

Preserve Historic Railroad Culvert 1624

**Allegheny Portage Railroad National Historic Site
Gallitzin, Pennsylvania**

HISTORIC STRUCTURES RECORD OF TREATMENT



HISTORIC PRESERVATION TRAINING CENTER

**Department of Interior
National Park Service
4801A Urbana Pike
Frederick, MD 21704**

Preserve Historic Railroad Culvert 1624

**Allegheny Portage Railroad NHS
Gallitzin, PA**

FY 09

HISTORIC STRUCTURES RECORD OF TREATMENT

INDEX

I. COMPLETION REPORT

1. [Accounting](#)
2. [Narrative](#)
3. [Selected Photographs](#)

II. PROJECT HISTORY

1. [Project Agreement](#)
2. [Compliance Data](#)
3. [Correspondence](#)
4. [Weekly Reports](#)
5. [Material Data/Vendors](#)
6. [Field Drawings](#)

III. APPENDIX

1. Additional Photographs

Accounting

Historic Preservation Training Center
Direct Charge Authorization
FY2009



Please complete all entries, including the proper signatures, and fax to the HPTC Contact listed below.

Park: Allegheny Portage Railroad National Historic Site

Alpha Code: 4130

Region: NER

Date: 2/27/09

Project Title: Preserve Historic Railroad Culvert #1624

Home Org. 4130

Account Number: 4130-2912-CML

Fund Type: 0110

ALL ACCOUNT NUMBERS PROVIDED MUST BE DEDICATED FOR USE BY THE HPTC ONLY.

Authorized Amount: \$95,900.00

PMIS Number: #116948

Project ID No.: #1624

Funding Obligation Date:

9/25/09

Project Description:

This DCA request is for the preservation of historic railroad culvert no. 1624. Work to be completed is outlined in the Final Project Agreement and will correct defecience in the inlet arch voussoirs and associated barrel vault. This will help to keep the culvert in a state of high maintenance and in good condition.

APPROVALS

ALPO Contact: KEITH NEWLIN

Telephone Number: 814 886-6121

Fax Number: 814 886-6109

Signature: *Keith E. Newlin*

Date: 2/27/09

ALPO Budget Contact: DANETTE HUGHES

Telephone Number: 814-886-6115

Fax Number: 814-884-0206

Signature: *Danette Hughes*

Date: 2/27/09

HPTC Contact: Chris Robinson

Telephone Number: 301-663-8206

Fax Number: 301-663-8032

Date: 12/23/2008

HPTC Budget Contact: Carol J Burkhard

Telephone Number: 301-663-8206

HPTC Proj. Contact: Moss Rudley

Telephone Number: 240-285-6780

Narrative

Preserve Historic Railroad Culvert 1624

Allegheny Portage Railroad National Historic Site Gallitzin, PA

FY 09

PMIS # 116948

Project Narrative

This final Record of Treatment documents work performed by the Historic Preservation Training Center on Culvert 1624 during the month of July 2009. This document contains a summary of work completed, copies of the project agreement and various correspondences, an account summary and selected photographs.

Project History

In response to the Park's request for assistance, the Historic Preservation Training Center (HPTC) proposed to conduct preservation work that will stabilize and repair the existing masonry elements on the culvert inlet arch stones, wing walls, headwalls and renovate/correct the outlet wing wall coping stones.

The HPTC conducted a cursory site visit in January 2009 to visually examine and inspect several culverts in order to assist with assembling treatment recommendations in preparation for a day labor preservation effort. The visual site inspections provided the basis of information to better ascertain each of the culvert's existing conditions, environmental site conditions and preferred treatments for each.

The overall objectives of this project to repair, stabilize and preserve the extant masonry culvert inlet head wall, wing wall and swale features, was achieved preserving the original design and original construction materials

January 2009	Visual examination/inspection by Supervisory Exhibits Specialist
February 2009	Final Project Agreement submitted and signed
June 25, 2009	Pre Construction meeting.
June 29 2009	On site work begins
July 30, 2009	Project completed

Description of Project

Culvert No.1624 is part of the Allegheny Portage Railroad, the first railroad constructed over the Allegheny Mountains. This inclined plain railroad operated from 1834 until 1854 and was considered a technological wonder in its day, playing a critical role in opening the interior United States to trade and settlement. Allegheny Portage Railroad National Historic Site is located in

southwestern Pennsylvania approximately 12 miles west of Altoona. The main park unit contains the Summit Level Visitor Center, the historic Lemon House, Engine House #6 Exhibit Shelter, the Skew Arch Bridge, picnic area and hiking trails. Today's park covers 1249 acres.



It appears that Culvert No. 1624 is constructed of the same design as identified in other culverts examined and repaired throughout the park. The culvert is an arched, dry-laid, stone structure constructed of local Pennsylvania sandstone finished with coursed sandstone headwall and radial wing walls stones. The culvert is positioned with the inlet due south, diverting storm water north from the new railroad bed.

No construction documents were available for review. On-site measurements indicate that the culvert inlet measures approximately 17 feet

across at the wing walls and approximately 5' in height. This arch can either be classified as a Basket-handle arch or Tudor arch, it has a rise of 3' from stream bed to the bottom of the key stone and spans approximately 10' across.

The condition of the inlet elevation exhibited an advanced state of collapse. While there was not a catastrophic collapse of the arch voussoirs, they were bulging from the plane of the wall and dropped from their original positions towards the stream bed. The barrel's crown behind the arch is showing evidence of collapse, with displaced barrel stones evident on the west side. While construction details of other culverts have determined dry laid construction, the face of the inlet wall has been pointed with a Portland based mortar. Evidence supports the assertion that the inlet wall above the arch was a later repair. The wall is laid with a Portland mortar in a random ashlar bond. This is unlike all other culverts which are laid in coursed ashlar bonding throughout. It is evident from investigations that the arch was repaired at some point in the past with a large amount of concrete being used to fill in an area behind the arch stones where the barrel had collapsed. When this concrete was installed it appears that while locking the arch in place the pressure pushed the stones out of plumb and down. The purpose of this project was to fix the above stated problems and also relay several stones on the outlet side wing walls back to their original positions. Documentation of Culvert 1624 is limited to photography and field sketches.

Compliance

National Historic Preservation Act Section 106 and NEPA clearance for this project was obtained by the Allegheny Portage Railroad NHS. A copy of the compliance documents are furnished in this document.

Summary of Work

Work on this project was completed over a four week period. The project entailed removing eleven ring stones that have been pushed out of plumb. This occurred presumably when a later repair of the barrel was done by pouring concrete behind the stones. It was also discussed after looking at the section to be repaired that this inlet side of the culvert is a repair. The stone laid on this side is of an ashlar bond which is different than all the other culverts that are a strait running bond. All repair work however placed all stones back in there original positions in that ashlar pattern.



Pictures and field sketches were done of the inlet side of the culvert to insure that all rebuilding work coincides with the original work. Due to the uncertainty of how the rings stones would fall once the keystone was released installation of formwork was the first step. The pattern for the arch was traced from the outlet side and cut out of plywood. These two plywood sections were then connected with 2x10 studs. Excavation of the overburden was done down to the top of the concrete along the length of the head wall. The wall was then dismantled and reversed stacked down to the ring stones and stepped back at each end at an appropriate point to allow access to the needed areas. The eleven ring stones were then cut out of the concrete which had been poured around the rear of the stones causing the stones to push but also locking them into place. A stone chainsaw was used to cut each stone out. Using the saw the crew was able to make vertical cuts to release each stone. Holes were drilled on the top of each stone and lewis pins used to secure the stones to make sure no stones fell from position while being released. Eleven stones were removed and set to the side in order. With concrete revealed the depth of it was measured twenty two inches. With these stones out of the way the crew readjusted there formwork into a position for relaying the arch as opposed to supporting it. Minor adjustments to the form leveled and plumbed the formwork. Preparing the stones to be relaid each stone was dry fit into position to find the necessary adjustments needed for proper relaying. Some cutting was needed on both the stones and the concrete behind.

All stones were then laid. The head wall was then relaid with all stones being returned to there original position. One stone of the head wall was refaced due to damage done during the deconstruction. A smooth finish cap was then put on the top surface of the headwall. A raised bead joint was put on the joints of the head wall to match what had been there and a coarser sand was procured to get a match closer to the original texture.

Once completed the sunken area on top of the trace was addressed. Once uncovered it was found that several of the barrel stones had fallen out. Replacements from the park's stone pile were procured and fit into place. Two areas of the wing walls on the outlet side were addressed where several stones had been displaced.

Selected Photographs



Fig. 1 Cribbing for centering being levelled



Fig.2 Resetting ring stones



Fig.3 Ring stones reset



Fig. 4 Wall being rebuilt



Fig.5 Rebuilt wing wall section



Fig.6 Final inspection

Project Agreement



FINAL PROJECT AGREEMENT

PMIS#116948

PRESERVE HISTORIC RAILROAD CULVERT No. 1624

AT

ALLEGHENY PORTAGE RAILROAD

NATIONAL HISTORIC SITE

GALLITZIN, PA

February 13, 2009

RECOMMENDED: _____ DATE: _____
SUPERINTENDENT, HISTORIC PRESERVATION TRAINING CENTER

APPROVED: _____ DATE: _____
DEPUTY SUPERINTENDENT, WESTERN PENNSYLVANIA PARKS

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

I. DESCRIPTION OF PROJECT

Work to be executed under this Project Agreement consists of documentation, excavation, recording feature conditions, stabilizing and repair of the masonry elements associated with the inlet and outlet elevation of stone culvert No. 1624.

All tasks listed in Section IV, SCOPE OF WORK will be executed within the boundaries of Allegheny Portage Railroad National Historic Site (ALPO). The culvert is located approximately two miles west of Duncansville, PA., located on level 10 of the Portage Trace.

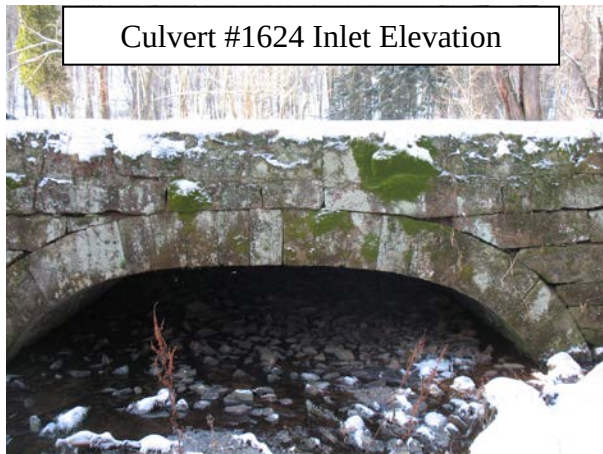
In response to the Park's request for assistance, the Historic Preservation Training Center (HPTC) proposes to conduct preservation work that will stabilize and repair the existing masonry elements on the culvert inlet arch stones, wing walls, headwalls and renovate/correct the outlet wing wall coping stones.

The HPTC conducted a cursory site visit in January 2009 to visually examine and inspect several culverts in order to assist with assembling treatment recommendations in preparation for a day labor preservation effort. The visual site inspections provided the basis of information to better ascertain each of the culvert's existing conditions, environmental site conditions and preferred treatments for each.

The overall objective of this project is to repair, stabilize and preserve the extant masonry culvert inlet head wall, wing wall and swale features, subsequently preserving much of the original design and original construction materials.

II. STRUCTURE DESCRIPTION

Culvert No.1624 is part of the Allegheny Portage Railroad, the first railroad constructed over the Allegheny Mountains. This inclined plain railroad operated from 1834 until 1854 and was considered a technological wonder in its day, playing a critical role in opening the interior United States to trade and settlement. Allegheny Portage Railroad National Historic Site is located in southwestern Pennsylvania approximately 12 miles west of Altoona. The main park unit contains the Summit Level Visitor Center, the historic Lemon House, Engine House #6 Exhibit Shelter, the Skew Arch Bridge, picnic area and hiking trails. Today's park covers 1249 acres.



Culvert #1624 Inlet Elevation

It appears that Culvert No. 1624 is constructed of the same design as identified in other culverts examined and repaired throughout the park. The culvert is an arched, dry-laid, stone structure constructed of local Pennsylvania sandstone finished with coursed sandstone headwall and radial wing walls stones. The culvert is positioned with the inlet due south, diverting storm water north from the new railroad bed.

No construction documents were available for review. On-site measurements indicate that the culvert inlet measures approximately 17 feet across at the wing walls and approximately 5' in height. This arch can either be classified as a Basket-handle arch or Tudor arch, it has a rise of 3' from stream bed to the bottom of the key stone and spans approximately 10' across.

III. STRUCTURE CONDITION

Visible inspection of the culvert indicates that the construction is typical of most of the other culverts within the portage railroad system. Currently, the outlet elevation of the culvert is in "Good" condition and only has minor displacement of coping level stones on the wing walls

The current condition of the inlet elevation exhibits an advanced state of collapse. While there has not been a catastrophic collapse of the arch voussoirs, they are bulging from the plane of the wall and have dropped from their original positions towards the stream bed. The barrel's crown behind the arch is showing evidence of collapse, with displaced barrel stones evident on the west side. While construction details of other culverts have determined dry laid construction, the face of the inlet wall has been pointed with a Portland based mortar. These joints have begun to crack, and are in an accelerated state of decay. While this may likely have contributed to trapping moisture behind the head wall, leaving it and barrel stones susceptible to repeated freeze/thaw cycles, there has not been a total collapse of the headwall arch. It is very evident from investigations that outside forces are acting on this feature and without treatment will eventually collapse. It appears that most of the building stones are intact in their original positions, some have become displaced slightly, none appear to have been lost or will need to be salvaged from the stream or swales. Documentation of Culvert 1624 is limited to photography and field sketches. As additional masonry is uncovered additional documentation will be completed.

It has been determined that the stone masonry culverts are necessary in each location to support the Portage Trace and is in keeping with the approved *Portage Trace Corridor Final Plan*.

All access to/from the culvert will be through the use of the historic portage trace roadbed.

The API (Asset Priority Index) for Culvert 1656 is 100 and the FCI (Facility Condition Index) is .299

IV. SCOPE OF WORK

The Historic Preservation Training Center will serve as preservation specialists for the work identified in the following tasks. All preservation work and practices performed by the HPTC will comply with the Secretary of the Interior's Standards for Historic Preservation.

The following treatment recommendations and scope of work will have many similar tasks associated with the culvert stabilization and reconstruction developed by HPTC for work completed at Culvert 1656 & Culvert 1532.

This project will involve a variety of tasks to include;

- Mobilization, Documentation & Demobilization
- Erosion Controls/Water Diversion
- Excavation & Selective Disassembly
- Building stone recovery
- Reconstruction of Stone Masonry
- Restore inlet and outlet swale & site grade conditions

TASK #1: MOBILIZATION/DOCUMENTATION/DEMOBILIZATION

MOBILIZATION:

Assemble and transport tools and materials to the designated staging area. (To be determined at the preconstruction meeting) Establish living quarters, office and storage facilities as a base of operation. Organize tools, equipment, and materials to facilitate the work progression sequence as scheduled. Prepare project site safety analysis plan. Install safety barricades around areas of work as necessary. Cordon off a safety perimeter to assist in the protection of pedestrians and property in the area. Post hard hat and any additional signage as may become necessary.

DOCUMENTATION:

HPTC will document all existing conditions and on-going stabilization work tasks with digital photograph including prints and electronic CD format. 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: EROSION CONTROLS/WATER DIVERSION

Prior to any work, silt barrier fencing will be installed on the inlet elevation. If required to execute work, a water transfer system will be installed on the inlet elevation catch basin to redirect water from entering the culvert during work hours of operation. Water transfer will incorporate silt fencing, hay bales and filter bags to prevent erosion of any disturbed areas per PDOT & NEPA requirements and Better Management Practices. Water transfer will be only during work hours and will be necessary for workers to install arch support forms and perform repairs to the barrel.

TASK # 3: REPAIRS @ CULVERT 1656 INLET

A: EXCAVATION & DOCUMENTATION OF EXISTING CONDITIONS

Excavation will be limited to 20' X 4' area above the culvert inlet head wall, with ground disturbance only necessary to reveal head wall, and collapsed barrel stones. With the use of a mini excavator, and hand implements excavation will impact the historic trace only directly above the barrel. It is estimated that an area from the head wall coping back into the historic trace about 4' will need to be excavated to expose the back of the head wall, while a selected area above the collapse in the barrel will have to be excavated to a depth of about 3' below the grade of the historic trace.

B: SELECTIVE DISASSEMBLY

Loose and displaced stone shall be removed to sound masonry. This will include the complete disassemble of the head wall stones and inlet arch voussoir. Stones will be cleaned, sorted and identified for re-location/replacement position during rebuilding tasks - head wall, wing wall, voussoirs & coping. An experienced stone mason will determine the definition of "sound masonry" and prepare/reinforce the wall sections for rebuilding tasks. .

C: RESET/REBUILD STONE MASONRY

Upon completion of work identified in tasks A/B, rebuilding and mending of the collapsed sections of barrel vault, head wall, wing walls and voussoirs/ring stones shall be executed. Wing wall & head wall and coping stone rebuild will be completed with cement and reset in the method to appear dry-laid, employing weeps and drainage ducts. The voussoirs/ringstones will be reset in the traditional manner. The strength of the proposed mix will be in the range of a Type 'N' which has a compressive strength of 750lbs.-950lbs / in² using either Natural Hydraulic Lime (NHL 5) or Masonry Cement.

D: CORRECT INLET SWALE & SITE CONDITIONS

After completion of all stabilization tasks and prior to replacement of removed soils a subsurface drainage system will be installed behind the head wall and above the barrel to help to remove some of the water that may have contributed to the bulging and pushing of the arch voussoirs. Excess materials and equipment shall be removed and all disturbed natural areas will be graded, seeded and mulched to contours that existed prior to construction unless directed by the Park to do otherwise.

V. DATA COLLECTION

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

PMIS Funding Request, Project Identification #116948,

HPTC Cursory Site Visit, January, 2009

Historic Structures Report Drawings, NPS, 1990

VI: COMPLIANCE

Section 106 clearance will be handled under the Memorandum of Agreement XXX process and

shall be obtained by the Park. Any necessary future compliance requirements will be the responsibility of the park.

Compliance with National Environmental Policy Act (NEPA Compliance) will also be the responsibility of the park.

VII: PROJECT COORDINATION

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

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

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 crew.

Provide crafts people to perform all construction activity outlined in section II, Scope of Work.

Provide weekly reports on project progress and activities.

Provide proper disposal facilities for and periodic collection of all construction debris associated with the HPTC's project work.

Maintain a project record and all documentation on all subject work. Prepare and distribute a Record of Treatment within six (6) months of the date of final inspection.

Provide for visitor access and protection while the project is ongoing.

Maintain work and staging area according to OSHA Regulations and Guidelines.

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

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

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

Provide a project staging area within the maintenance compound that offers secure and weatherproof storage for project supplies, tools and materials.

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

Designate a single administrative contact.

Provide to the HPTC within 60 days of the project Final Inspection the revised FCI _____(name of structure) as has been recalculated in the process of closing the park's FMSS Work Orders that described the project work completed by the HPTC in this Agreement.

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 ALPO. 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 ALPO 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.

VIII. SAFETY

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

GENERAL

A project-specific Safety Plan will be developed for this HPTC/ALPO project and made available to the client upon request. Each member of the project team will acknowledge their familiarity with the Plan by affixing their signature to the "Crew Sign-Off Sheet." The Plan designates the "Competent Person" for all OSHA regulated activities.

This HPTC/ALPO project is a hard hat area in compliance with OSHA regulations. All persons entering the designated work area will wear an approved hard hat at all times. The HPTC section chiefs are the only individuals who may grant exception to this HPTC policy. The HPTC Project Leader is responsible for ensuring that all activities are compliant with all safety-related issues.

Project leaders shall conduct weekly “tailgate safety meetings” with workers assigned to the project and file OSHA required records in the project file.

Project leaders shall ensure that all work activities are consistent with applicable health and safety regulations and the HPTC Safety Program.

ACCIDENT FORMS

On all HPTC projects, HPTC is responsible for reporting and investigating all accidents in accordance with HPTC's Safety Program (available upon request), laws and regulations.

Occupational Safety and Health Act - COMPLIANCE

All HPTC project work shall be conducted in accordance with OSHA regulations – 29 CFR Part 1926.

IX. PRODUCTS

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

1. Completion of preservation tasks as detailed in Section IV of this Project Agreement.
2. Preparation of a Record of Treatment for this project, 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 ALPO 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 ALPO 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.

X. ESTIMATED SCHEDULE

Draft Project Agreement:

February 2009

Final Project Agreement:

March 2009

Estimated Project Start Date:

June 2009

Project Completion Date:

July 2009

XI. PROJECT TEAM

HPTC: Moss Rudley, Project Supervisor

ALPO: Keith Newlin, Deputy Superintendent
Nancy Smith, Cultural Resource Specialist
Brad Aughinbaugh, Facility Manager
Kathy Penrod, Natural Resource Manager

XII. COST ESTIMATE

NOTE: HPTC 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/DEMOBILIZATION

Labor:	
(1) Exhibits Specialist @ 1 week	2,297
(1) Mason Worker @ 1 week	1,421
(1) Mason @ 1 week	1,946
SUBTOTAL	5,664

TASK #2: EROSION CONTROLS/WATER DIVERSION

Labor:	
(1) Exhibits Specialist @ ½ week	1,149
(1) Mason Worker @ ½ week	710
SUBTOTAL	1,859

TASK #3: REPAIRS @ CULVERT No. 1656 OUTLET

Labor:	
(1) Exhibits Specialist @ 3 weeks	6,891
(2) Mason Worker @ 4 weeks	11,368
(2) Mason @ 3 weeks	11,676
SUBTOTAL	29,935

ITEM #1: PROJECT RELATED COSTS

Porta-John @ 6 weeks	350
Contract - Crane Service @ 180 man hours	17,000
Equipment Rental (mini-excavator & skidsteer @ 2 wks)	2,000
Mortar, concrete & erosion control materials	1,000
Lodging/MI&E (\$70/\$39)	6,176
Treatment Report	1,000
Project Supervision	3,291
Tool Maintenance	850
NPS/GSA Motor Pool	2,765
SUBTOTAL	34,432

COST ESTIMATE SUMMARY

TASK #1.....	5,664
TASK #2.....	1,859
TASK #3.....	29,935
ITEM #1.....	34,432
SUBTOTAL	71,890
 HPTC Overhead	 23,964
ESTIMATED PROJECT TOTAL	\$95,854

XII. APPENDIX

- A. Preservation Work Assignment – General Guidelines
- B. HPTC's Design Change Approval form

XIII. 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.

Various aspects of this project offer different learning opportunities for those involved in its execution. HPTC shall make every effort to maximize the training potential of the project described in this Project Agreement by scheduling HPTC's staff, program participants, and Park personnel to appropriate project duties. General training objectives have been developed for this project and are listed below:

1. To document the existing conditions of a historic masonry structure using photographs and field sketches.
2. To prepare a condition assessment and treatment recommendations for a historic stone structure.

PRESERVATION WORK ASSIGNMENT - GENERAL GUIDELINES

To foster a better understanding of the Historic Preservation Training Center's (HPTC) programs and mission, and to enable Park staffs to develop a sense of ownership and feeling of personal involvement in the park project, we have developed the Preservation Work Assignment Program.

This program will be offered only if the assignment will afford a "good" training experience for the park staff. Factors such as project leader and crew skill, knowledge and experience levels, type of project, etc., will be considered before the assignment is offered.

The Project Supervisor or HPTC Superintendent will ask the Maintenance Chief of the host park if they would like any of their staff to work with our crew on the project. If they are agreeable, the park will identify employees. Developmental objectives will be established after meeting with the park staff.

Midway through the assignment, a progress report (Verbal if assignment is two weeks, written if longer) will be sent to the park staff to solicit their input about how the assignment is progressing. The Maintenance Chief and the HPTC Project Supervisor or HPTC Superintendent will solve any problems that have arisen.

At the end of the assignment, participants will be issued a training certificate, and evaluations will be sent to the participant, the Maintenance Chief/Supervisor, and the Project Leader.

The following criteria will be negotiated between the Maintenance Chief and HPTC Project Supervisor or HPTC Superintendent:

- ◆ Park staff must work the agreed upon number of days on the project in order to achieve the established objectives.
- ◆ Park staff will work the same schedule as the HPTC crew or as close to it as possible.
- ◆ Park staff must notify the HPTC Project Leader as soon as possible when their employee has called in sick or is taking annual leave. Likewise, the HPTC Project Leader will notify park staff when the crew must return to the HPTC before scheduled. This includes inclement weather arrangements.
- ◆ Park staff must take breaks and lunch period at the project site and not return to the maintenance yard.
- ◆ Park staff must work at the project site during their entire assignment and not leave to perform other park duties.
- ◆ Park staff must provide own tools.

If it is arranged for a park employee to come to the HPTC to work in the Shop, the Training Manager should be notified so that travel arrangements can be made. All of the other above information applies to this situation also.

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: _____
Initiator

Date:

Concur: _____
Project Supervisor

Date:

Concur: _____
Deputy Superintendent, HPTC

Date:

Concur: _____
Superintendent (Optional)

Date:

Approved: _____
Regional Historical Architect

Date:

Compliance

June 12, 2009

FILE COPY

Memorandum

To: Tom Stinedurf

From:

Subject: NEPA and Section 106 Clearance: Preserve Culvert 1624 (11600)

The park cultural and natural resource specialists have reviewed the proposed project/action and completed its environmental assessment documentation, and we have determined that there:

- will not be any effect on threatened, endangered, or rare species and/or their critical habitat,
- will not be any adverse effect on historical, cultural, or archeological resources, and
- will not be serious or long-term undesirable environmental or visual effects.

The subject proposed project/action(s), therefore, is/are now cleared for all NEPA and Section 106 compliance requirements as presented above. Project plans and specifications are approved and construction and/or project implementation can commence.

For the proposed project actions to be within compliance requirements during construction and/or project implementation, the following mitigations must be adhered to:

- No mitigations identified

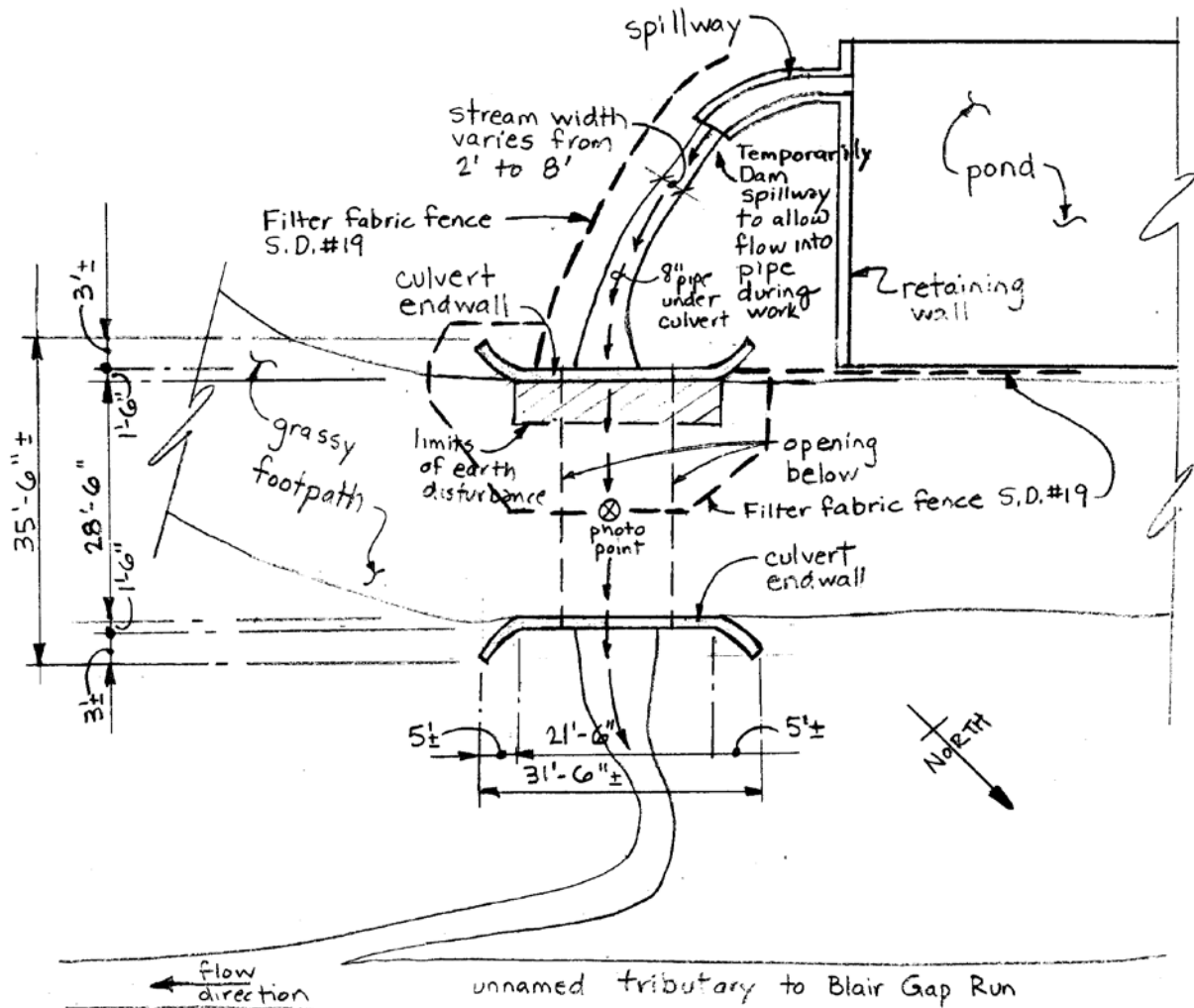
If you have any questions, please let me know.

SKETCH PLAN (if applicable)

- Erosion and Sedimentation
Control Plan
for project "Preserve Historic
Culvert 1624"

National Park Service
~~Allegheny Portage RR NHS~~
Applicant Name

Note: Property lines not shown,
exceeds 100 feet in all directions



Scale 1" = 20 ft.

Correspondence



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)

February 17, 2009

Memorandum

To: Superintendent, Pennsylvania Western Parks

From: Superintendent, Historic Preservation Training Center

Ref: PMIS #116948 – Preserve Historic Railroad Culvert No.1624
Allegheny Portage Railroad National Historic Site, FY-09

Subject: Transmittal of Final Project Agreement

Enclosed is the **FINAL** 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.

Prior to the start-up of this project, HPTC requests that an authorization of funds, adequate to cover the estimated cost of the project, be initiated. The enclosed Direct Charge Authorization form should be completed, and if applicable, may be an authorization to cross-charge a park account. The authorization should include reference to the project name, PMIS number if applicable, a not-to-exceed amount and the date on which the funds expire.

If we can provide any additional information regarding this document, please do not hesitate to contact Sarah Polzin, at (301) 663-8206 Ext 115 or Moss Rudley at (240) 285-6780, both of the HPTC .

H. Thomas McGrath

Enclosure

cc:

Keith Newlin, Superintendent, ALPO (w/enclosure)

Nancy Smith, Cultural Resource Manager, ALPO

Kathy Penrod, Natural resource Manager, ALPO

Tom Stinedurf, Chief Law Enforcement, ALPO

Brad Aughinbaugh, Facility Manager, ALPO



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)

June 22, 2009

Memorandum

To: Superintendent, Pennsylvania Western Parks

From: Superintendent, Historic Preservation Training Center

Ref: PMIS #116948 – Preserve Historic Railroad Culvert No.1624
Allegheny Portage Railroad National Historic Site, FY09

Subject: Pre-Construction Meeting

A pre-construction meeting has been scheduled for Thursday, June 25 to begin at 9 am on-site at Culvert 1624. This will be an opportunity for ALPO officials and HPTC project leads to discuss project related issues including: scope of work, project contacts, work hours, safety, project coordination, site use, park rules and regulations, and security.

I would anticipate the meeting lasting about 1 hour to discuss the above topics and make the decisions needed to begin the project.

I ask for your attendance as it key in providing the needed cooperation and coordination between our respective units.

Thank you and I look forward to meeting with you.

Sincerely,

H. Thomas McGrath

Enclosure

cc:

Keith Newlin, Superintendent, ALPO (w/enclosure)

Nancy Smith, Cultural Resource Manager, ALPO

Kathy Penrod, Natural resource Manager, ALPO

Tom Stinedurf, Chief Law Enforcement, ALPO

Brad Aughinbaugh, Facility Manager, ALPO



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)

July 30, 2009

Memorandum

To: Deputy Superintendent, Western Pennsylvania Parks

From: Superintendent, Historic Preservation Training Center

Ref: PMIS #10984 – Disassembly & Reconstruction of the Portage Monument
PMIS #116948 – Preserve Historic Railroad Culvert No.1624
Allegheny Portage Railroad National Historic Site, FY09

Subject: Final Inspection Meeting

The subject meeting has been scheduled for Tuesday August 11, 2009. The meeting is scheduled to begin at the Portage Monument at 10:00 a.m. We will then move to Culvert 1624 to conclude the meeting. Your attendance and/or attendance by members of your staff is requested and encouraged.

If there are any questions or comments, please direct them to either Sarah Polzin or Moss Rudley, both of the Historic Preservation Training Center, at (240) 285-6780 or (301) 663-8206.

H. Thomas McGrath

Enclosure

cc:

Keith Newlin, Superintendent, ALPO (w/enclosure)

Nancy Smith, Cultural Resource Manager, ALPO

Kathy Penrod, Natural resource Manager, ALPO

Tom Stinedurf, Chief Law Enforcement, ALPO

Brad Aughinbaugh, Facility Manager, ALPO



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)

August 11, 2009

Memorandum

To: Superintendent, Historic Preservation Training Center

From: Project Supervisor, Historic Preservation Training Center

Ref: PMIS #10984 – Disassembly & Reconstruction of the Portage Monument
PMIS #116948 – Preserve Historic Railroad Culvert No.1624
Allegheny Portage Railroad National Historic Site, FY09

Subject: Final Inspection Meeting Minutes:

The subject meeting was conducted on Tuesday August 11, 2009 at 10am. The meeting began at the Portage Monument and then moved to Historic Culvert No. 1624. The following people were in attendance:

Nancy Smith, Cultural Resource Manager, ALPO
Brad Aughinbaugh, Facility Manager, ALPO
Moss Rudley, Project Supervisor, HPTC
Lucas Flickinger, Project Leader, HPTC

Work completed on both projects was inspected by Park personnel, the HPTC project leads answered some minor technical questions and finished one final punch-out item. All work was accepted by the park who was especially pleased with the craftsmanship, professionalism, and dedication of the crew involved. As a result the project was completed safely and with limited glitches. It was a successful endeavor for both parties.

Moss Rudley

Project Supervisor

Enclosure

cc:

Keith Newlin, Superintendent, ALPO (w/enclosure)

Nancy Smith, Cultural Resource Manager, ALPO

Kathy Penrod, Natural resource Manager, ALPO

Tom Stinedurf, Chief Law Enforcement, ALPO

Brad Aughinbaugh, Facility Manager, ALPO

Weekly Reports

HISTORIC PRESERVATION TRAINING CENTER (HPTC)
WEEKLY FIELD REPORT #1
FY-09

PARK: Allegheny Portage Railroad National Historic Site

PROJECT: Preserve Historic Railroad Culvert No. 1624

DATE: 7-2-09

WEEK ENDING: 7-2-09

GENERAL

After finishing tasks on the monument the crew, due to the shortened holiday week had a day to begin work on Culvert 1624.

WORK PERFORMED THIS WEEK

The project entails removing eleven ring stones that have been pushed out of plumb. This occurred presumably when a previous repair of the barrel was done by pouring concrete behind the stones. It was also discussed after looking at the section to be repaired that this inlet side of the culvert is a repair. The stone laid on this side is of an ashlar bond which is different than all the other culverts that are a strait running bond. All repair work however will replace all stones back in there original positions in that ashlar pattern. Site orientation was done with the crew and erosion controls installed as per the park supplied plan. The crew began formulation of work plan to achieve the required results. Initial work on building a form to support the arch was laid out. Due to the uncertainty of how the rings stones would fall once the keystone was released installation of formwork was the first step. The pattern for the arch was traced off of the outlet side and cut out of plywood. These two plywood sections were then connected with 2x10 studs. This work finished out the week.

PROJECTED WORK FOR THE UPCOMING WEEK

- Setting of centering under arch
- Removal of overburden
- Head wall dismantling
- Arch stone removal
- Begin relaying
- Prep outlet side stones for relaying

VISITORS TO THE SITE

Various park staff throughout the week

SAFETY

This week's safety meeting addressed all of the primary safety concerns for the scope of the project.

WEATHER

Monday	Tuesday	Wednesday	Thursday
81/55 degrees	82/57 degrees	81/56 degrees	82/58 degrees

PERSONNEL ASSIGNED TO THE PROJECT

- (1) Exhibits Specialist
- (1) Crafts Trainer
- (1) Maintenance worker

RECAP

Starting Date: 07-1-2009
Projected Completion Date: 7-30-2009
Percentage Completed: 5 %
Starting Balance: \$

/signed/
Lucas Flickinger
Project Leader, HPTC

cc mail:
ALPO: Keith Newlin, Superintendent,
Brad Aughinbaugh, Chief of Maintenance, ALPO
Nancy Smith, ALPO
Kathy Penrod, ALPO

HISTORIC PRESERVATION TRAINING CENTER (HPTC)
WEEKLY FIELD REPORT #2
FY-09

PARK: Allegheny Portage Railroad National Historic Site

PROJECT: Preserve Historic Railroad Culvert No. 1624

DATE: 7-9-09

WEEK ENDING: 7-9-09

GENERAL

Work started in earnest this week with excellent progress made. No significant progress meetings have been conducted.

WORK PERFORMED THIS WEEK

Documentation was the first task this week. Pictures and field sketches were done of the inlet side of the culvert. These will insure that all rebuilding work coincides with the original work. Excavation of the overburden was done down to the top of the concrete along the length of the head wall. The wall was then dismantled and reversed stacked down to the ring stones and stepped back at each end at an appropriate point to allow access to the needed areas. The eleven ring stones were then cut out of the concrete which had been poured around the rear of the stones causing the stones to push but also locking them into place. A stone chainsaw was used to cut each stone out. Using the saw the crew was able to make vertical cuts to release each stone. Holes were drilled on the top of each stone and lewis pins used to secure the stones to make sure no stones fell from position while being released. Eleven stones were removed and set to the side in order. With concrete revealed the depth of it was measured at twenty two inches. With these stones out of the way the crew readjusted there formwork into a position for relaying the arch as opposed to supporting it. Minor adjustments to the form leveled and plumbed the formwork. Preparing the stones to be relaid each stone was dry fit into position to find the necessary adjustments needed for proper relaying. Some cutting was needed on both the stones and the concrete behind. By the end of the week five stones had been reset. Prep work on the outlet side was initiated work included vegetation removal and cleanout being accomplished in two areas were stones have fallen out of position.

PROJECTED WORK FOR THE UPCOMING WEEK

- Relaying of final ring stones
- Relaying of head wall
- Major site cleanup

VISITORS TO THE SITE

Various park staff throughout the week

SAFETY

No safety incidents this week

WEATHER

Monday	Tuesday	Wednesday	Thursday
79/57 degrees	80/56 degrees	78/58degrees	79/54 degrees

PERSONNEL ASSIGNED TO THE PROJECT

- (1) Exhibits Specialist
- (1) Crafts Trainer
- (1) Maintenance worker
- (1) STEP Employee

RECAP

Starting Date: 7-1-2009
Projected Completion Date: 8-1-09
Percentage Completed: 30 %
Starting Balance: \$95,854

/signed/

Lucas Flickinger
Project Leader, HPTC

cc mail:

ALPO: Keith Newlin, Superintendent,
Brad Aughinbaugh, Chief of Maintenance, ALPO
Nancy Smith, ALPO
Kathy Penrod, ALPO
HPTC: McGrath, Robinson, Polzin, Rudley, Flickinger

HISTORIC PRESERVATION TRAINING CENTER (HPTC)
WEEKLY FIELD REPORT #3
FY-09

PARK: Allegheny Portage Railroad National Historic Site

PROJECT: Preserve Historic Railroad Culvert No. 1624

DATE: 7-16-09

WEEK ENDING: 7-16-09

GENERAL

Work continued this week with the bulk of the project nearing completion

WORK PERFORMED THIS WEEK

Continuing from last week the final six ring stones were fitted into place to determine what areas would need to be cut to allow the stones to be laid plumb. All stones were then laid. The head wall was then relaid with all stones being returned to there original position. One stone of the head wall was refaced due to damage done during the deconstruction. A smooth finish cap was then put on the top surface of the headwall. Work began on the raised bead joint that will be used on the inlet joints. Coarser sand was procured to get a closer match to the original texture.

PROJECTED WORK FOR THE UPCOMING WEEK

- Pointing of all reset work
- Begin repairs to barrel vault
- Reset displaced stones on outlet elevation
- Removal of formwork

VISITORS TO THE SITE

Various park staff throughout the week

SAFETY

No safety incidents this week

WEATHER

Monday	Tuesday	Wednesday	Thursday
79/55 degrees	80/54 degrees	78/56degrees	79/57 degrees

PERSONNEL ASSIGNED TO THE PROJECT

- (1) Exhibits Specialist
- (1) Crafts Trainer
- (1) Mason
- (1) Maintenance worker
- (1) STEP Employee

RECAP

Starting Date: 7-1-2009
Projected Completion Date: 8-1-09
Percentage Completed: 70%
Starting Balance: \$ 95,854

/signed/
Lucas Flickinger
Project Leader, HPTC

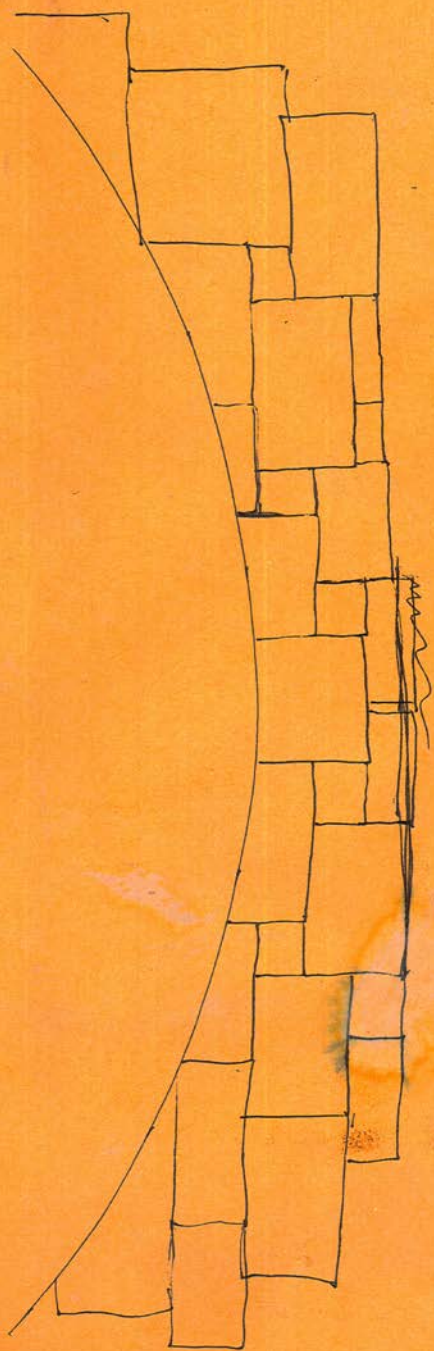
cc mail:
ALPO: Keith Newlin, Superintendent,
Brad Aughinbaugh, Chief of Maintenance, ALPO
Nancy Smith, ALPO
Kathy Penrod, ALPO

Material Data/ Vendors

<u>PROJECT TITLE:</u> Preserve Historic Railroad Culvert 1624		
<u>PROJECT ADDRESS</u> Allegheny Portage Railroad NHS, Gallitzin Pa		
<u>PROJECT FEATURE:</u> Culvert 1624		
VENDOR	ADDRESS	PHONE
Fiore Brothers	5506 Sixth Avenue Rear Altoona PA 16602	814-946-3686
Lowe's	5611 Buckeystown Pike Frederick MD 21704	301-668-3350
RSC	947 Route 22 Duncansville, PA	814-696-4151
Performance Powder Coating	502 C Highland St Frederick, MD 21701	
Home Depot	5517 Urbana Pike Frederick MD 21704	301-620-0571
Fastenal	4635 Wedgewood Blvd, Frederick MD 21703	301-620-2616
Blair Welding	2210 Urbana Pike Ijamsville, MD 21754	301-831-8600
Karen Fix Conservation Artisans	111 National Lane Williamsburg, VA	
Say-core	132 Block Road Portage PA 15946	814-736-8018
Cresson Feed Mill	402 Second Street Cresson, PA 16630	814-886-4171
Wicklow INC	105 Commercial Lane Gallitzin, PA 16641	814-886-5594

VENDOR	ADDRESS	PHONE
Ace Hardware	Duncansville, Pa	814-695-9825
Seymore Bros. Inc.	4221 Sixth Ave Altoona PA 16602	814-944-2074
Bolt Depot Inc.	286 Bridge St. North Weymouth, MA 02191	1-866-337-9888
Hilti	5400 South 122 nd East Ave Tulsa, OK 74146	1800 879-8000
Skid Steer	5874 Milwaukee Rd Bellingham, WA 98226	360-966-2538
Fi-Hoff Concrete	240 Bentwood Ave Johnstown, PA 15904	814-266-5834
Wye Motor Lodge	Duncansville, PA	

Field Drawings



WHL #1624

