stabilization treatments for the primary exterior walls of the church ruins and to obtain any additional or pertinent information regarding landscape improvements. Tasks will include a review of archival photographs and documents @ HAFE, an archeological survey of the area and adjacent areas to the exposed ruin, site mapping, site excavation tasks and landscape treatments recommendations that are appropriate, necessary and within the available funding.

Field investigation will involve arranging and coordinating the efforts of the HAFE archeologists and any necessary "consulting services". Archeological work and excavation efforts will focus on the 2000 square foot area (approx.) within the sanctuary area of the church and a defined boundary to the exterior of the standing exterior (primary) walls for any stump/tree removal and building material collection & recovery. The involvement of these disciplines will be required in order to:

- Assist, monitor and record the excavation and unearth/recovery process, if determined feasible or necessary
- Monitor impacts on possible sub-surface features during any excavation and stump/tree removals
- Prepare design and treatment recommendations for landscape and drainage improvements (compactable fill)

NOTE: The limits and restrictions of the excavation tasks will be directed and monitored by the HAFE archeologist during the archeology site survey and field investigation. HPTC preservation specialists will assist with these activities in order to insure that treatments are appropriate and within available funding.

TASK #2: Selective Repointing of Standing Ruin Wall Sections

Selectively rake and repoint both the interior and exterior of the primary standing ruin walls. Examination and inspection for deficiencies or failures will be conducted on all exterior (primary) and interior (secondary) walls associated with the church ruins.

All new pointing mortar will be a Type 'N' strength mix that will match the historic mortar in color, texture, and joint profile. The removal of failed mortar shall be accomplished using both hand and mechanical tools. The use of mechanical tools will be determined in the field and conducted only by qualified individuals. Mechanical methods may be employed only when guarantees can be made that adjacent stonework will not be damaged.

TASK #3: Selective Re-Build/Repair Ruin Walls

This task will involve selective repairs of the primary (exterior) and secondary (interior) masonry walls associated with the church ruins. This task will include stone cutting, shaping, stone tooling and stone replacement/setting for missing or absent wall stones, utilizing native salvaged stone only. Bonding patterns, coursing, and mortar joint details exhibited in the existing primary exterior wall sections will be used as the standard for any wall mending repairs and finished repointing.

TASK #4: Landscape Improvements

This task will involve re-landscaping the 2000 sq.ft. area within the sanctuary area of the church ruins resulting from any archeological site excavation work, stump/tree removal or building material collection (wall fall). Landscape improvements will be conducted following the demobilization and removal of all HPTC equipment and supplies. Landscaping improvements will involve establishing a grade that will improve surface water runoff, maintaining masonry feature exposures for interpretative purposes, and to provide protection of subsurface features. Surface grading will be performed by hand and using small mechanized equipment (if necessary) to create grades that will encourage surface water run-off from within the church ruins. Back filling will be accomplished through multiple lifts with each lift being compacted. Excavated or disturbed areas will be back-filled and restored to a maintainable condition. Determinations of final grading and appearance will be made in the field and approved by HAFE.

Note: Treatment of the surface, such as geo-textiles, wood chips, trail surface treatments, fencing, hand rails etc... will be partly the responsibility of HAFE Park Estimated funding for completion of these tasks is included in the cost estimate section of this document.

IV. DATA COLLECTION

The following documents provided historical, existing condition assessments, structure specific recommendations, and management guidelines for this project:

PMIS Funding Request # 27506 – FY03

V. COMPLIANCE

Section 106 clearance for the proposed project will have “no effect” on cultural resources and is considered a programmatic exclusion under the 1995 Nationwide Programmatic Agreement among the NPS, Advisory Council and the National Conference of State Historic Preservation Officers (West Virginia SHPO). This project is excluded under Part IVB, No. 9, and no further clearance is necessary. HAFE shall provide a single hard copy of each clearance to HPTC prior to start of work.

VI. PROJECT COORDINATION

The successful execution of this project will depend upon the timely completion of any

and all necessary actions as outlined by each of the following parties to this Project Agreement:

HPTC: Review existing documentation and reports and prepare a Project Agreement and cost estimate describing project work.

Coordinate phasing of the work performed by the HPTC preservation team.

Conduct preconstruction, final inspection, and other such on-site, project-related meetings as required.

Provide project supervision for all work performed by the HPTC's preservation team.

Provide crafts people to perform all construction activity outlined in Section VIII, Products.

Provide weekly reports on project progress and activities.

Provide proper disposal facilities for and periodic collection of all construction debris associated with this project.

Maintain a record of treatment and all documentation on all phases of the subject work. Prepare and distribute a record of treatment within six months of the date of the final inspection.

HAFE: Consistent with the provisions of this Project Agreement, provide access to the project site for the day-labor crew and any related contract or supply or service contract associated with the project work or as stipulated at the preconstruction conference.

Provide any and all necessary clearances and/or permits for the project including federal, state, and local permits required. Prepare all compliance documents as required by the Historic Preservation Act of 1966, as amended and NEPA of 1969.

Review, comment, and approve/reject all project submittals in a timely manner

Provide **(approve)** replacement stone and brick that match in color, texture, and size.

Provide access to a clean water source to be used for project-related purposes.

Designate a single administrative contact for the project duration

Identify individuals and schedule availability for participation of Park personnel in the HPTC's Preservation Work Assignment Training Program, if desired (see attached program description)

Matters regarding site-related issues (access, closures, signing, etc.) will be determined by the HPTC and HAFE. The HPTC's project leader may vary from time-to-time, but at all times a designated person will retain on-site authority and serve as the immediate HPTC project contact.

HPTC project leaders do not have approval authority on matters concerning time, money, scope of work, or design changes. Matters regarding project objectives and/or design-related issues
will be determined by approved compliance and design documents; any unresolved issues or changes will be handled between HAFE and the HPTC's supervisory staff.

Matters regarding logistics and/or techniques of project execution will be determined by the HPTC. Further refinement of these roles and responsibilities will be discussed at the preconstruction meeting.

VII. SAFETY

Worker and visitor safety is the number one concern within the NPS. Safety awareness and compliance therefore shall be both a team and individual concern, with all parties striving to attain a safer work environment.

This HPTC/HAFE project is a work zone and is therefore designated a hardhat area in compliance with OHSA regulations. All persons entering the designated work area will wear an approved hard hat at all times. The HPTC section chiefs, namely William Hose, Christopher McGuigan or Christopher Robinson are the only individuals who may grant exemption or exception to this written HPTC policy.

Project leaders shall conduct “tailgate safety meetings” weekly with workers assigned to the project.

The HPTC will conduct all work activities consistent with applicable health and safety regulations. All HPTC project work shall be conducted in accordance with OSHA regulations – 29 CFR Part 1926.

VIII. PRODUCTS

Products to be furnished by the agreements within this Project Agreement from the HPTC to the HAFE are:

1. Completion of preservation tasks as detailed in Section II of this Project Agreement.

2. Preparation of a Record of Treatment for this project, both Phase I and Phase II, in accordance with Director's Order (DO) #28. The Record of Treatment includes account data, correspondence, color photographs, sketches, weekly reports, a narrative outlining the course of work, conditions encountered, and materials used.

The HPTC shall provide limited distribution of the Record of Treatment. Broad distribution of the Record of Treatment, as outlined in Appendix D, DO#28, shall be the responsibility of the Park. The HPTC shall provide the HAFE Program Manager with the Record of Treatment prepared in a CD ROM format. Included in this document will be select scanned and digital photographic images. All original photographs and negatives will be packaged separately in a loose-leaf binder and presented to the HAFE Park for their library records.

The HPTC shall retain an electronic copy with duplicates of all photographs for the HPTC library. The HPTC shall distribute a CD ROM copy of the Record of Treatment report to the HPTC Deputy Superintendent, the designated Project Leader, the Harpers Ferry Center Library, the DSC Technical Information Center and respective park Regional Office.

IX. ESTIMATED SCHEDULE

Draft Project Agreement:	September 25, 2003
Final Project Agreement:	October 2003
Project Start Date Phase I:	October 1, 2003
Project Completion Date Phase I:	November 20, 2003
Project Start Date Phase II:	April-May 2004
Project Completion Date Phase II:	June 2004
Distribute Project Record:	December 2004

X. PROJECT TEAM

HPTC:
Chris Robinson, Project Supervisor
Scott Jones, Project Manager/ Project Leader

HAFE:
Peter Dessauer, Historic Architect, HAFE
Michael Castagnetto, Chief of Maintenance, HAFE
Mia Parsons, Chief Archeologist, HAFE

Steve Lowe, Landscape Architect, HAFE
Matt Graves, Chief of Interpretation, HAFE

XI. COST ESTIMATE

NOTE: HPTC's salaries are calculated on a pay period basis. The number of pay periods is based upon an estimate of the total amount of hours required for each team member to complete the required project tasks. The hourly rate for each occupation is determined by combining the direct hourly rate plus benefits with a prorated amount for the indirect costs of annual and sick leave, holidays, and training time.

Phase I & II combined total – Class "C" estimated @ $185,097)

PHASE I - FIRST QUARTER FY04

TASK #1: Mobilization/ Documentation and Demobilization

Labor:	
(1) Exhibits Specialist @ 2 wks	$ 3,556
(1) Preservation Specialist @ 2 wks	$ 2,736
(1) Maintenance Worker @ 2 wks	$ 2,360
(1) Mason @ 1 wks	$ 1,656
SUBTOTAL	**$ 10,308**

TASK #2: Scaffold Tower Assembly

Labor:	
(1) Exhibits Specialist @ 1 wk	$ 1,778
(2) Maintenance Worker @ 1 wk	$ 1,180
(1) Mason @ 1 wk	$ 1,656
SUBTOTAL	**$ 5,794**

TASK #3: Brick Mending Repairs @ Tudor Altar Arch, selective repointing @ tower section & timber replacements/repairs

Labor:	
(1) Exhibits Specialist @ 3 wks	$ 5,334
(1) Preservation Specialist @ 3 wks	$ 4,260

(1) Maintenance Worker @ 3 wks	$ 3,541
(1) Mason @ 3 wks	$ 4,968
SUBTOTAL	**$ 18,103**

ITEM #1: PHASE I - Project-Related Costs

NPS Vehicles/Motor Pool	$ 1,750
Tool Maintenance & Replacement	$ 1,000
Masonry Materials	$ 2,500
Equipment Rentals (Vegetation Removal-task I phase I)	$ 9,500
Project Supervision @ 2 wk	$ 4,160
SUBTOTAL:	**$ 18,910**

COST ESTIMATE SUMMARY – PHASE I

TASK #1…..…….…..…… $ 10,308
TASK #2……..…..…… $ 5,794
TASK #3……$ 18,103

ITEM #1A…….……$ 18,910

SUBTOTAL	$ 53,115
Overhead	**$ 15,935**
TOTAL	**$ 69,050**

PHASE II - THIRD QUARTER FY04

Task #1: Archeological Assistance, Field Investigation & Planning

HAFE Archeological Monitoring @ 2 weeks	$ 7,500

(1) Exhibits Specialist @ 2.5 wks	$ 4,445
Structural Engineer Consultation Services @ 1job	$ 2,500
SUBTOTAL	**$ 14,445**

TASK #2: Selective Repointing of Standing Ruin Wall Sections

Labor:	
(1) Exhibits Specialist @ 3 wks	$ 5,334
(1) Preservation Specialist @ 3 wks	$ 4,260
(1) Maintenance Worker @ 3 wks	$ 3,541
(1) Mason @ 3 wks	$ 4,968
SUBTOTAL	**$ 18,103**

TASK #3: Selective Re-Build/Repair Ruin Walls

Labor:	
(1) Exhibits Specialist @ 3 wks	$ 5,334
(1) Preservation Specialist @ 3 wks	$ 4,260
(1) Maintenance Worker @ 3 wks	$ 3,541
(1) Mason @ 3 wks	$ 4,968
SUBTOTAL	**$ 18,103**

TASK #4: Landscape Improvements

Labor:	
(1) Exhibits Specialist @ 2 wks	$ 3,556
(1) Preservation Specialist @ 2 wks	$ 2,734
(1) Maintenance Worker @ 2 wks	$ 2,360
SUBTOTAL	**$ 8,650**

ITEM #1B: PHASE II - Project-Related Costs

NPS Vehicles/Motor Pool	$ 3,406
Tool Maintenance	$ 1,320
Masonry Materials	$ 2,500

Landscape Improvements (Compactable fill, tamper equipment, tread materials)	$ 15,000
Preparation of Record of Treatment	$ 1,500
Project Supervision @ 3 wk	$ 6,240
SUBTOTAL:	**$ 29,966**

COST ESTIMATE SUMMARY – PHASE II

TASK #1…..…….…..…… $ 14,445
TASK #2……..…..…… $ 18,103
TASK #3……$ 18,103
TASK #4……$ 8,650

ITEM #1B…….……$ 29,966

SUBTOTAL	$ 89,267
Overhead	**$ 26,780**
TOTAL	**$ 116,047**

XII. TRAINING

It is the objective of the HPTC to expand our programs by providing opportunities for all NPS employees to receive training, which increases their appropriate levels of sensitivity and responsibility in the recognition and implementation of historic preservation of cultural
resources. The focus of HPTC's training is on work-based learning and skill improvement.

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3. To selectively remove and replace deteriorated brick using appropriate methods and techniques.

4. To document, identify failures, selectively dismantle, and reconstruct failed masonry structures while preserving the historic appearance and architectural details.

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Design Change Approval #: Date of Submittal:

Park/Area: Drawing/Specification #:

Project Supervisor:
Project Leader:

Reference (Approval specification, detail or page # you propose to change)

Proposed Change (Brief description of change with detail attached if necessary)

Cost Estimate

Discussion (Who?, What?, Where?, When?, and How? Add comments and/or follow-up.

Recommended by:_____ Date:
Initiator

Concur:_____ Date:
Project Supervisor

Concur: _____ Date:
Assistant Superintendent, HPTC

Concur: _____ Date:
Superintendent (Optional)

Approved:_____ Date:
Regional Historical Architect

United States Department of the Interior
NATIONAL PARK SERVICE
Historic Preservation Training Center
4801A Urbana Pike, Gambrill House
Frederick, MD 21704-7307

IN REPLY REFER TO:
H30 (HPTC)

January 13, 2005

Memorandum

To: Superintendent, Harpers Ferry National Historical Park

From: Superintendent, Historic Preservation Training Center

Ref: Pkg. 320C/PMIS #27506
Stabilization/Preservation of the Episcopal Church Ruins
Harpers Ferry National Historic Park, FY04

Subject: Transmittal of **FINAL Addendum** to the Project Agreement

Enclosed is the **FINAL** Addendum to the Project Agreement for the referenced project. All review comments received from your staff have been incorporated into this document. Since this document serves as the basic agreement between our respective offices, I urge your careful review to ensure that it meets with your expectations and approval. Upon review and approval of this document, please sign the cover sheet and forward the cover page to our office for distribution.

If we can provide any additional information regarding this document, please do not hesitate to contact either Doug Hicks or Scott Jones, both of the HPTC, at (301) 663-8206.

H. Thomas McGrath

Enclosure

cc:
Peter Dessauer, Historic Architect, HAFE (w/enclosure)
Mike Castagnetto, Chief of Maintenance, HAFE (w/enclosure)

Gar Gauthier, B & U Foreman, HAFE (w/enclosure)
Dennis Frye, Chief of Cultural Resources, HAFE (w/enclosure)
Mia Parsons, Chief Archeologist, HAFE (w/enclosure)



FINAL ADDENDUM
PROJECT AGREEMENT
PHASE II

PKG. 320C/PMIS #027506
STABILIZATION/PRESERVATION
OF THE
ST. JOHNS' EPISCOPAL CHURCH RUINS

HARPERS FERRY NATIONAL HISTORICAL PARK
FY 05

January 12, 2005

RECOMMENDED: _____DATE:_____
SUPERINTENDENT, HISTORIC PRESERVATION TRAINING CENTER

CONCUR:_____DATE:_____
HISTORIC ARCHITECT, HARPERS FERRY NATIONAL HISTORICAL PARK

APPROVED: _____DATE:_____
SUPERINTENDENT, HARPERS FERRY NATIONAL HISTORICAL PARK

Submitted by:
National Park Service
Historic Preservation Training Center
4801-A Urbana Pike
Frederick, Md. 21704

I. DESCRIPTION OF THE PROJECT

This document serves as an Addendum to the Final Project Agreement that was issued and approved in September 2003. The intent of this addendum is to better define the scope of work for Phase II and update the cost estimate for the revised scope of work. The Final Project Agreement outlined a scope of work, cost estimate, and schedule of work anticipated at that time. Tasks within this Final Project Agreement were divided into two distinct phases of work. Phase I of this project was initiated in the first quarter of FY-04 and continued through the fiscal year. During this initial phase of work and subsequent further investigation and evaluation it was determined that the scope of work needed to be modified in order to address the Ruins greatest needs. This phase of the project is a continuance of masonry stabilization work and repairs needed to further preserve and protect the Episcopal Church Ruins at Harpers Ferry National Historic Park and shall be regarded as Phase II of this two-phase project.

The Final Project Agreement, dated September 29, 2003**,** was proposed with the intention of executing two separate project phases over a two year period of time. Total project costs were estimated and approved at $183,207. In FY-04, Phase I was funded in the amount of 69,050.

Phase I was executed during a 3 week period from September 25 - October 16, 2003, completing the masonry repairs necessary to stabilize and repair the deteriorating Tudor brick arch and partially completing the selective repointing of the interior and exterior stone work in the adjacent standing walls while staged with scaffolding. The project was postponed for the remainder of 2003 due to winter weather conditions. Work resumed in June 2004 and continued through September 2004.

Preservation tasks completed during these two periods included:

- Mobilization, Documentation, Demobilization
- Scaffold Tower Assembly @ tower
- Mortar analysis and material mock-ups for approval
- Partial selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs)
- Repair and stabilization of the solitary Tudor Brick arch
- Selective repair/rebuild approximately 100 cubic feet of stone wall
- Selective repointing of approximately 1500 square feet of stone wall joints at all standing wall elevations
- Plaster conservation treatments on interior wall sections @ the tower

During Phase I of this project it was determined that the remaining wall sections required a more comprehensive stabilization effort than what was initially forecast. This is particularly the case along the East elevation with its high tower and arched opening. After further investigation of the masonry components and evaluation of the ongoing treatments it was agreed that future phases should focus on the masonry walls above grade. In order to make resources available for this work, tasks associated with additional non-essential archeological work and landscape improvements have been struck from the scope of work.

II. STRUCTURE DESCRIPTION

The St. Johns Episcopal Church remains in a state of ruin. The structure is without a roof system and consists of 4 primary walls constructed of local Harpers Phylite rubble masonry. The East elevation contains the greatest amount of historic fabric, rising approximately 20' high and containing a Tudor arched opening. The remaining elevations range between 6' and 10' in height. Fenestrations are void of windows and doors, wall heads are exposed, and the interior space is littered with wall fall stone.

The National Park Service initiated (1959) and adopted a policy of archaeological ruin stabilization & preservation management as the preferred treatment for the St. Johns Episcopal Church site, dating 1851 through 1907. The primary focus and responsibility is to sustain the residual masonry ruins form and historic fabric insitu for public interpretation and visitor's safety. The Episcopal Church Ruins are located along the footpath leading up from Lower Town to Camp Hill, halfway between Arsenal Square and the Cemetery, just east of Jefferson's Rock and west of the Catholic Church, in Harpers Ferry National Historical Park. The church ruins command a view of the pedestrian foot path down into Harpers Ferry Lower Town and the Gap at the confluence of the Potomac and Shenandoah Rivers and are on the main walking/hiking route that an estimated 400,000 visitors hike each year.

The structure exhibits a variety of deficiencies. Mortar joints have failed providing avenues for moisture infiltration and purchases for vegetation, wall coping is deteriorated allowing moisture to enter the core of the walls, wood lintels have failed or are missing, isolated areas of masonry have failed and become displaced.

III. SCOPE OF THE PROJECT

The Historic Preservation Training Center (HPTC) proposes to complete this second and final phase of this project during FY 05.

HPTC will work within the Secretary of the Interior's Standards for the Treatment of Historic Properties as preservation specialists to complete the following stabilization tasks at the Episcopal Church Ruins. When complete, repairs performed will have stabilized the existing ruins while preserving the enduring historic form.

Tasks to be completed during Phase II will include the following

- Continue selective repair/rebuilding of failed wall sections
- Continue selective repointing of approximately 1500 square feet of stone wall joints at all elevations with priority placed on the East elevation's tower, walls, and corners.
- Repair/replace mortar cap along wall heads.
- Repair/replace wood lintels as required.
- Conserve plaster remnants on interior surfaces.
- Site vegetation control during HPTC occupation.

TASK #1: Mobilization/ Documentation & Demobilization

MOBILIZATION:

- Re-assemble and transport tools and materials to a HAFE designated staging area at the project site.
- Re-establish office and storage facilities as a base of operation in the park at an approved location and contract all necessary services required for operations.
- Organize tools, equipment and materials to facilitate the work progression
- Designate work area with safety signage defining hard hat areas of work.
- Prepare project site safety analysis plan.
- Post hard hat and any additional signage as may become necessary
- Document existing site and feature conditions prior to HPTC tasks initiation using photographs, field sketches, and narratives.

DOCUMENTATION:
HPTC will document all existing conditions and on-going stabilization work tasks with 4x6 color photographs with negatives and electronic photo disk. Project documentation will include weekly reports, correspondence, compliance, photographic narrative, archival research, field sketches, measured drawings, material and vendor list, and any related services. This task is accomplished on a daily basis under the duties and responsibility of the Exhibits Specialist/Project Leader.

DEMOBILIZATION:
Upon completion of all work, pedestrian restraints and excess materials will be removed. HPTC tools and equipment will be loaded onto vehicles and made ready for transport. The work site and adjacent area will be policed for trash and any construction related items.

Following completion of all tasks the immediate grounds will be graded, grass seeded and returned to the existing conditions prior to construction unless directed by the Park to do otherwise. All work sites and staging areas will be restored to an acceptable condition at the completion of the work comparable to the existing before project inception.

TASK #2: Scaffold Assembly

HPTC will coordinate and oversee a contract for the erection of a scaffolding system that will provide worker access to all surfaces of the East elevation and adjoining wall sections of the North and South elevations. This scaffolding will be erected independent from the Ruins and meet all OSHA requirements. Scaffolding along these walls will allow for further inspections and the completion of a comprehensive repointing campaign.

In addition to the contracted services the HPTC will independently erect scaffolding along the remaining elevations in order to complete the required repointing of these elevations, perform necessary repairs to masonry, and implement plaster conservation efforts. The HPTC will also install systems to prevent the public from gaining access to the scaffolding and screen scaffolding from the public.

TASK #3: Selectively Repair and Repointing of Standing Wall Sections

This task will involve a variety of tasks aimed at correcting deficiencies found within the masonry walls and preventing further deterioration. Work will be conducted on all elevations with a priority placed on the East elevation's tower, walls, and corners. Examination and inspection for failures will be conducted on all exterior (primary) and interior (secondary) walls associated with the church ruins. This task will initially focus on the East elevation. When completed work will move along the North and South elevations. The West elevation is essentially complete following Phase I work. Several areas, primarily at the fenestrations, exhibit displaced or missing masonry units, undermining at grade, and exposed wall heads. When determined necessary, wall sections will be repaired and rebuilt utilizing native stone salvaged from the surface of the ruins site. This task may include additional disassembly to stable stone work, as well as stone cutting, shaping, and tooling. Bonding patterns, coursing, and mortar joint details exhibited in the existing wall sections will be used as the standard for any wall mending repairs and finished repointing.

A comprehensive repointing campaign will be undertaken as part of this task. All open or failing mortar joints will be raked to an appropriate depth and repointed with the approved mortar recipe. Joints will be slightly relieved and receive a brushed or scratched finish. All new pointing mortar will be a Type 'N' strength mix that will match the historic lime mortar in color, texture, and joint profile. The removal of failed and deteriorated mortar shall be accomplished using both hand and mechanical tools. The use of mechanical tools will be determined in the field and conducted only by qualified individuals. Mechanical methods may be employed only when guarantees can be made that adjacent stonework will not be damaged. Modern Portland cement based repairs will be left intact if joints are determined to be serving their intended purpose.

Wall heads will be repaired as necessary. Currently the wall heads have been treated with a Portland cement based mortar wash. In some cases this wash has cracked and/or become dislodged. If determined to be unsound the existing washwill be removed and replaced.

If sound but cracked, cracks will be chased and in-filled with mortar. In areas that require modifications to promote moisture run-off, additional stone will be placed prior to the replacement of the wash.

The repair and/or replacement of wood components (lintels, nailers, jams) will also be addressed under this task. Voids in the masonry walls created by the absence of wood components will be infilled with rough sawn oak material. Wood components will be treated with borates prior to installation. Dimensions of the components will be determined using existing components. Determination for repair or replacement will be determined in the field by HPTC.

TASK #4: Plaster Conservation

HPTC will research, develop and apply traditional masonry techniques while performing stabilization/conservation repairs to the historic plaster work remaining on both the interior & exterior walls. The plaster is currently in a very fragile state and is eroding quickly. HPTC has suggested treating the plaster work by first edge pointing all areas (lime mortar) followed by an application of lime wash and/or a chemical-based consolidator. HAFE has agreed that treatment of the plasterwork was necessary and approved the use of both traditional and modern products for testing purposes. During Phase I of this project the HPTC placed two test panels on small areas at the interior of the Southwest corner. One panel was first edge pointed and then treated with a traditional lime wash. The other was also edge pointed and treated with a silan based consolidant. These two areas will serve as test panels for determining the effectiveness and appropriateness of both materials. Prior to executing this work HAFE representatives will be briefed on the findings of these test panels. All salvageable plaster remnants will be treated by the approved method.

IV. DATA COLLECTION

The following documents provided historical, existing condition assessments, structure specific recommendations, and management guidelines for this project:

PMIS - Funding Request # 27506 – FY03
HPTC - Weekly Reports #1-10, FY04

V. COMPLIANCE

Section 106 clearance for the proposed project will have “no effect” on cultural resources and is considered a programmatic exclusion under the 1995 Nationwide Programmatic Agreement among the NPS, Advisory Council and the National Conference of State Historic Preservation Officers (West Virginia SHPO). This project is excluded under Part IVB, No. 9, and no further clearance is necessary. HAFE shall provide a single hard copy of each clearance to HPTC prior

to start of work.

VI. PROJECT COORDINATION

The successful execution of this project will depend upon the timely completion of any and all necessary actions as outlined by each of the following parties to this Project Agreement:

HPTC: Review existing documentation and reports and prepare a Project Agreement and cost estimate describing project work.

Coordinate phasing of the work performed by the HPTC preservation team.

Conduct preconstruction, final inspection, and other such on-site, project-related meetings as required.

Control all unwanted vegetation growth through the course of the project.

Provide project supervision for all work performed by the HPTC's preservation team.

Provide crafts people to perform all construction activity outlined in Section VIII, Products.

Provide weekly reports on project progress and activities.

Provide proper disposal facilities for and periodic collection of all construction debris associated with this project.

Maintain a record of treatment and all documentation on all phases of the subject work. Prepare and distribute a record of treatment within six months of the date of the final inspection.

HAFE: Consistent with the provisions of this Project Agreement, provide access to the project site for the day-labor crew and any related contract or supply or service contract associated with the project work or as stipulated at the preconstruction conference.

Provide any and all necessary clearances and/or permits for the project including federal, state, and local permits required. Prepare all compliance documents as required by the Historic Preservation Act of 1966, as amended and NEPA of 1969.

Review, comment, and approve/reject all project submittals in a timely

manner

Provide replacement stone that match in color, texture, and size.

Provide access to a clean water source to be used for project-related purposes.

Designate a single administrative contact for the project duration

Identify individuals and schedule availability for participation of Park personnel in the HPTC's Preservation Work Assignment Training Program, if desired (see attached program description)

Matters regarding site-related issues (access, closures, signing, etc.) will be determined by the HPTC and HAFE. The HPTC's project leader may vary from time-to-time, but at all times a designated person will retain on-site authority and serve as the immediate HPTC project contact.

HPTC project leaders do not have approval authority on matters concerning time, money, scope of work, or design changes. Matters regarding project objectives and/or design-related issues
will be determined by approved compliance and design documents; any unresolved issues or changes will be handled between HAFE and the HPTC's supervisory staff.

Matters regarding logistics and/or techniques of project execution will be determined by the HPTC. Further refinement of these roles and responsibilities will be discussed at the preconstruction meeting.

VII. SAFETY

Worker and visitor safety is the number one concern within the NPS. Safety awareness and compliance therefore shall be both a team and individual concern, with all parties striving to attain a safer work environment.

This HPTC/HAFE project is a work zone and is therefore designated a hardhat area in compliance with OHSA regulations. All persons entering the designated work area will wear an approved hard hat at all times. The HPTC section chiefs, namely William Hose, Christopher McGuigan or Christopher Robinson are the only individuals who may grant exemption or exception to this written HPTC policy.
Project leaders shall conduct “tailgate safety meetings” weekly with workers assigned to the project.
The HPTC will conduct all work activities consistent with applicable health and safety regulations. All HPTC project work shall be conducted in accordance with OSHA regulations – 29 CFR Part 1926.

VIII. PRODUCTS

Products to be furnished by the agreements within this Project Agreement from the HPTC to the HAFE are:

1. Completion of preservation tasks as detailed in Section II of this Project Agreement.

3. Preparation of a Record of Treatment for this project, both Phase I and Phase II, in accordance with Director's Order (DO) #28. The Record of Treatment includes
account data, correspondence, color photographs, sketches, weekly reports, a narrative outlining the course of work, conditions encountered, and materials used.

The HPTC shall provide limited distribution of the Record of Treatment. Broad distribution of the Record of Treatment, as outlined in Appendix D, DO#28, shall be the responsibility of the Park. The HPTC shall provide the HAFE Program Manager with the Record of Treatment prepared in a CD ROM format. Included in this document will be select scanned and digital photographic images. All original photographs and negatives will be packaged separately in a loose-leaf binder and presented to the HAFE Park for their library records.

The HPTC shall retain an electronic copy with duplicates of all photographs for the HPTC library. The HPTC shall distribute a CD ROM copy of the Record of Treatment report to the HPTC Deputy Superintendent, the designated Project Leader, the Harpers Ferry Center Library, the DSC Technical Information Center and respective park Regional Office.

IX. ESTIMATED SCHEDULE

Draft Addendum to Project Agreement:	January 4, 2005
Final Addendum to Project Agreement:	February 4, 2005
Project Start Date Phase II:	May 2005
Project Completion Date Phase II:	September 2005
Distribute Project Record:	March 2006

X. PROJECT TEAM

HPTC:
Chris Robinson, Project Supervisor
Scott Jones, Project Manager/ Project Leader

HAFE:
Peter Dessauer, Historic Architect, HAFE
Michael Castagnetto, Chief of Maintenance, HAFE
Mia Parsons, Chief Archeologist, HAFE
Steve Lowe, Landscape Architect, HAFE
Dennis Frye, Chief of Cultural Resources, HAFE

XI. COST ESTIMATE

NOTE: HPTC's salaries are calculated on a pay period basis. The number of pay periods is based upon an estimate of the total amount of hours required for each team member to complete the required project tasks. The hourly rate for each occupation is determined by combining the direct hourly rate plus benefits with a prorated amount for the indirect costs of annual and sick leave, holidays, and training time.

TASK #1: Mobilization/ Documentation and Demobilization

Labor:	
(1) Exhibits Specialist @ 2 wks	3,611
(1) Preservation Specialist @ 2 wks	2,860
(1) Maintenance Worker @ 2 wks	2,400
SUBTOTAL	8,871

TASK #2: Scaffold Assembly

Labor:	
(1) Exhibits Specialist @ 2 wks	3,611
(2) Maintenance Workers @ 1 wk	2,400
Contract Services	10,000
SUBTOTAL	16,011

TASK #3: Selectively Repair and Repointing of Standing Wall Sections

Labor:	
(1) Exhibits Specialist @ 5 wks	9,027
(2) Masons @ 4wks	13,888
(2) Maintenance Workers @ 4 wks	9,626
Materials:	
Sand, NHL, dimensional timbers, Borates, etc.	1,000

SUBTOTAL	**32,541**

TASK #4: Plaster Conservation

Labor:	
(1) Exhibits Specialist @ 3 wks	5,417
(1) Preservation Specialist @ 3 wks	4,291
SUBTOTAL	9,708

ITEM #1: PHASE II - Project-Related Costs

NPS Vehicles/Motor Pool	3,906
Tool Maintenance	1,175
Preparation of Record of Treatment (Final Report)	1,500
Project Supervision @ 3 wks	6,281
SUBTOTAL:	**12,862**

COST ESTIMATE SUMMARY – PHASE II

TASK #1…..……..……..……..8,871	
TASK #2……..…..……..16,011	
TASK #3…….32,541	
TASK #4……...9,708	
ITEM #1…….……12,862	
SUBTOTAL	79,993
Overhead	26,664
SUBTOTAL	**106,657**
HAFE Archeological Assistance	**7,500**
ESTIMATED PROJECT TOTAL	**114,157**

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DESIGN CHANGE APPROVAL

Design Change Approval #: Date of Submittal:

Park/Area:
Drawing/Specification #:

Project Supervisor:
Project Leader:

Reference (Approval specification, detail or page # you propose to change)

Proposed Change (Brief description of change with detail attached if necessary)

Cost Estimate

Discussion (Who?, What?, Where?, When?, and How? Add comments and/or follow-up.

Recommended by:_____ Date:
Initiator

Concur:_____ Date:
Project Supervisor

Concur: _____ Date:
Assistant Superintendent, HPTC

Concur: _____ Date:
Superintendent (Optional)

Approved:_____ Date:
Regional Historical Architect

Correspondence

United States Department of the Interior
NATIONAL PARK SERVICE
Historic Preservation Training Center
4801A Urbana Pike
Frederick, MD 21704

IN REPLY REFER TO:

H30 (HPTC)

April 4, 2005

Memorandum

To: Superintendent, Harpers Ferry national Historic Park

From: Superintendent, Historic Preservation Training Center

Ref: Stabilization/Preservation of the Episcopal Church Ruins

Subject: Preconstruction Meeting - Phase II

The subject meeting will be held on Thursday April 14th at 11:00 a.m. All interested parties have been informed of the time of the meeting prior to the distribution of this memo. Your attendance or the attendance by a member of your staff is requested and encouraged. The meeting will be held at the Episcopal Church Ruins. Agenda items for discussion are to include;

- Anticipated project schedule
- HAFE/HPTC project coordination
- Compliance and ground disturbance
- Review SOW tasks as follows;
    - Scaffold assembly on elevated ruin wall sections
    - Workers Safety
    - Selective repair/rebuilding of failed wall sections. (resume from phase I)
    - Selective repointing of approximately 1500 square feet of stone wall joints at all elevations with priority placed on the East elevation's tower, walls, and corners. (resume from phase I)
    - Repair/replace mortar cap the length of wall heads.
    - Repair/replace wood lintels as required.

- Conservation of plaster remnants on interior wall surfaces. (resume from phase I)
- Site vegetation control during HPTC occupation.
- Final surface grading & site cleanup

If there are any questions or comments please direct them to either Chris Robinson or Scott Jones, both at the Historic Preservation Training Center, (301) 663-8206.

H. Thomas McGrath

cc:
Peter Dessauer, Historical Architect, HAFE
Mia Parsons, Archeologist, HAFE

Weekly Reports

This section contains field reports filed
between September 2003 and August 2005

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 1&2
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: September 29, 2003 **Week Ending:** October 16, 2003

GENERAL

Work was initiated on September 25 with staging and scaffold erection at the church tower. The Draft Project Agreement was issued on the September 25th with the Final issued for signature on September 29th, 2003.

A formal Preconstruction Meeting was conducted at the start of work on September 29th with the following in attendance for Harpers Ferry Park; Mia Parsons, Peter Dessauer, Matt Grave, and Scott Jones for HPTC.

VISITORS TO THE SITE
Peter Dessauer, HAFE

WORK PERFORMED

- Mobilization, Documentation, Demobilization
- Scaffold Tower Assembly
- Mortar analysis and material mock-ups for approval
- Selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs)
- Repair and stabilization of the solitary Tudor Brick arch

Phase I will first and foremost focus on the immediate repair and stabilization of the Tudor brick arch. During the execution of the arch repairs, rudimentary investigation and examination of the resource will be conducted, necessary to ascertain stabilization and treatment options, alternatives and/or recommendations for the stabilization of all primary exterior walls and any interior or secondary masonry walls associated with the church ruins. Associated archeological surveys/monitoring will also be coordinated (as needed) with determined vegetation removal and any related excavation activities to be performed.

HPTC will research, develop and apply traditional masonry building techniques while performing stabilization repairs to the arch work. This will include replicating the arch brickwork bonding patterns and utilizing lime mortars to reproduce and/or replicate the historic mortar formula. Selective repointing tasks will also be executed within the tower area with use of staged scaffold system.

- * Mortar analysis and material mock-ups for approval
- Brick selection from HAFE bone yard - Virginius Island salvage brick
- Centering fabrication for arch repair & form
- Selective disassembly of loose brick units @ arch intrados
- Repair the solitary Tudor Brick arch – insitu
- Selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs) Determination for repair or replacement will be determined in the field by HPTC.

Selective Repointing of Standing Ruin Wall Sections

Selectively rake and repoint both the interior and exterior of the primary standing ruin walls. Examination and inspection for deficiencies or failures will be conducted on all exterior (primary) and interior (secondary) walls associated with the church ruins.

All new pointing mortar will be a Type 'N' strength mix that will match the historic mortar in color, texture, and joint profile. The removal of failed mortar shall be accomplished using both hand and mechanical tools. The use of mechanical tools will be determined in the field and conducted only by qualified individuals. Mechanical methods may be employed only when guarantees can be made that adjacent stonework will not be damaged.

PROJECTED WORK FOR NEXT WEEK

- Continued selective repointing of church tower sections from scaffold tower assembly

SAFETY

Fall protection and scaffold safety review while working at elevated heights.

WEATHER

PERSONNEL ASSIGNED TO PROJECT

1 Exhibits Specialist
2 Masons
2 Maintenance Workers
RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	June 2004
Percentage Completed:	25 %
Project Starting Balance	$ 185,088

Scott Jones
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthrie, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 3
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: June 16, 2004 **Week Ending:** June 19, 2004

GENERAL

Following a lengthy period of inactivity, the HPTC returned to the site to resume work initiated during the first quarter of this fiscal year. Park representatives were notified last week of HPTC's plans and provided a brief description of the forecasted activities and tasks. The HPTC intends on being on site approximately 3-4 weeks at which time tasks identified for completion during this phase should be finalized.

Work during this phase will concentrate on the exterior side of the South elevation and address failed mortar joints and deteriorating fenestrations.

VISITORS TO THE SITE
Mervin Knotts, HAFE

WORK PERFORMED

On Monday a small crew mobilized delivering tools and materials to the site. The crew was briefed by Chris Robinson, Supervisory Exhibits Specialist, HPTC on the scope of work and tasks to be completed during this phase of work. Material specifications and site use were also discussed. The crew then immediately began to prepare the site for work. Work started in the mid-section of the south elevation with the erection of several sections of scaffolding. The removal of vegetation and failed mortar joints was then initiated.

On Tuesday additional tools and materials were brought to the site and raking of mortar joints continued. Mid-day, repointing of this wall section was initiated using a mortar mix of 1 part NHL5 and three parts Fredericksburg sand. Work to prepare the center door opening for repairs was also initiated with the removal of failed masonry and loose mortar.

Wednesday and Thursday the crew continued to work on repointing the center section of the South wall. Work will focus on the left end of this wall section.
PROJECTED WORK FOR NEXT WEEK

- Continued selective repointing of the South wall's exterior elevation.
- Continue with repairs to door opening.

SAFETY

The crew was reminded of HPTC's hard hat policy and directed to comply with this policy. Safety concerns regarding work on rough and uneven surfaces was also addressed.

WEATHER

Partly sunny, warm and humid through the week with afternoon thunderstorms. Temperatures ranged from lows in the 60's to highs in the 80's.

PERSONNEL ASSIGNED TO PROJECT

1 Exhibits Specialist
2 Masons

RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	June 2004
Percentage Completed:	40 %
Project Starting Balance	$ 69,050

Chris Robinson
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthrie, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 4
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: June 29, 2004 **Week Ending:** June 26, 2004

GENERAL

This week's activities continued to focus on the exterior of the South elevation. Tasks included selective raking and repointing and rebuilding failed sections of masonry.

VISITORS TO THE SITE
None

WORK PERFORMED

On Monday a small crew returned to the site and continued with raking and repointing activities along the South elevation of the ruins. The flow of work continued to move towards the west elevation. Joints are being raked to an appropriate depth or to sound masonry and then repointed using a mix of one part NHL5 and three parts sand. During the joint removal work vegetation is being removed. Rendered surfaces are being left for further evaluation and possible stabilization during the second phase of work scheduled for FY-05. Approximately 250 square feet of raking and repointing were completed during the week.

Treatment of the failed masonry at the base of the wall at the center doorway was also addressed during this week's activities. Using wall fall stone and the repointing mortar mix previously mentioned, voids created from failing masonry were in-filled. The wall alignment set during this work was consistent with that of the jamb and the opening above.

PROJECTED WORK FOR NEXT WEEK

- Initiate repointing of the exterior of the elevation.
- Re-establish failed masonry along west elevation.
- Continue with repairs to door openings.

SAFETY

This week's safety meeting addressed the need to insure that the work area was cleaned of debris and that trip hazards were removed or clearly marked.

WEATHER

Partly sunny, warm and humid through the week with afternoon thunderstorms. Temperatures ranged from lows in the 60's to highs in the 80's.

PERSONNEL ASSIGNED TO PROJECT

1 Exhibits Specialist
1 Mason
2 Maintenance Workers

RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	June 2004
Percentage Completed:	70 %
Project Starting Balance	$ 69,050

Chris Robinson
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 5
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: July 6, 2004 **Week Ending:** July 3, 2004

GENERAL

This week's activities focused on both the interior and exterior surfaces of the West elevation. Tasks included selective raking and repointing, rebuilding of failed sections of masonry, edge pointing existing rendering, and demobilization.

It is anticipated that this is the last week of onsite activities for this phase of work. If following a review of the project ledger it is determined that funds remain, additional work will be executed using any remaining funds.

VISITORS TO THE SITE
Peter Dessauer, HAFE
Tom McGrath, HPTC

WORK PERFORMED

On Monday, work associated with the raking and repointing of failed mortar joints continued. Activities initially focused on the interior and exterior surfaces of the southwest corner. All failed or failing mortar joints were raked to an appropriate depth and repointed using the approved mortar. Approximately 50% or 150 square feet were treated. In addition to raking and repointing activities the section of failed masonry at the base of the remaining West elevation (southwest corner) was re-established. Using wall fall stone this wall section was re-built to a point that would provide support and further stabilization of this wall section. Rebuilding efforts were performed in a fashion that replicated the coursing and bonding patterns of the adjacent masonry. Joints are being flush pointed.

On Wednesday, the crew shifted their attention to the exterior surfaces of the northwest corner and edge pointing of existing rendering. Raking and repointing activities along these elevations were consistent with that performed on the previous elevations. Approximately 100 square feet was repointed. In addition to raking and repointing activities areas within the South and West elevations, exhibiting rendering, were treated.

As a preliminary treatment and until further decisions are made as to how best treat these areas of rendering, all existing rendering was edge pointed. This technique has proven to be effective in preserving rendering and extending the serviceable life. The process involves the placement of a mortar wash around the perimeter of each of these areas. It should be noted that these areas should receive additional treatment in order to maximize the level of stabilization. Treating each area with a lime-wash (shelter coat) or possibly a consolident should be considered. This treatment will be discussed prior to phase II any before any additional work is initiated.

Thursday afternoon the site was cleaned-up and all tools and materials removed from the site.

PROJECTED WORK FOR NEXT WEEK

- None.

SAFETY

Following a report that crewmembers were not in compliance with HPTC policy this week's safety meeting was used to remind employees that the site is a hard hat area and that hardhats should be used at all times.

WEATHER

Partly sunny, warm and humid through the week with afternoon thunderstorms. Temperatures ranged from lows in the 60's to highs in the 80's.

PERSONNEL ASSIGNED TO PROJECT

1 Exhibits Specialist
1 Mason
2 Maintenance Workers

RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	June 2004
Percentage Completed:	95 %
Project Starting Balance	$ 69,050

Chris Robinson

Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBERS 6 &7
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: July 17, 2004 **Weeks Ending:** August 7, 2004
August 14, 2004

GENERAL

After further review of the project account it was determined that a minimal amount of funds remained allowing a small crew to return to the site during the week of August 2, 2004 to resume work. It is anticipated that work will continue through the week of August 23, 2004.

Activities during the past two weeks were limited to selective raking and repointing with work focusing on the lower wall sections at the northwest corner.

On Thursday, August 12, 2004, Peter Dessauer, Architect, HAFE visited the site to inspect the ongoing work. Mr. Dessauer was briefed by Chris Robinson, HPTC on past activities, the reasoning for various methods and techniques in use, and projected accomplishments for this phase of work. Mr. Dessauer was pleased with the progress but expressed concerns regarding the amount of vegetation taking hold in areas recently completed. Mr. Dessauer requested that HPTC investigate options for controlling this growth and suggested using either biocides or herbicides following raking activities and prior to repointing in hopes of controlling growth. HPTC agreed to investigate options and report any findings.

In addition to discussing controlling vegetation, the conservation of plaster work remaining on the walls was addressed. The plaster is currently in a very fragile state and is eroding quickly. HPTC suggested treating the plaster work by first edge pointing all areas followed by an application of lime wash and/or a chemical-based consolidator. Mr. Dessauer agreed that treatment of the plasterwork was necessary and approved the use of both products for testing purposes. HPTC intends on treating two small areas, using a lime wash on one and a silan based product on the other, prior to the upcoming winter season. These two areas will serve as test panels for determining the effectiveness and appropriateness of both materials.

Following this meeting Jennifer Herrmann, Assistant Conservation Scientist, Harpers Ferry Center-Conservation was contacted to discuss options for chemically controlling vegetation. Ms. Herrmann informed HPTC that the use of biocides would have little or no effect on controlling leafy or woody vegetation. The use of herbicides (Roundup) was

suggested as the preferred treatment providing it was determined that this chemical did not have an adverse effect on the building stone or mortar. It was suggested that some basic testing be performed prior to executing any treatment. It will also be necessary to get approval for the use of such herbicides.
HPTC will continue to investigate options for the treatment and control of vegetation.

VISITORS TO THE SITE

Peter Dessauer, HAFE

WORK PERFORMED

Work during this two week period focused on the raking and repointing of failed mortar joints along the exterior elevations of the West and North walls. All failed or failing mortar joints were raked to an appropriate depth and repointed using the approved mortar. Joints are being flush pointed. Care was taken to avoid removing or damaging any plaster remaining on the wall surfaces. Those areas exhibiting plaster were edge pointed in an attempt to improve the mechanical bond and limit the amount of moisture entering behind the plaster.
Approximately 200 square feet of stonework was selectively repointed.

PROJECTED WORK FOR NEXT WEEK

- Continue selective repointing.
- Continue edge pointing of plaster.
- Continue research of vegetation control and plaster consolidation.

SAFETY

This week's safety meeting addressed safety issues associated with the use of scaffolding. Crewmembers were reminded to insure that all employees were off scaffolding prior to leaving for breaks and lunch.

WEATHER
Partly sunny and warm through the week with afternoon thundershowers. Temperatures ranged from lows in the 60's to highs in the 80's.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(2) Maintenance Workers

RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	June 2004
Percentage Completed:	95 %
Project Starting Balance	$ 69,050

Chris Robinson
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBERS 8
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: August 20, 2004 **Week Ending:** August 21, 2004

GENERAL

Activities through the week were limited to raking and repointing tasks. Work is being executed by a small crew as this phase of work winds down. Work continued to focus on the exterior elevation at the northwest corner and along the exterior of the North wall.

In preparation for preparing sample panels of two types of coatings for the conservation and stabilization of the plaster remnants, on both the interior and exterior elevations, work was conducted through the week. Consultation with Johann Rudruff, Technician, Keim Mineral Coatings has provided further direction in this matter. Mr. Rudruff has suggested using a three coat process using Keim's product line. The first of the three coats would be Silex OH. The second would be Silan 100 which serves as a waterproofing. The third and final coat is Resturo Dilution which is a fixative and activates the Silan 100. This process will be presented to Peter Dessauer, Architect, HAFE for consideration and approval prior to initiating the process. The second type of stabilization will be a traditional lime wash applied in three coats. This method will also be presented for consideration and approval.

Mia Parsons, Senior Archeologist, HAFE was briefed on the suggestion and subsequent findings of using antimicrobial solutions and/or herbicides for the control of vegetation on the ruins. Ms. Parsons agreed that a solution to the problem was warranted and offered to check with HAFE Natural Resource Division regarding the appropriateness of using a herbicide. Treatments that require the use of herbicides will not be performed until approval is received.

VISITORS TO THE SITE

None

WORK PERFORMED

Work during the week continued to focus on the raking and repointing of failed mortar joints along the exterior elevations of the West and North walls. All failed or failing mortar joints were raked to an appropriate depth and repointed using the approved mortar.
Joints are being flush pointed. Care was taken to avoid removing or damaging any plaster remaining on the wall surfaces. Those areas exhibiting plaster were edge pointed in an attempt to improve the mechanical bond and limit the amount of moisture entering behind the plaster. Mortar joints exhibiting sound Portland cement based repairs are being left.
Approximately 150 square feet of stonework was selectively repointed.

PROJECTED WORK FOR NEXT WEEK

- Continue selective repointing.
- Continue edge pointing of plaster.
- Continue research of plaster consolidation.

SAFETY

This week's safety meeting was used to address safety concerns regarding heat exhaustion and dehydration. Crewmembers were instructed to consume quantities of liquids and to watch coworkers for signs of heat exhaustion.

WEATHER

Mostly sunny, hot and humid through the week with an occasional rain shower. Temperatures ranged from lows in the 70's to highs in the upper 80's.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(2) Maintenance Workers

RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	September 3, 2004
Percentage Completed:	97 %
Project Starting Balance	$ 69,050

Chris Robinson
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBERS 9
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: August 30, 2004 **Week Ending:** August 28, 2004

GENERAL

Activities through the week continued to be limited to raking and repointing tasks. Work is being executed by a small crew as this phase of work winds down. Work continued to focus on the exterior elevation at the northwest corner and along the exterior of the North wall.

In preparation for preparing sample panels of two types of coatings for the conservation and stabilization of the plaster remnants, on both the interior and exterior elevations, materials were procured and scaffolding set.

VISITORS TO THE SITE

None

WORK PERFORMED

Work during the week continued to focus on the raking and repointing of failed mortar joints along the exterior elevations of the West and North walls. All failed or failing mortar joints were raked to an appropriate depth and repointed using the approved mortar. Joints are being flush pointed. Care to avoid removing or damaging any plaster remaining on the wall surfaces continued. Those areas exhibiting plaster were edge pointed in an attempt to improve the mechanical bond and limit the amount of moisture entering behind the plaster. Mortar joints exhibiting sound Portland cement based repairs are being left. Approximately 250 square feet of stonework was selectively repointed.

PROJECTED WORK FOR NEXT WEEK

- NONE

SAFETY

This week's safety meeting was used to address safety concerns associated with airborne particulates and silica dust. Crewmembers were instructed to keep work areas damp and maintain a clean work area.

WEATHER

Mostly sunny, hot and humid through the week. No measurable percipitation. Temperatures ranged from lows in the 70's to highs in the upper 80's.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Mason
(2) Maintenance Workers

RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	September 3, 2004
Percentage Completed:	97 %
Project Starting Balance	$ 69,050

Chris Robinson
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBERS 10
FY-04

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the Episcopal Church Ruins

Date: September 17, 2004 **Week Ending:** September 18, 2004

GENERAL

A minimal of on site activity resumed this week. Work focused on the treatment of plaster remnants along the interior surfaces of the southwest corner. Treatment of the plaster is being performed as an experimental exercise in order to determine an appropriate treatment for all plaster remnants on the ruin. Two treatments, documented in the Work Performed section of this document, were completed.

VISITORS TO THE SITE

None

WORK PERFORMED

On Monday, a small crew initiated treatment of the two plaster panels in the southwest corner of the ruins. The panel along the South elevation received treatment using a traditional lime wash while the West elevation received treatment using Keim's product line of stone/plaster consolident.

Work on the South elevation was initiated by first wetting the surface with water. The plaster surface then received the first of 4 coats of lime wash. The lime wash was prepared using traditionally made non-hydraulic lime putty and water. The wash was mixed at a ration of 1 part lime putty to 10 parts water. The wash was then filtered through a paint screen to remove unfired limestone. The wash was applied with a natural bristle brush.

Work on the West elevation began with an application of Keim's Silex OH. This material is designed to consolidate the mineral structure of the plaster without inhibiting moisture transpiration. This material was applied using a hand operated spray bottle. The material was applied until the surface of the plaster was saturated and would not readily accept any additional material.

On Tuesday, the South elevation received a second coat of lime wash. The West elevation received an application of Keim's Silan 100. The Silan 100 is intended to provide a level of waterproofing while again allowing the plaster to pass moisture from the substrate.

On Wednesday and Thursday, two additional coats of lime wash were applied to the South elevation. The West elevation must cure for two weeks before applying the final application of Keim' Resturo Fixative. The fixative activates the Silan 100.

Initially, both of these treatments altered the appearance of the plaster. The lime wash created a white appearance. The Keim treatment darkened the plaster. The performance of these treatments can not be evaluated at this time. Performance will be evaluated following a winter season and prior to any widespread use of either of the treatments.

PROJECTED WORK FOR NEXT WEEK

- NONE – Work to apply the fixative will be performed in 2 weeks.

SAFETY

This week's safety meeting was used to discuss handling of the Keim products and the associated hazards. Due to the very limited exposure time to these products it was determined that respirators were not needed but that employees should exercise caution and employ the use of PPE to avoid skin contact with the chemicals.

WEATHER

Partly cloudy with periods of light rain. Temperatures ranged from lows in the 60's to highs in the low 80's.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Preservation Specialist
(1) Maintenance Worker

RECAP

Starting Date:	September 29, 2003
Projected Completion Date:	September 3, 2004
Percentage Completed:	98 %
Project Starting Balance	$ 69,050

Chris Robinson
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
John Ravenhorst, Archeologist, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

This completes the reports for Phase I

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORT NUMBER 1
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: June 6, 2005 **Week Ending:** June 3, 2005

GENERAL

Onsite activities were initiated on May 23rd with the delivery and preliminary staging for the system scaffold. The free standing scaffold was erected on all interior and exterior elevations of the church tower and adjoining wall sections by Scaffold Resource, LLC. Scaffold assembly was completed on Thursday May 26th following a week of thunderstorms and heavy rain, caused by a spring nor eastern. The base sections of the exterior scaffold towers were fenced and the church area was designated as a work zone. The scaffold assembly is expected to be in position at a minimum of 90 days or until August 24th.

HPTC initiated mobilization of tools, equipment and materials to establish the worksite. This was coordinated with the demobilization tasks for the completed Public Way Wall project.

Anticipated tasks to be executed during Phase II at the Episcopal Church Ruins;

- Mobilization, Documentation, Demobilization
- Scaffold Tower Assembly @ tower and adjoined wall sections
- Selective repointing and masonry repairs @ the alter tower wall sections
- Selective rough sawn timber repairs and/or replacements (rotted lintels, nailers and jambs)
- Additional repairs and stabilization of the solitary Tudor Brick arch
- Selective repair/rebuild approximately 100 cubic feet of stone walls throughout
- Selective repointing of approximately 1500 square feet of stone wall joints at all standing wall elevations throughout
- Plaster conservation treatments on interior wall sections @ the tower section

VISITORS TO THE SITE

Peter Dessauer, HAFE
Scaffold Resource Assembly Team

WORK PERFORMED

Monday – May 30th, Memorial Day observance, no work.

Tuesday – Materials staging continued with the delivery of sand and mortar materials to the work site. Unused sand was collected from the Public Way project and transferred to the church ruins for use in the repair mortar. Additional tools and materials were also removed from the Public Way staging area and moved to the church ruins for use. All material and equipment staging is stockpiled on the north exterior elevation of the church ruins. Traps and shade cloth were also installed on the scaffold tower section to provide worker protection from the weather.

Wednesday – Initiated selective raking and repointing on the interior southwest tower section adjacent to the stone arch, approximately 15 feet from the ground surface. One person crew performed approximately 8 square feet of comprehensive repointing in 10 hour period. This task involved 1) the hand extraction of Portland cement pointing from the stone jointing, 2) preparing the joint for repointing by removing all debris and dead mortar to an acceptable depth per the joint width and water dampening the selected area, 3) preparing & mixing the replacement lime mortar, 4) repointing the open joints, 5) selective stone replacement and pinning of large voids, 6) protecting the completed work 7) brush finishing the fresh joint and conducting post installation wetting treatments.

Note: Most of the opened joints prepared for repointing have been cleaned in excess of 4-inches deep following the removal of dead mortar, loose sand and roots. All joints are visually and audibly inspected through sounding. Sounding is the process of tapping the joint for bond and strength. This process is primarily focused on the harder cement joints.

Thursday – Continued selective raking and repointing on the tower section with a 5 person crew. Minimal repointing was completed in the first week with the shortened week and limited staffing Observations, notes and the sequence of repointing steps during the first week of masonry stabilization tasks are as follows;

- The previous repointing campaign was a simple repoint with some selective stone replacements. Most of the Portland cement mortar being removed during this phase is superficial with minimal depth in application (¾ inch avg.) and spread over weathered mortar joints that <u>were not</u> cutout to achieve a sufficient repointing depth.
- Poor repointing and lost bond at the leading edges of the mortar/stone has offered vegetation a haven to take root. Most leafy vegetation observed is annual growth, causing insignificant harm to the masonry. Micro-floral is plentiful and concentrates in shaded wall sections as well as decaying phylite stones that are in a delaminating phase.
- 80% of the previous repointing conducted on the tower wall sections focused over the arches to the extant wall coping course.
- The original bedding mortar that remains exposed is soft/friable on the immediate surface but continues to prove true in most areas. Original bedding mortar that

was encapsulated with the superficial Portland repointing is decayed to sand with no lime content or bond with the stone.

- 80% repointing is expected on the exterior tower sections, all elevations, above the brick and stone arches, removing most of the previous repairs. The cement pointing on the interior tower section appears to be in better condition and adhesion subsequent to a visual inspection
- Raking & repointing was thoughtfully initiated on the tower wall sections below the wall coping and mortar cap. This is essential to "tighten" the stone work and wall sections prior to executing any repairs on the final stone courses or replacing the wall mortar cap.
- Round-up herbicide will be applied to select sections of concentrated vegetation following mortar removal.
- 100% of the mortar cap on the standing tower wall section will be replaced with a lime mortar recipe (TBD). All other standing wall section caps will be inspected and repaired with selective removal, cutouts and/or non-shrink grout injection at fractured points.

PROJECTED WORK FOR NEXT WEEK

- Continue selective raking & repointing on all elevations of the tower section.
- Continue plaster conservation treatments/edge pointing
- Prepare test panel with modified mortar/additive (Roundup)
- Prepare mockup for mortar cap replacement

SAFETY

This week's safety meeting was used to introduce new employees to the HPTC safety plan as well as discuss the HPTC Hard Hat policy while working on scaffold and designated work areas.

WEATHER

Partly cloudy with seasonably cooler temperatures ranging from the 60's to mid 70's. No rain.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Exhibits Specialist Intern
(1) Maintenance Worker

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	5 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORT NUMBER 2 & 3
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: June 15, 2005 **Week Ending:** June 17, 2005

GENERAL

Continued to perform joint repairs and rebuilding tasks on the elevated tower section of the church ruins, both interior and exterior. Repointing and rebuilding repairs are now at 50% for all upper sections of the tower.

VISITORS TO THE SITE

Chris Robinson, HPTC

WORK PERFORMED

- Applied Round-up herbicide to select wall sections of concentrated vegetation following mortar removal as well as multiple areas of the ruins
- Continued raking and repointing on all interior and exterior wall elevations of the tower, working from the third tier deck of the scaffold system between 18 and 24 feet.

PROJECTED WORK FOR NEXT WEEK

- Continue selective raking & repointing on all elevations of the tower section.
- Initiate joint inspection and raking tasks on all lower wall and tower sections
- Begin mortar cap repairs on the tower wall sections

SAFETY

This week's safety meeting was necessary to address the scaffold safety protocol during approaching lightning and thunder storms. The crew members are aware to promptly gather tools and equipment for storage and to remove themselves to a secure location.

WEATHER

Seasonable weather with afternoon temperatures approaching the mid 80's, with heavy rain Monday – Tuesday the heat index was near 100`, Wednesday cooler with partly cloudy skies.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Maintenance Worker
(2) Maintenance Mechanics

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	19 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $114,157

Scott Jones
Project Leader, HPTC

cc mail:
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Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORT NUMBER 4
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: June 23, 2005 **Week Ending:** June 24, 2005

GENERAL

Continued to perform joint repairs and rebuilding tasks on the elevated tower section of the church ruins. Repointing and rebuilding repairs are now at 80% for all upper sections of the tower including 100% replacement of the wall mortar caps.

VISITORS TO THE SITE

None

WORK PERFORMED

- Shifted scaffold walk deck #3 down 36" on the east elevation of the tower to establish proper working height for mortar cap repairs.
- Suspended additional shade cloth over the scaffold assembly for worker and material protection
- Installed additional tarps to protect the repair work as well as to continue labor efforts in light rain
- Completed disassembly and removal of tower mortar cap, all elevations
- Removed all loose stones on the tower wall top – approximately 12 to 18 inches or 3 stone courses
- Removed multiple tree stumps and associated root system on south corner and west wall section
- Reset all removed stone in new lime mortar bed
- Cleaned the site of all mortar debris and removed all trash to local landfill
- Completed 90% of raking tasks on all elevations of the scaffold ruins from the first 6-foot walk deck through the tower section – approx. 1000 square feet.
- Restocked water and mortar materials for upcoming week

PROJECTED WORK FOR NEXT WEEK

- Complete selective raking & repointing on all elevations of the arched tower section
- Complete all rebuilding tasks of disassembled stone wall tops in the tower section

- Complete installation of new mortar caps on the tower section
- Begin repointing tasks on all elevations from the first scaffold deck 6' – 12'

SAFETY

This week's safety meeting addressed safety behavior and general awareness for working with colleagues and crew members.

WEATHER

Cooler weather early week with morning rain on Wednesday, temperatures in the low 70's. Clear and warmer on Thursday, with temperatures in the mid 80's.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Mason
(2) Maintenance Worker
(2) Maintenance Mechanics

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	23 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORT NUMBER 5
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: June 30, 2005 **Week Ending:** July 1, 2005

GENERAL

This week masonry tasks completed all joint repointing and rebuilding tasks on all elevated tower sections of the church ruins. Repointing and rebuilding repairs are projected at more than 90% for all upper sections of the tower sections including 100% removal and replacement of the wall mortar caps.

VISITORS TO THE SITE

Peter Dessauer, HAFE

WORK PERFORMED

HPTC completed the replacement of the two tower wall mortar caps. The mortar caps were reinstated using a mortar recipe of 1 part Cimpor (Portugal) natural lime cement hydrate and two parts Fredericksburg brown masonry sand. The Cimpor was selected for quicker set and a higher compressive strength, 725 psi. @ 28 days, in comparison to the St. Astier (France) natural lime cement hydrate being used for all repointing and rebuilding tasks which sets at 198 psi. in 28 days. Each of the mortar caps were installed to impart no standing storm water and positive drainage at all points. Much attention was given to insure that the caps did not produce fractures while taking initial set. The mortar was repeatedly worked with magnesium trowels and then completed with a brush finish. The caps are approximately 2-2 ½ inches thick at the wall center and tapered to the leading edge of each wall face to no less than ½ inch thin, sheltering 100 square feet of flat wall surface.

The standing wall section with the stone arch is 24-inches wide x 22 feet in length. The three 90-degree wall sections that form the tower well are 30-inches wide and run 27 feet in length.

HPTC also finished all raking & repointing tasks on all interior and exterior wall elevations of the tower section from the 13 to 22 feet as measured from the current surface grade. This task completes the inspection, hand tool removal (raking) of failed and inappropriate mortar jointing, joint cleaning preparation and joint repointing

(plugging) of 600 square feet of random course stone masonry. Joint repointing tasks were also initiated on all the interior stone wall elevations between 6-12 feet, working from the first scaffold deck platform.

Water and mortar materials were also restocked for upcoming week. No loose sand is stocked at the ruins and there is no potable water source. All sand and water are transported and staged on site by barrel and pails. The water is pump transferred from the trucked 55 gallon barrels at curbside to barrels placed adjacent to the mixer. All sand is transferred by 5 gallon pails from the stock pile at the power plant ruins to the site.

PROJECTED WORK FOR NEXT WEEK

- No work Monday July 4th – Independence day
- Continue repointing tasks on all stone wall elevations between 6-12 feet working from the first scaffold deck platform

SAFETY

This week's safety meeting addressed general awareness for heat related working conditions and insuring adequate hydration with rest periods.

WEATHER

This week presented much warmer weather with summer temperatures in the low 90's and humidity at 90%.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Mason
(2) Maintenance Workers
(2) Maintenance Mechanics

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	40 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC
cc mail:
Peter Dessauer, Historic Architect, HAFE

Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Gar Gauthier, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 6 & 7
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: July 14, 2005 **Week Ending:** July 15, 2005

GENERAL

This week masonry tasks continued selective joint raking, repointing and rebuilding tasks on all scaffold wall sections of the church ruins. Selective repointing and rebuilding repairs are projected at 50% for all upper sections of the church ruins including 100% removal and replacement of the wall mortar caps on the tower section.

VISITORS TO THE SITE

Chris Robinson, HPTC

WORK PERFORMED

HPTC continue repointing tasks on all stone wall elevations between 6-12 feet working from the first scaffold deck platform as measured from the current interior surface grade. This time-consuming task continues the inspection, hand tool removal (raking) of decayed and inappropriate mortar jointing, joint cleaning preparation, joint repointing (plugging) and wall repairs for approximately 400 square feet of the random course stone masonry. Edge repointing tasks were also initiated on existing interior and exterior parging and plaster located in the tower and adjacent wall elevations between 6-22 feet in preparation for conservation treatments.

Water and mortar materials were also restocked for upcoming week.

Note: During repointing repairs, bricks were found within the stone course work behind what is believed to be either the original stucco coat or possibly post Civil War repairs. This was discovered in the southeast corner @ the tower section.

PROJECTED WORK FOR NEXT WEEK

- Continue selective raking & repointing tasks on all stone wall elevations between 6-12 feet, working from the first scaffold deck platform
- Initiate plaster conservation treatments with mineral based fixative and water repellants

SAFETY

This week's safety meeting once again addressed preparedness for swift evacuation from the scaffold during lightning storms. The peripheral of Tropical storm Dennis offered up intense and very near lightning on 7/13.

WEATHER

Seasonably warm with light afternoon showers and thunder storms. Tropical storm Dennis offered cooler temperatures (80's) 7/13 & 7/14 with the weather pattern moving from the southeast.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(2) Maintenance Mechanics

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	55 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
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Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 8
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: July 18, 2005 **Week Ending:** July 22, 2005

GENERAL

Masonry tasks continued with selective joint raking, repointing and rebuilding tasks on all scaffold wall sections of the church ruins. Selective repointing and rebuilding repairs are projected at 65% for all upper sections of the church ruins and approximately 50% for all other standing wall sections.

VISITORS TO THE SITE

None

WORK PERFORMED

HPTC continue repointing tasks on all stone wall elevations between 0-12 feet working from grade and the first scaffold deck platform. This task continues the inspection, hand tool removal (raking) of decayed and inappropriate mortar jointing, joint cleaning preparation, joint repointing (plugging) and wall repairs for approximately 250 square feet of the random course stone masonry. Edge repointing tasks also continued on existing exterior stucco and interior plaster at all locations in preparation for mineral-based conservation treatments.

All scaffold decks were cleaned of debris and all unnecessary equipment was removed from the scaffold tower. Water and mortar materials were also restocked for the upcoming week. Stucco stabilization efforts were also addressed on the east gable wall @ Bldg. #43 Wednesday and Thursday.

PROJECTED WORK FOR NEXT WEEK

- Continue selective raking & repointing tasks on all stone wall elevations between 0-22 feet, working from all points on the scaffold system.
- Continue plaster and stucco conservation treatments with mineral based fixative and water repellants
- Initiate rebuilding repairs at the basement door openings (2) on the east elevation

SAFETY

The crew was briefed on the NPS Heat Injury Prevention Policy and controlling heat strain and stress. Frequent breaks were permitted during the peak hours of the 100+ degree heat index.

WEATHER

Oppressively humid and warm with the heat index hovering @ 100 degrees. Occasional showers and thunder storms Tuesday and Wednesday afternoon.

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Preservation Specialist
(1) Mason
(1) Maintenance Mechanic

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	65 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Richard Trott, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 9 & 10
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: August 4, 2005 **Week Ending:** August 5, 2005

GENERAL

Masonry tasks continued with selective joint raking, repointing and rebuilding tasks on all scaffold wall sections of the church ruins. Selective repointing and rebuilding repairs are now 90% complete for all upper wall sections of the church ruins and approximately 75% for all other standing wall sections.

VISITORS TO THE SITE

None

WORK PERFORMED

HPTC continue inspection and repointing tasks on all stone wall elevations between 6-22 feet working from grade and all scaffold deck platforms. This task continues the inspection, hand tool removal (raking) of decayed and inappropriate mortar jointing, joint cleaning preparation, joint repointing (plugging) and wall repairs of the random course stone masonry.

Plaster and pargeting conservation treatments were also initiated using Keim's product line of stone/plaster consolident. Various interior plaster and exterior pargeting panels were determined contributing to the feature and selected for conservation treatments. The Keim consolident is a three part system to be applied during a three week period. To begin, a single application of Keim's Silex – OH was applied. This solvent-based fluid material is designed to prime and strengthen the mineral structure of the plaster without inhibiting moisture transpiration. This material was applied using a hand operated spray bottle and brush. The material was applied until the surface of the plaster was saturated and would not readily accept any additional material.
MSDS material sheets were reviewed and PPE protocol were observed as prescribed

The second application of Keim's Silin 100 is intended to provide a level of waterproofing while again allowing the plaster to pass moisture from the substrate. This will be applied to all treated areas within 5 days time. The third application in the Keim

process is the final application of Keim' Resturo Fixative. The fixative activates the Silin 100 and is applied two weeks after the Silin 100 has cured as prescribed.
The performance of this remedial treatment has been evaluated following identical application and treatments as performed in the interior south west corner of October of 2004.

Water and mortar materials were also restocked for the upcoming week.

PROJECTED WORK FOR NEXT WEEK

- Re-inspect and evaluate all completed wall sections from all points on the scaffold system.
- Continue plaster and stucco conservation treatments with mineral based fixative, consolident and water repellant
- Complete stone rebuilding repairs at the basement door thresholds (2) on the east elevation openings
- Begin repairs and repointing on the interior north west corner wall section
- Begin in situ mortar cap repairs at various wall locations
- Begin wood preservative treatments @ eight lintel supports on all elevations
- Begin installation of jamb framing for stone lintel supports @ fractured stone lintels
- Initiate site cleanup for scaffold disassembly scheduled for the week of 8/22/05

SAFETY

The crew was again briefed on the NPS Heat Injury Prevention Policy and controlling heat strain and stress. Frequent breaks were permitted during the peak hours of the 100+ degree heat index.

WEATHER

Oppressively humid and warm with the heat index hovering @ 100 degrees. No measurable precipitation for the week

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Preservation Specialist
(1) Mason (cross-over assignment from Santa Fe)
(1) Maintenance Worker

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	85 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC

cc mail:
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Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Kevin Trott, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 11 & 12
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: August 18, 2005 **Week Ending:** August 19, 2005

GENERAL

Masonry tasks continued with selective joint raking, repointing and rebuilding tasks on all scaffold wall sections of the church ruins. Selective repointing and rebuilding repairs are now 99% complete for all upper wall sections of the church ruins and approximately 90% for all other standing wall sections.

VISITORS TO THE SITE

None

WORK PERFORMED

HPTC completed the inspection and repointing tasks on all stone wall elevations between 6-22 feet working from grade and all scaffold deck platforms erected around the church tower. This completes all raking and repointing and wall repairs of the random course stone masonry for all interior and exterior elevations at the staged tower walls. Prior to scaffold disassembly, all wall sections were visually re-inspected from all points on the scaffold system. The plaster and pargeting conservation treatments were completed on all extant panels deemed contributing to the ruins with the 3-part Keim system - mineral based fixative, consolident and water repellant.

Stone rebuilding repairs were also completed at the two basement door thresholds on the east elevation openings adjacent to the tower. Mortar cap repairs and replacements were also completed at various wall locations. Measurable mortar cap replacements were reconstructed with the Cimpor NHL as used on the tower mortar cap replacements. Fractures and breaks in the mortar caps were repaired with non-shrink grout and an acrylic adhesive.

All wood lintel supports (eight interior) were also brush cleaned with a mild TSP solution, rinsed and permitted to dry overnight. A wood preservative with water repellency was brush applied to all wood members located on all elevations. One 8 x 8 wood lintel was removed and replaced over the east-northeast basement doorway interior wall. The decaying wood lintel over the ease southeast doorway was also removed,

repaired and reset. A second application of wood preservative will be applied in the coming weeks.
Jamb framing was installed within the two tower fenestrations for additional support of the stone lintels. This was deemed necessary due to fractures in the stone lintel on the east southeast window opening. The impermanent jamb material is constructed of rough sawn, seasoned red oak measuring 2 ¼-inches thick by 7-inches wide and installed along the vertical masonry framework of each opening.

Following the removal of the system scaffold, at grade wall sections will be inspected, repointed and repaired as identified.

Water and mortar materials were also restocked for the upcoming week.

PROJECTED WORK FOR NEXT WEEK

- Site walk-through with HAFE Historical Architect
- Scaffold disassembly and removal by Scaffold Resource
- Site Clean-up following scaffold disassembly
- Punch list items (to be identified)
- Final weekly report for punch list items

SAFETY

The crew was briefed on hand, eye and respiratory PPE use during wood preservative and stone consolident applications

WEATHER

Humid and warm with the heat index hovering @ 100 degrees. No measurable precipitation

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Preservation Specialist
(1) Mason (cross-over assignment from Santa Fe)
(1) Maintenance Worker

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	95 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC

cc mail:
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Matt Graves, Cultural Resource Manger, HAFE
Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Kevin Trott, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

NATIONAL PARK SERVICE
HISTORIC PRESERVATION TRAINING CENTER
WEEKLY FIELD REPORTS NUMBER 13
FY-05

LOCATION: Harpers Ferry National Historic Park, National Park Service

PROJECT: Pkg.320C/PMIS #27506 Stabilization/Preservation of the St. John's Episcopal Church Ruins – Phase II

Date: August 25, 2005 **Week Ending:** August 26, 2005

GENERAL

An informal visually inspection was conducted with the HAFE Historical Architect on Monday 8/22/05 @ 9:30 a.m. A punch list was drafted of tasks to be completed in the coming weeks. Scaffold Resources commenced disassembly and removal of the system scaffold promptly on 8/22/05 as well.

VISITORS TO THE SITE

Peter Dessauer, HAFE
Chris Robinson, HPTC

WORK PERFORMED

HPTC has now completed the inspection, raking, repointing and wall repairs of the random course stone masonry for all interior and exterior elevations between 0-22 feet. An informal site walk-through inspection was conducted with the HAFE Historical Architect and punch list items were identified for final project completion. The system scaffold was disassembled and removed from the ruins site by 2:00 p.m. on 8/23/05.

Punch list items identified during the walkthrough inspection were completed 8/24 & 8/25 following the removal of the scaffold components from the church ruins site. Tasks identified and completed this week were; 1) selective joint raking and repointing on several lower wall sections inaccessible during scaffold placement, 2) removal of the damaged stone door lintel on the south exterior wall and replacement with a new stone recovered from the ruins site, 3) removal of graffiti from wood lintels, 4) spot repointing on open joints located at various locations on several upper wall sections 5) site cleanup and removal of all mortar debris, tools, equipment and materials.

This completes all masonry tasks for Phase II of the St. Johns Episcopal Church Ruins masonry stabilization.

PROJECTED WORK

- Schedule Final Inspection with HAFE staff
- Assemble Record of Treatment

SAFETY

The crew members were briefed on good lifting techniques during loading and transfer of tools and equipment from the work site during demobilization.

WEATHER

Much cooler and dry with afternoon temperatures in the mid 80's. No measurable precipitation

PERSONNEL ASSIGNED TO PROJECT

(1) Exhibits Specialist
(1) Preservation Specialist
(1) Mason
(1) Maintenance Worker

RECAP

Starting Date:	May 23, 2005
Projected Completion Date:	September 31, 2005
Percentage Completed:	99 %
Project Starting Balance	(HPTC $106,657) (HAFE $ 7,500) = $ 114,157

Scott Jones
Project Leader, HPTC

cc mail:
Peter Dessauer, Historic Architect, HAFE
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Mia Parsons, Senior Archeologist, HAFE
Donald Campbell, Superintendent, HAFE
Kevin Trott, Buildings Foreman, HAFE
Michael Castagnetto, Facilities Manager, HAFE

Material Data/Vendors

PROJECT TITLE: **Episcopal Church Ruins Stabilization/Preservation – Phase II**

PROJECT DATES: **05/05 – 08/05** **ACCOUNT # 3064-6529-MRL (EPCH)**

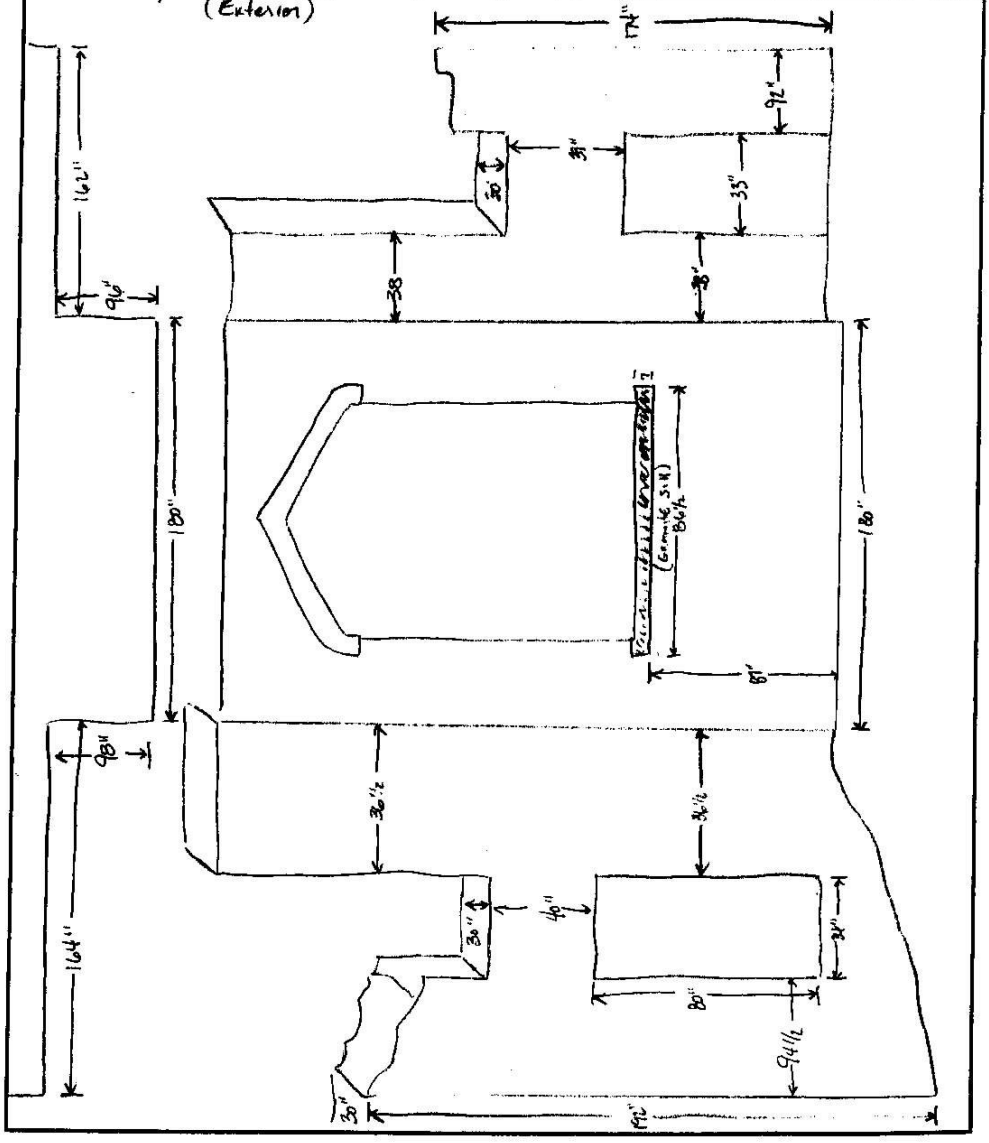
PROJECT ADDRESS: **Harpers Ferry National Historic Park**

PROJECT FEATURE: **Masonry Ruins Stabilization – comprehensive mortar re-pointing, plaster conservation, mortar caps, wood timber replacements**

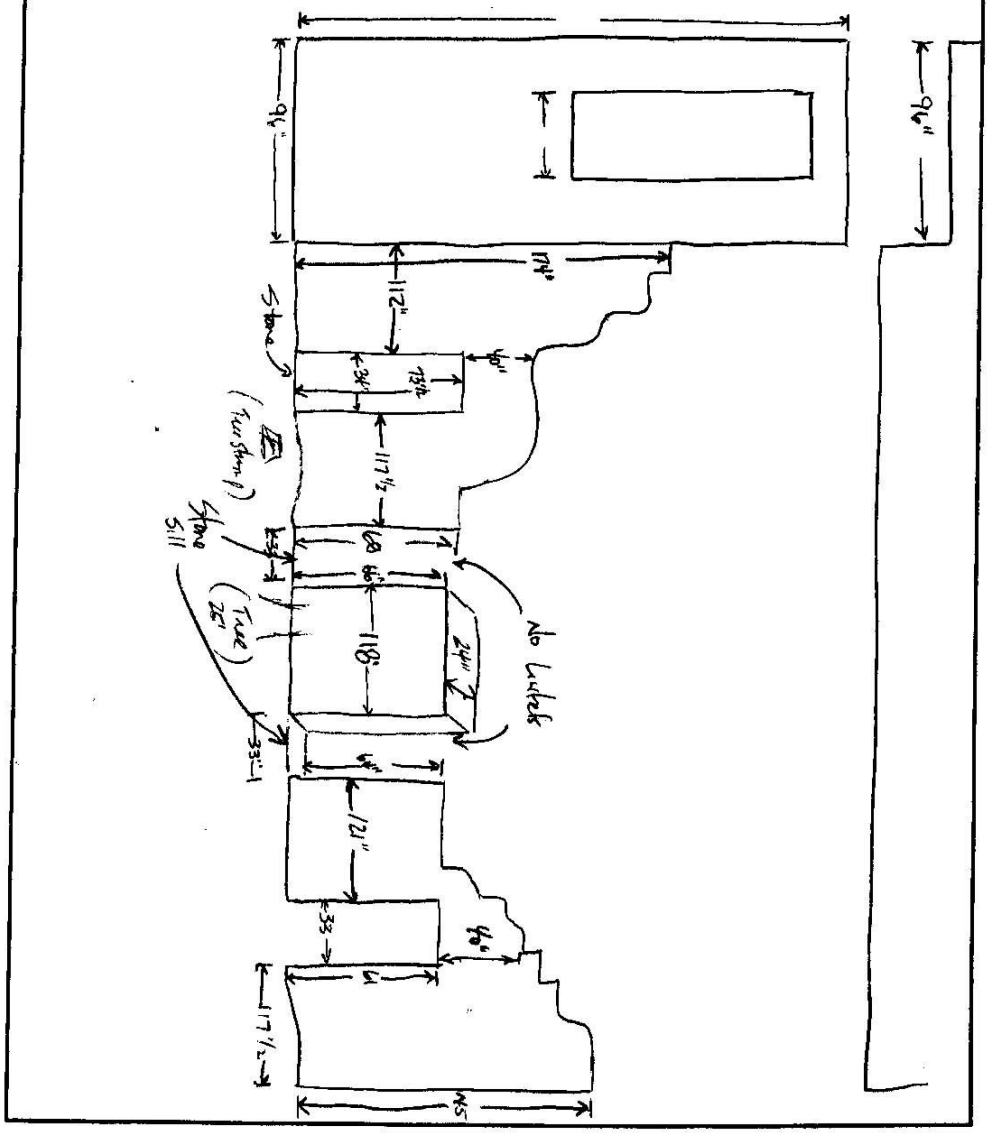
CONTACTS	TITLE	ADDRESS	PHONE	FAX
Peter Dessauer	Historical Architect			
Scaffold Resources Buddy	Superintendent	4240 Head waters Lane Olney, MD. 20832	301-924-7223 240-876-7473 cell	301-924-6506
Potomac Portables	Porta-john	P.O. B ox 1966 Shepherdstown, WV. 25443	304-876-3084	304-876-8336
Virginia Lime Works	NHL – lime mortars	P.O. Box 516 Monroe, VA 24574	434-929-8113	
Frederick Brick Works	Masonry supplies	184 East South Street Frederick, MD 21701	301-662-1153	301-662-2159
Deslauriers, Inc.	Keim Mineral Coatings	P.O. Box 189 Bellwood, IL. 60104	708-544-4455	708-544-4474
Southern States	Misc. supplies	694 East South Street Frederick, MD 21701	301-663-6164	
Grainger Supply	Workers Safety Equipment	5831 Buckeystown Pike Frederick, MD 21704 www.grainger.com	301-695-5063	
Ritz Camera	Photo processing	FSK Mall Frederick, MD. 21704	301-694-3282	
Bon Tool Co.	Masonry tools	4430 Gibsonia Road Gibsonia, PA 15044	724-443-7080	
Fredericksburg Sand & Gravel	Masonry sand	1170 KingsHighway Fredericksburg, VA. 22405	540-775-5773	

Field Drawings

Park Harpers Ferry NHP	**NATIONAL PARK SERVICE** HISTORIC PRESERVATION TRAINING CENTER		Sheet
Area St. John's Episcopal Church			of
Project Masonry Stabilization	By C Jones	Checked	Pkg.
Feature East / Front Elevation (Exterior)	Date 5/23/05	Date	Account

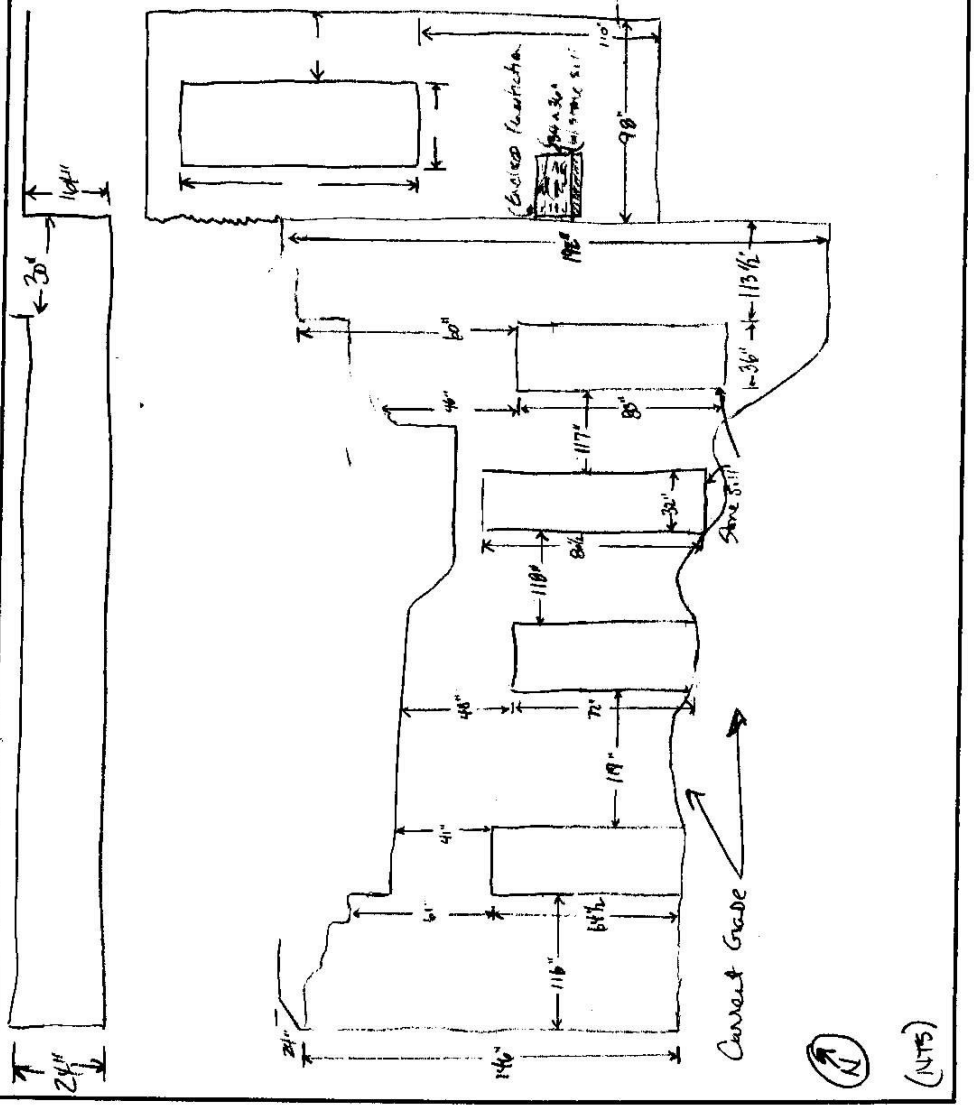


Park Harpers Ferry NHP	**NATIONAL PARK SERVICE** HISTORIC PRESERVATION TRAINING CENTER		Sheet
Area St. John's Episcopal Church Ruins			of
Project Masonry Stabilization	By S. Jones	Checked	Pkg.
Feature Exterior - North Elevation	Date 5/23/05	Date	Account

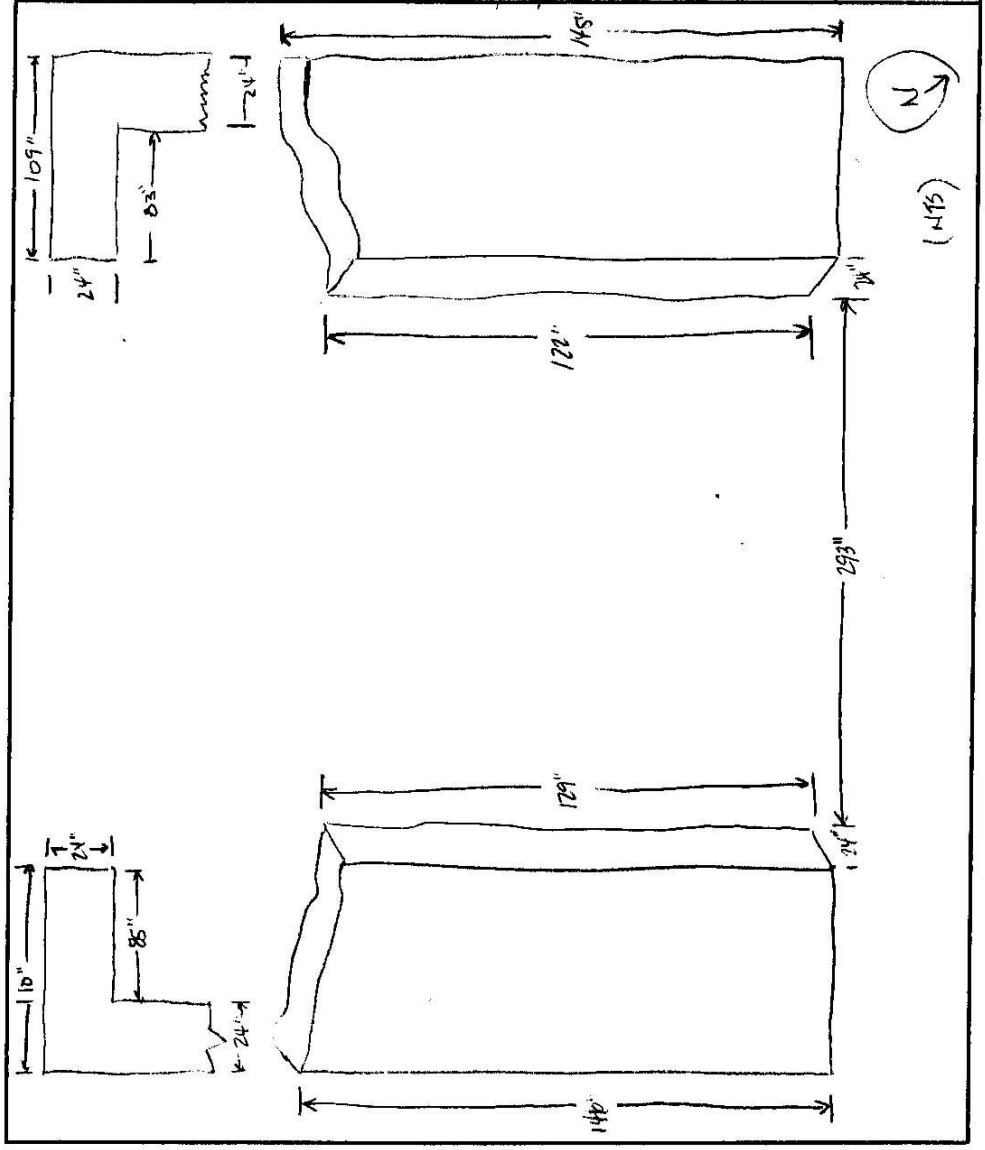


Park Harpers Ferry NHP	NATIONAL PARK SERVICE HISTORIC PRESERVATION TRAINING CENTER			Sheet
Area Episcopal Church Ruins				of
Project Masonry Stabilization	By S. Vogel		Checked	Pkg.
Feature St. John's Episcopal Church	Date 5/23/05		Date	Account

Exterior - South Elevation - Shenandoah Side



Park Harpers Ferry NHP	NATIONAL PARK SERVICE			Sheet
Area St. Johns Episcopal Church	HISTORIC PRESERVATION TRAINING CENTER			of
Project Masonry Stabilization	By S. Snaes		Checked	Pkg.
Feature West Wall Elevation - Interior	Date 5/23/05		Date	Account



Appendix


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