



**Environmental Assessment
DRAFT
Point of Rocks Pivot Bridge
Deck Replacement Project**

**National Park Service
Chesapeake and Ohio Canal National Historical Park**



June 2004

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**Environmental Assessment for the Point of Rocks Bridge
Deck Replacement Project**

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) provides decision-makers with information regarding the repair of the vehicular bridge at Point of Rocks, Maryland. The bridge is a historic feature of the Chesapeake and Ohio Canal National Historical Park (C&O Canal NHP). The purpose of this document is to disclose the expected effects to the environment and the historic structure associated with the proposed preservation project.

The original bridge at Point of Rocks was designed as a pivot bridge in the early 1830s. The pivot bridge design was a direct response to canal neighbors' access to the Potomac River while holding down construction costs for the canal company. All permanent bridges spanning the canal above Georgetown had 17 feet of clearance, as noted in an 1852 report by Chesapeake and Ohio Canal Company General Foreman Charles Fisk. The pivot bridges were able to be lower than the 17 feet because they would pivot on the center pier allowing canal boats safe passage past the structure. The Point of Rocks pivot bridge was modified to be a fixed structure by the mid-1840s. The current bridge is a fixed, non-historic steel and wood composite structure, circa 1978, that rests on the historic masonry abutments and center pier.

Park visitors, emergency and law enforcement officials, and park maintenance staff actively use the bridge. It provides access to the park and to the Point of Rocks boat ramp on the Potomac River. There is day-use parking near the boat ramp for the park's towpath users. Many park visitors use Point of Rocks as their destination to discover and explore the historic features of the park while others use the towpath for hiking, biking, and equestrian rides. The bridge is single lane. As a result, on-coming traffic must yield to vehicles that are in the process of crossing the bridge. Pedestrians use the bridge to either access the park for day-use activities or, in the case of visitors on a multi-day hike/bike trip, to access the stores and amenities offered in Point of Rocks.

The bridge is adjacent to two mainline CSX railroad tracks, with the potential for establishment of a third track. The road to the bridge, as the entrance to the park, crosses these tracks. The bridge is elevated over the remains of the canal prism. As a result, there is a short, steep ramp between the railroad tracks and the bridge deck.

The Federal Highway Administration (FHWA) routinely inspects all bridges within the park that convey vehicles. Based on their December 6, 2001 report, the bridge was not safe to carry its listed load rating without substantial repairs. The repair list included cleaning and painting the structural steel and bearing seats, replacement of timber deck planks and runners, repointing of masonry mortar joints as necessary, patching both approaches as necessary, and posting the bridge for a 10-ton limit. Due to this inspection, the C&O Canal NHP staff was obligated to evaluate the situation and develop recommendations for the bridge. Several objectives were developed for the proposed project. These included:

- Safety - Lower the elevation of the bridge by one masonry course to provide a better line of sight for vehicles exiting the park. This was listed as a primary concern due to the proximity of the bridge to the railroad tracks. If a vehicle is in the process of exiting the park, then an

incoming vehicle (often towing a boat trailer) might have to halt on the tracks and wait for clearance on the bridge.

- Bring the bridge up to FHWA specification to a class H15 (15 tons). The existing operational weight of 10 tons is not functional due to the types of vehicles and equipment that use the bridge. The bridge will remain a single lane structure. The H15 rating is also consistent with the weight restrictions for the park's towpath.
- Retain access to the boat ramp and park day-use area at Point of Rocks.
- Maintain the historic fabric to the *Secretary of Interior's Standards for Historic Preservation* so that the bridge will be available for current and future generations, as mandated by the Organic Act of 1916.
- Develop and enhance community relationships through opportunities such as partnerships.
- Return the towpath to its original alignment.

The EA presents information on the range of alternatives, including the "No Action" alternative (Alternative 1), as required in the guidelines for EAs in the National Environmental Policy Act (NEPA).

Based on the above information and criteria, four alternatives were proposed. Alternative 2A is the preferred alternative. This proposal will provide for a lowering of the stone abutments by one course, approximately 12 inches, to provide better line of sight for vehicles crossing the bridge. Due to the close proximity to the railroad tracks, better line of sight is necessary to provide as much safety as possible for park visitors. The stone abutments and center pier, due to some shifting of the stone and some stress fractures, will be dismantled and rebuilt in accordance with the *Secretary of Interior's Standards for Historic Preservation*. This masonry preservation work will ensure that the bridge decking is resting on sound masonry. The preferred alternative calls for the total replacement of the bridge decking to bring the weight loading to the H15 standard. Steel beams will provide the structural support for the weight upgrades. The H15 rating will allow standard weight rescue and law enforcement vehicles, recreational vehicles, and boats to safely cross the structure. This alternative will allow the continued use of the boat ramp and day-use area. This alternative presents an opportunity to develop a partnership with an area manufacturer. The park has approached Canam Steel Corporation, Point of Rocks, regarding the project. They have expressed a desire to be a partner for this project. If this alternative is approved, they will work in conjunction with the park engineering staff to design the steel components for the bridge. They will produce the designed structural steel and will assist in the placement of the steel on the abutments. This partnership has many benefits. It promotes goodwill between the National Park Service (NPS) and the community, and gives them sense of ownership and pride to the community. It helps defray the project costs to enable a better project to be undertaken.

The preferred alternative will also address the relocation of the towpath back to its original historic alignment. The B&O Railroad's construction of tracks after the closure of the canal forced a towpath detour for approximately 400 feet. The existing towpath alignment is along the access road from the foot of the pivot bridge to the boat ramp forcing pedestrians to share the road with vehicles. Under this alternative, the towpath will be re-established along the edge of the canal where it historically was; and pass under the bridge, separating pedestrians and vehicles.

PUBLIC REVIEW INFORMATION

For further information, you may access our web site or contact:

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Comments on this document may be submitted in writing on the following comment form. Written comments can be mailed or emailed to Superintendent Brandt at the above listed addresses. All comments must be received within 30 days of the publication of this document.

Copies of the Environmental Assessment are available for public review at the C&O Canal NHP Headquarters at the above listed address or at the following location:

Point of Rocks Post Office
1597 Bowis Drive
Point of Rocks, MD 21777
(301) 874-2131

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1.0 PURPOSE AND NEED

1.1 BACKGROUND

The Chesapeake and Ohio Canal Company was established in 1825 to construct a transportation system connecting Georgetown, District of Columbia, with points west. The Potomac River was not navigable at many locations, so the idea of a canal had been established with the creation of the Patowmack Canal Company, presided over by George Washington. The Patowmack Company built a series of skirting canals. The C&O Canal Company acquired the rights to the Patowmack Company and broke ground in 1828. The 185-mile long canal was completed in 1850, paralleled the Potomac River on the Maryland shoreline, and connected Georgetown with Cumberland, Maryland. A lack of funding precluded the canal's extension west from Cumberland to the headwaters of the Ohio River.

From the beginning, many challenges were met and the construction of the canal, to this day, is an engineering marvel. Masonry features, such as lift locks, culverts, waste weirs, dams, river and guard locks were primarily constructed by immigrant stone masons. The 11 aqueducts that spanned Potomac River tributaries were engineering masterpieces. The canal's towpath was often adjacent to the Potomac River and stone armor was established on the riverbank to reduce erosion during high-water events. Bridges spanned the canal in numerous locations to provide area communities, farms, and tradesmen access to the river. Many fords existed to connect [West] Virginia and Maryland. The canal transported many commodities, including farm produce and Western Maryland bituminous coal. At one point, there were over 500 canal boats in operation. However, by the late 1870s, competition from the Baltimore & Ohio Railroad placed the canal operations in an economic downswing. Additionally, with the canal's location along the Potomac River, it was subject to the forces of nature. Numerous floods impacted the canal during its operational period. After the flood of 1924, the canal was no longer a practical form of transportation and was abandoned. Since federal government ownership, beginning in 1938, five major floods have impacted the historic resources of the canal.

1.2 THE CREATION OF A PARK

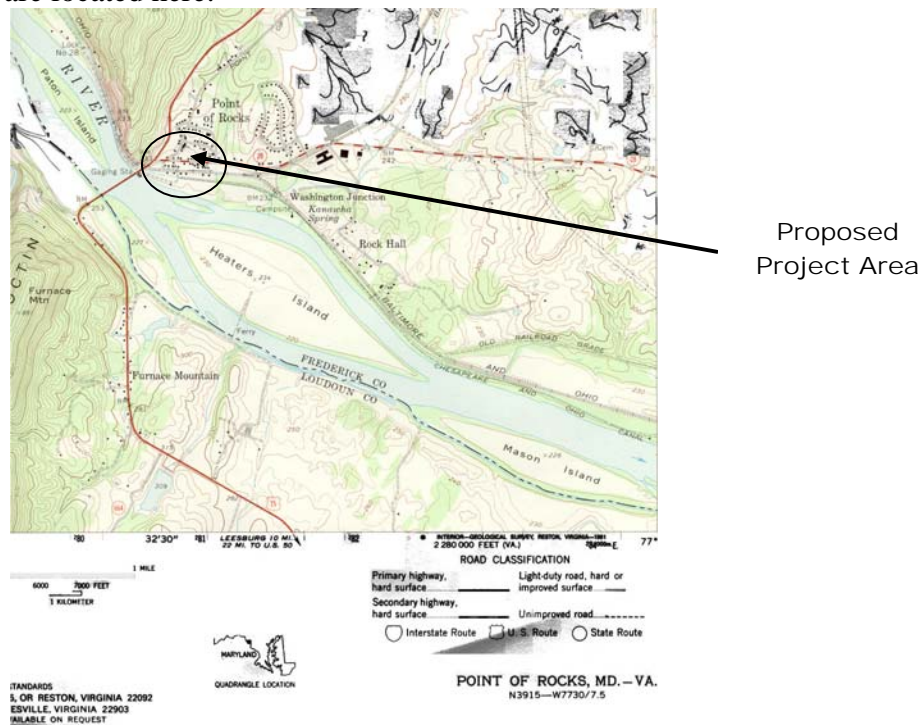
The C&O Canal was under financial ownership of the B&O Railroad in 1924 when it was abandoned. In 1938, the railroad transferred ownership of the canal to the U.S. Government for payment of back taxes. The 185-mile long canal was soon placed under the jurisdiction of the National Park Service. The use of the property spawned many discussions that culminated in the proposal of a scenic parkway. It was the foresight of Justice William O. Douglas, of the Supreme Court of the United States, which changed the minds of the government and the public. During a publicized hike in March 1954, Justice Douglas brought focus to the unique cultural and natural resources within the boundaries of the C&O Canal.

In 1961, the C&O Canal was declared a National Monument and in 1971, President Richard M. Nixon signed the legislation that established the Chesapeake and Ohio Canal National Historical Park.

Today the canal remains virtually unbroken and without substantial modification to its original character. It is also the most intact example of the American canal-building era. It allows the park visitor and scholar alike to study 19th-century canal-building technology with its 74 lift locks, the 11 stone aqueducts, seven dams, hundreds of culverts that carry roads and streams beneath the canal, and a 3,118-foot tunnel that carries the canal through a mountain at the Potomac's Paw Paw Bends. The C&O Canal is listed on the National Register of Historic Places, and is recognized as a nationally significant historic district.. The bridge at Point of Rocks is a contributing feature for this classification.

In addition to the historic resources, the C&O Canal NHP is also the host to a wide variety of natural resources, some with outstanding significance. The park has 19,236 acres. The park settings range from densely urbanized Washington, D.C. through pastoral farm county and forests near Cumberland, Maryland. With the park located along the banks of the Potomac River, it is part of the Chesapeake Bay ecosystem. The park protects the floodplain forests and wetlands. These important features help to slow waters during flooding and absorb run-off nutrients from surrounding lands.

The canal begins on the Upper Coastal Plain and, as it winds westward, transects portions of the Piedmont, Blue Ridge, and Ridge & Valley physiographic provinces. As a result, the park's landscape results in a rich geologic, ecological, and biological diversity. Park resources are also influenced by the Potomac River. Interesting geologic formations exist in the park such as the Great Falls of the Potomac and limestone caves. Native plant communities such as mid-Appalachian shale barrens, limestone forests, floodplain forests, and wetlands and some of the very best examples of scoured bedrock terrace habitat in the eastern U.S. are found within the park. Plants and animals common to these habitats as well as significant numbers of state and nationally rare species are located here.



1.3 PURPOSE AND NEED

The existing bridge has been modified and rebuilt numerous times throughout its existence. A full historic account is presented within the Affected Environment section of this report. The bridge has been used by automobiles since the early 1900s. With normal wear and tear, plus flooding impacts, the bridge has needed frequent maintenance and repairs to remain in service.

The bridge location, adjacent to the multi-track CXS railroad line, presents safety concerns. Access to the park and boat ramp is from Maryland Route 28. Vehicles must cross the railroad tracks to access the bridge. The single-lane bridge is six feet higher than the tracks with a short and steep approach at the north abutment, next to the tracks. The south abutment of the bridge has an 11 foot difference from the boat ramp roadway to the bridge deck. As a result, drivers have a difficult time spotting oncoming bridge traffic. This is especially critical when an outbound vehicle causes an inbound vehicle to halt close to or on the railroad tracks. The primary objective for this project will be to improve the safety situation of driver ingress and egress to the park. The 11 foot elevation difference on the south end of the bridge will be addressed with a reduction in the total rise, thus creating a better line of sight. Additionally, the masonry abutments contain a single course of stone that is a mismatch to the remainder of the feature. This mismatched stone is the first course below the coping course. This coursing of stone is the existing support for the bridge span. This course of stone is too narrow to provide adequate support of the bridge span. It is believed that some of the structural failure of the abutments can be traced to this mismatched course. With the removal of this course, the level of the bridge will be lowered approximately one foot and will contribute to an improved line of sight for bridge users and will allow the new span to rest on stouter masonry.

During the canal era, the B&O Railroad passed through a tunnel upstream of the bridge. This was necessary due to the C&O Canal's occupation of the land between the cliffs and the Potomac River. With the closure of the canal in 1924, the B&O Railroad, now CXS, eventually built the tracks outside the cliffs. In the mid-1950s, the current track configuration was established. The tunnel was converted to a single track to accommodate the larger diesel engines used for the freight trains. As a result, the train tracks severely impacted the canal and towpath. The towpath alignment along the edge of the canal was rerouted onto the boat ramp roadway. The boat ramp road was the U.S. Route 15 right of way until 1939 when the existing Route 15 bridge was built.

This project plans to return approximately 400 linear-feet of towpath back to its original location. With this plan, the cultural landscape of the pivot bridge area will have the towpath passing under the bridge. It will also resolve pedestrian safety by the separation of pedestrians and vehicles.

By 2001, the existing bridge had noticeable deterioration to the bridge span, the masonry abutments, and center pier. In late 2002, visual inspections of the bridge abutments yielded disturbing structural fractures that were felt to be a direct effect from the design of the existing bridge span. In 2001, the Federal Highway Administration had issued their inspection report for the Point of Rocks bridge. It stated that continued service of the bridge could be accomplished by specific corrective tasks, but the weight limit needed to be posted at 10 tons. With the

potential for heavier rescue type vehicles needing to access the Potomac River and the substantial costs for the outlined repairs, the park made the decision to take the bridge out of service. In 2003, the deck was removed and the masonry abutments were evaluated for repairs. The masonry repairs began in 2003 to stabilize and address the source of the stress fracturing. During the summer of 2003, park masons began repairs to the stone abutments. Regardless of the selected alternative, the stone abutments are being repaired in accordance with the *Secretary of Interior's Standards for Historic Preservation and NPS-28 Cultural Resources Management Guide*. With the existing deck removed, the park engineering staff could evaluate the structural strength of the abutments and explore various deck designs that will meet both engineering and cultural resources standards.

The park's compliance committee started project reviews in early 2003 with a site visit. It was proposed to take the bridge out of service and construct a temporary vehicle causeway (bypass) adjacent to the bridge through the canal prism. This would allow the park engineering staff to conduct a structural investigation of the bridge while keeping the park and boat ramp accessible to the public. The temporary causeway was installed in February 2003. To build the causeway, six mature trees were removed from the canal prism. Filter fabric was installed to provide a visual marker for the existing canal prism profile. Fill was placed over the filter fabric. The causeway was built as a temporary measure with the intention of removal.

Several designs were developed based on the site/structure investigations. The National Environmental Policy Act (NEPA) process was begun at that time. The initial project, under NPS NEPA guidelines, seemed to qualify for Categorical Exclusion 3.4 C(4), "Routine maintenance and repairs to cultural resource sites, structures, utilities, and grounds if the action falls under an approved Historic Structures Preservation Guide or Cyclic Maintenance Guide, or if the action will not adversely affect the cultural resource." Under the consultation aspect of both NEPA and Section 106 of the National Historic Preservation Act, The Maryland Historical Trust was contacted for their review of the project. They determined that the proposed action of permanent removal of the upper coursing of stone on the abutments constituted an adverse effect to the cultural structure. They were in support of the safety aspect for the lowering of the bridge, but the action, as an adverse effect, would need mitigation. The Maryland Historical Trust and the National Park Service will enter into a Memorandum of Agreement. This agreement will address the mitigation measures that the Historical Trust deem appropriate.

1.4 PROJECT OBJECTIVES

Criteria for the development of the project included:

- Safety - Lower the elevation of the bridge by one masonry course to provide a better line of sight for vehicles exiting the park. This was listed as a primary concern due to the proximity of the bridge to the railroad tracks. If a vehicle is in process of exiting the park, then an incoming vehicle (often towing a boat trailer) might have to halt on the tracks and wait for clearance on the bridge.
- Bring the bridge up to FHWA specification to a class H15 (15 tons). The existing operational weight of 10 tons is not realistic due to the type of vehicles and equipment that

use the bridge. The bridge will remain a single lane structure. The H15 rating is also consistent with the weight restrictions for the park's towpath.

- Retain access to the boat ramp and park day use area at Point of Rocks.
- Maintain the historic fabric to the *Secretary of Interior's Standards for Historic Preservation* so that the bridge will be for the public and future generations as mandated by the Organic Act of 1916.
- Develop and enhance community relationships through opportunities such as partnerships.
- Return the towpath to its original alignment.

1.5 RELATIONSHIP TO OTHER PROJECTS AND PLANNING

The preservation and improvements to the park's Point of Rocks bridge is second of four projects planned within Point of Rocks.

The first project is a Maryland state undertaking. Located at Point of Rocks is a commuter train station administered by the Maryland Department of Transportation/Maryland Transit Authority (MTA). Commuters heavily use the MARC (Maryland Rail Commuter Service) to access Washington, D.C. The MTA conducted an environmental assessment to evaluate the possible alternatives to upgrade the MARC station and parking area. Their finalized EA was issued in May 2003. Within the EA, the preferred alternative outlines expansion and redesign of the parking lot areas of the property. This includes the acquisition of additional property to enlarge the parking facilities. The parking lot is located adjacent to the CSX railroad lines and within sight of the C&O Canal NHP. Park visitors often use the MTA parking area on weekends.

C&O Canal NHP staff participated in the public meetings and review conducted by MTA for their project. Coordination of project planning and design between MTA and NPS will be undertaken to construct a new entrance road that will connect Maryland Route 28 with the C&O Canal. The current paved access road is located extremely close to the Routes 28 and 15 intersections. Due to this proximity, it is extremely dangerous to either pull into or pull out of the access road. Under the MTA project, a new entrance road will be attached to their parking area, thus moving the access road intersection further away from the Route 28/15 intersection. The existing access road will be closed to public access upon completion of the new road.

The third project in the area will be the park's undertaking of improvements to the boat ramp area at Point of Rocks. This project is planned to begin in 2006 when funding is projected to be available. Proposed improvements will address the deteriorated boat ramp and day-use parking. A proposed picnic area has also been discussed. This project will require an environmental assessment to be undertaken. While the boat ramp and bridge projects are adjacent to each other and are both NPS projects, they are separate undertakings.

The fourth project is a community project to design and develop green space areas adjacent to the MARC parking area and the C&O Canal. Planning charrettes have been conducted by area community leaders to define objectives and goals for the project. NPS and MARC representatives have participated in the design reviews.

1.6 ISSUE AND IMPACT TOPICS

The project development will take into account the following significant impacts and issues to aid in the development of this environmental assessment. These will be discussed further under the Affected Environment chapter of this environmental assessment.

- Public Safety
- Cultural Resources
 - Pivot bridge
 - Historic landscapes and view sheds
 - Point of Rocks eligible structures
- Natural Resources
 - Threatened and Endangered Species
 - Wetlands and flood plains
 - Natural landscapes and viewsheds
- Socioeconomic Impacts
- Visitor Use and Experience
- Park Operations

1.7 ISSUES AND IMPACTS CONSIDERED BUT DISMISSED

The following topics were dismissed from further analysis:

- Air quality
This topic was dismissed as there will be no change in the proposed use of the area. There will be some temporary impacts with the use of motorized equipment during construction, but these are not viewed as significant. The project site, being adjacent to the CXS railroad, is subjected to exhaust fumes daily from the trains.
- Soundscape
This project area is extremely noisy due to train and highway activity. The trains have been a part of this area for so long that their presence has become part of the culture of this area. The NPS project will not add or detract from the existing soundscape of the area.
- Lightscape
The park is closed at dusk; therefore, lighting will not be an issue for this project. There is no lighting designated for this project.
- Archeology
This project does not anticipate any below-grade activity except in limited areas that are already heavily disturbed, such as the abutment ramp areas.
- Indian Trust resources
There are no known impacts to Indian Trust resources with this project. The area of impact is limited to previously disturbed areas.
- Ethnographic resources
There are no known impacts to ethnographic resources with this project. The proposed use of the bridge is consistent with its historic use; therefore, no change will be instituted that could affect ethnographic resources.

- Topography, soils, geology
All work for this project will be conducted above the existing grade. Minimal ground disturbance will be required, therefore, this topic has been dismissed from further analysis.
- Agricultural lands, farmlands
This project will not have any effect on agricultural lands or farmlands. It is located within the community of Point of Rocks and connects the NPS property with a small town setting.
- Wildlife
This project does not anticipate any impacts to wildlife because this project will not alter the historic use of the structure. The structure will not impair or impact wildlife within the area or the migration of wildlife through the area.
- Water
This project does not anticipate any impacts to water resources because it will not alter any water course or wetland. The historic canal prism is not rewatered in this section.

2.0 DESCRIPTION OF ALTERNATIVES

2.1 ALTERNATIVE 1 – NO ACTION

The existing structure will continue to deteriorate. Based on routine inspections by the Federal Highway Administration, the bridge was closed to traffic in 2002. Structural failures within the stone abutments will remain and possibly worsen. No other means of access to the boat ramp area is available. Minimal attention to the preservation of the masonry components of the bridge will be undertaken as funding and staffing allows.

This alternative will meet only two of the six project objectives. The closing of the bridge addresses safety. Vehicles will not be allowed to travel across the unsafe structure. It also addresses the preservation of the historic masonry. This alternative does not accomplish the upgrading of the bridge to the H15 rating. This alternative will not allow access to the boat ramp and day parking areas. It does not address the creation of a partnership to repair the bridge. The towpath will remain in an alignment inconsistent with its historic alignment.

No cost would be expended for this alternative. Should minimal masonry be undertaken, the cost estimate would be approximately \$15,000.

2.2 ALTERNATIVE 2 – REPLACE THE BRIDGE DECK AND SUPERSTRUCTURE

The bridge, as it existed in 2001, is a modern version of previous structures. The only original portion of the structure is the masonry abutments and center pier. This option allows the bridge decking to return to a more historic design while meeting modern bridge specifications. It will be designed to fit the abutments and center pier. The mismatched top course of stone on each abutment will be removed and the south abutment elevation will be addressed. The towpath will be reconstructed.

This alternative meets five of the six project objectives. The bridge will provide a better line of sight for vehicles with the lowering of the structure by approximately 12 inches and the south abutment approach will be regraded to lessen the 11 foot elevation difference. The Stopping Sight Distance (SSD) for the Crest Vertical Curve (CVC) formed by the proposed bridge and approach grades is 152 feet, or a 42% improvement over the current 107 feet SSD. This increase to the SSD will add additional safety benefits to the bridge crossing by allowing the vehicle exiting the park to more clearly see a vehicle entering the park/crossing the railroad tracks. The bridge will be signed accordingly to prevent a vehicle from stopping within the railroad crossing.

The bridge span and deck will meet the FHWA standard for a H15 (15 tons) rating. The design of the bridge will incorporate steel beams for the H15 rating, but the overall design will present a wooden structure that reflects the historic bridge designs from the historic photographs. Approximately 400 linear feet of towpath will be returned to its historic location along the edge of the canal prism and pass under the bridge. Preservation repairs to the masonry will be

undertaken to provide a stable support for the bridge span. This alternative does not meet the partnership project objective.

The estimated cost for this alternative will include the \$30,000 for masonry repairs and \$100,000 for a new bridge and redesigned approaches and towpath. Total estimate - \$130,000.

2.3 ALTERNATIVE 2A – PREFERRED ALTERNATIVE - REPLACE BRIDGE DECK AND SUPERSTRUCTURE AS A PARTNERSHIP WITH AN AREA STEEL MANUFACTURER

This alternative is the same as Alternative 2 but it incorporates a partnership with a local steel corporation to assist with the design and manufacturing of the bridge's steel components. The partnership will help defray total project costs. This alternative satisfies all six of the project objectives.

Canam Steel Corporation of Point of Rocks has indicated they are interested in the project and will supply support for engineering design, the manufacturing of the steel components, and installation assistance. Their financial contributions to the project will not exceed \$25,000 of the total \$130,000 estimate.

2.4 ALTERNATIVE 3 – CLOSE THE BRIDGE AND INSTALL A PERMANENT CAUSEWAY

While this alternative will be the least expensive of the three action alternatives, it will result in an alteration to the historic canal prism. The alignment of the causeway cannot be in a direct line with the railroad crossing due to the location of the pivot bridge. Vehicles will encounter sharp turns in order to access the causeway when entering the park. Minimal attention to the preservation of the masonry components of the bridge will be undertaken as funding and staffing allows.

This alternative meets four of the six project objectives. It does meet the safety objective by providing a better line of sight for vehicles; however, the configuration of the causeway access road could prove less than desirable. Since the causeway will replace the bridge, there will not be a weight restriction concern. The boat ramp and day use area will still be available for vehicle access. There may not be an opportunity to form a partnership with this alternative and the towpath will remain in its current location along the boat ramp roadway. Preservation of the historic masonry will be undertaken.

The estimated cost for the masonry repairs is \$30,000 and the cost for the permanent causeway is \$25,000, for a total cost of \$55,000.

2.5 ALTERNATE CONSIDERED BUT DISMISSED

Bridge repairs as outlined in the FHWA 2001 inspection report.

This alternative was dismissed due to several factors. First, the line of sight will be only partially improved. The coursing of the masonry will not be lowered, keeping the bridge deck at its current elevation of six feet above the railroad track elevation. Slight improvement to the line of sight could be achieved with improvements to the south abutment. Second, while the metal and wooden components can be repaired or replaced in kind, the bridge will retain the posted 10 tons weight limit. The repairs cannot bring the bridge to the H15 rating. Third, the park engineering staff feels that the design of the bridge span, in conjunction with the mismatched masonry course, has caused damage to the masonry abutments and pier. Proper and effective repairs to the masonry will be extremely difficult with the bridge span in place. As a result, the masonry repair component is more complex.

2.6 ACTIONS COMMON TO ALTERNATIVES 1-3

Masonry repairs will be undertaken regardless of the selected alternative. The extent of the repairs will vary between the alternatives, but some degree of preservation will be accomplished.

2.7 ACTIONS COMMON TO ALTERNATIVES 2-3

Safety improvements will be accomplished. Access to the boat ramp and day use parking area will be available. Vehicle weight restrictions will be upgraded.

3.0 AFFECTED ENVIRONMENT

3.1 PUBLIC SAFETY

The existing bridge has a limited line of sight for motorists. This is especially crucial given the single lane bridge's location adjacent to the railroad tracks. The grades on the existing bridge's approach ramps, as well as the center of the existing bridge, provide poor Stopping Sight Distance (SSD). The SSD for the Crest Vertical Curve (CVC), formed by the existing bridge and approach grades, is 107 feet.

The existing bridge carries a posted vehicle weight limit of 10 tons.

Currently, pedestrians and vehicles share the boat ramp access road for approximately 400 feet. The towpath was discontinued within this area due to some encroachments on the canal. The boat ramp access road was once the Route 15 roadway, prior to the construction of the current Route 15 bridge.

3.2 CULTURAL RESOURCES

3.2.1 Pivot Bridge

The Pivot Bridge, located at Point of Rocks, Maryland, is Structure No. 048.20, IDLCS (List of Classified Structures): 11649.

The bridge at Point of Rocks was first constructed in 1833-1834, with contractors A. J. Douglas providing stone and masonry work and Louis Wernwag furnishing timber. The canal's engineer believed such pivot bridges would eliminate the need for fixed bridges. The structure was completed with 11 feet of clearance from the water's surface. The pivot rested on a square pier some fifteen feet thick. Boat passage clearance on each side of the center pier was 22.5 feet. This was part of a project to erect five pivot bridges between Little Falls and Shepherdstown. The center pier and abutments were constructed of sandstone/brownstone. The center stone pier was located mid-canal. The pivot fulcrum was about four feet wide and fifteen feet deep. The stone piers (abutments) were constructed on the berm bank and on the outside of the towpath.

It appears major repairs were undertaken in 1844-1845, with "renewal of the bridge at Point of Rocks" consuming 1,680 feet of lumber at a cost of 1.5 cents per linear foot. The structure was evidently converted to a permanent structure at this time, and written complaints, including one describing a passing vessel as "badly raked," were sent to the canal company. In 1852, modifications to the bridge raised it to seventeen feet over the water's surface.

The bridge at Point of Rocks escaped damage during the Civil War but bore witness to raids and skirmishes. This area of the canal was the target of frequent raids by Confederate troops and partisans between 1862 and 1865. During Confederate General Jubal A. Early's foray into Maryland in 1864, a coordinated raid by Colonel John S. Mosby's "Guerillas" forded the Potomac River within one mile of Point of Rocks on July 4, captured a holiday excursion boat

with Treasury Department officials, stole their valuables, and burned the vessel. In Point of Rocks, the raiders burned a warehouse and looted homes before retreating across the river when confronted by Federal troops. Early's troops (some 14,000 men) subsequently retreated back across the Potomac nearby at White's Ferry following their failure to capture the City of Washington, after fighting skirmishes at Keedysville, Nolands Ferry, and Point of Rocks.

Tom Hahn's *Towpath Guide* notes the bridge was used for vehicular access to the U. S. Route 15 bridge until that was destroyed in the 1936 flood. At some point (possibly 1924, as inferred by the List of Classified Structures), the pivot bridge decking was lowered to a height of nine feet four inches for vehicular use. The bridge was redecked circa 1930. The 1930's bridge was in existence until circa 1980 when it was replaced with the existing structure. Painting and railing replacement was carried out in 1992. The 1970s span measured 73 feet long and 12 feet 6 inches wide.

3.2.2 Historic Landscapes and Viewsheds

The structure is located in "Zone D – Short Term Remote Zone," as identified in the park's 1976 *General Plan*. This designation is for portions of the park with limited access and low-density use, providing "solitude in a natural setting." The park's resources management division has identified this area as possessing strong Civil War associations demonstrating both military activities and their resultant impacts to civilians and the operations of the canal. Rehabilitative work to cultural features in this area should reflect the *antebellum* and Civil War periods to reflect the landscape and built environments during this era.

The Chesapeake and Ohio Canal Company was in direct competition with the Baltimore and Ohio Railroad in the early 1800s. Point of Rocks provided the physical backdrop for litigation between the two companies. At Point of Rocks, the Potomac River cuts into the Catoctin Mountains, creating cliffs on the Maryland shoreline. At the base of the cliffs is a narrow ledge that could accommodate either the canal or the railroad, but not both. In 1835, the courts ruled in favor of the canal company, forcing the railroad to construct a tunnel through the cliffs just after the Civil War.

The B&O Railroad gained controlling interest in the C&O Canal Company following the canal company's bankruptcy in 1889. When the canal was irreparably damaged during the 1924 flood, the railroad explored options at Point of Rocks. In 1938, the railroad deeded the canal company lands to the federal government. They, however, retained enough property to construct the railroad on the outside of the cliffs, thus permanently impacting the remains of the canal prism and towpath in that location. As a result, approximately 400 linear feet of the towpath was detoured to the boat ramp roadway.

3.2.3 Point of Rocks Eligible Structures

Located within one-quarter mile of the pivot bridge are several historic properties, one of which is listed on the National Register of Historic Places. These are in addition to the Chesapeake and Ohio Canal NHP's listing on the National Register of Historic Places.

The Point of Rocks Railroad Station is listed on the National Register. It is located south of the bridge site.

The Point of Rocks Masonic Lodge, the Point of Rocks Methodist Episcopal Church, and the B&O Railroad Box Culvert are all eligible for status on the National Register. These structures are located south and east of the pivot bridge site.

3.3 NATURAL RESOURCES

The section of the canal located at the pivot bridge is dewatered. It remains dry throughout most of the year. The canal prism has a grass covering and the dimensions of the original canal prism have been impacted due to siltation, erosion, and encroachment. The bridge is used by park visitors to access the Potomac River and the park's towpath. The project will be affecting previously disturbed areas.

3.3.1 Threatened And Endangered Species

Two previous projects near the NPS pivot bridge project have conducted agency inquiries within the past three years. These projects included the proposed Duke Energy Power Plant and the MTA MARC project. The project areas for both of these projects include the Point of Rocks pivot bridge site. Therefore, the information presented to these projects is applicable to this project as well.

The MTA MARC project's EA was completed in May 2003. The Duke project was begun in 2001. Both projects received correspondence from the Maryland Department of Natural Resources, Wildlife and Heritage Service (MDDNR). In the review for MTA, MDDNR indicated that there were no records for Federal or State rare, threatened, or endangered plants or animals within that project site. The MARC project area is reflective of the NPS pivot bridge project area.

In correspondence regarding the Duke Energy project, dated January 9, 2003, MDDNR indicated that there were several species of interest within that project site. That project site was generally listed to encompass the four miles between the Route 15 bridge and Nolands Ferry.

Additionally, Mr. Robert Pennington of United States Fish and Wildlife Service (USFWS), in Duke Energy correspondence dated April 11, 2002, stated that no federally proposed or listed species are known to exist in the area with the exception of a known eagle aerie located approximately 2½ miles southeast of Point of Rocks. The rare, threatened, and endangered species listed were:

<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>
<i>Ammannia coccinea</i>	Scarlet Ammannia	Uncertain
<i>Eyrthronium albidum</i>	White Trout Lily	Threatened
<i>Valeriana pauciflora</i>	Valerian	Endangered
<i>Smilacina stellata</i>	Star-flowered False Solomon's-seal	Endangered

<i>Corallorhiza wisteriana</i>	Wister's Coralroot	Endangered
<i>Matteucia struthiopteris</i>	Ostrich Fern	Rare

<i>Haliaeetus leucocephalus</i>	Bald Eagle	Threatened

A rare dragonfly was spotted near Point of Rocks along the Potomac River shoreline in 2002. The single individual found is thought to be a yet unnamed species new to science. Therefore, it is only known as *Ophiogomphus sp.* or Potomac snaketail. Its habitat is deep and swiftly flowing water. The bridge project will not affect this species or its habitat.

3.3.2 Wetlands and Floodplains

Based on the review of the flood insurance rate map for Frederick County, Maryland, the Point of Rocks pivot bridge, of the Chesapeake and Ohio Canal, lies within the 100-year floodplain. The Chesapeake and Ohio Canal National Historical Park and portions of the community of Point of Rocks have been damaged by a number of flood events in the past. The most recent and significant flood events occurred in 1996 with two major floods. Park-wide damage from the flood was estimated at \$68 million. In September 2003, Hurricane Isabel created flood and wind damage estimated at \$17 million.

The Potomac River flood stage for the Point of Rocks section of the C&O Canal is 16 feet. When river levels reach 6-8 feet, all visitors using the towpath and the Bald Eagle hiker/biker campground, located two miles upstream from the pivot bridge, are evacuated. At 11 feet, park personnel physically close the bridge access to the park. At 21 feet, floodwaters rise to the base of the pivot bridge abutments.

The project area is located near an identified but unnamed wetland area. However, due to the small area of impact of the project, the wetland is outside the project area and will remain unaffected by the proposed activity.

3.3.3 Natural Landscape and Viewshed

The canal property at Point of Rocks is primarily wooded with vistas across the Potomac River. Bluffs, from the Catoctin Mountains, line the canal on the west near Point of Rocks. An open meadow area exists near the boat ramp. This open area extends toward the river. Riparian buffers exist throughout this area.

3.4 SOCIOECONOMIC ENVIRONMENT

Point of Rocks is a small community located adjacent to the C&O Canal NHP. The town has been molded by both the canal operations and the railroad industry. The town has been impacted over the years by severe flooding from the Potomac River. As a result, many of the buildings and homes that were built close to the river have been damaged, destroyed, removed, or are scheduled for removal. The Point of Rocks community is looking to revitalize their community. Part of their developmental plan is a proposed community park in the vicinity of the vacant lots

and the Point of Rocks pivot bridge. They envision picnic areas, a small outdoor concert venue, and perhaps concession stands that will offer food and boat rentals to the public.

The community offers some basic amenities for park visitors. There are some gasoline stations and food vendors serving the area.

3.5 VISITOR USE AND EXPERIENCE

Point of Rocks is a popular day-use area for the Frederick County area of Maryland and Loudon County, Virginia. It offers more parking than many of the other C&O Canal areas within this region. It is also located along a major highway and is within 20 miles of an interstate highway.

This access point offers anglers the opportunity to launch boats and enjoy the Potomac River. Fishing is permitted from the shoreline, with an appropriate state license. Many anglers choose to walk the towpath to access favorite fishing holes.

The towpath provides hikers and bikers with a gravel pathway. The towpath is a level path that is easily traversed. Many hikers use the towpath as a form of daily exercise.

Some of the park's visitors use the area to enjoy bird watching and wildflower seasons. Equestrians are also allowed access to the towpath. The towpath provides a safe riding environment away from fast-moving vehicles.

Many park visitors come to this area to study the historic aspects of the canal and its operation.

The park has many visitors that are through-hikers or bikers. This means that these visitors begin at one end of the park and spend several days hiking or biking toward the other end. The park provides overnight camping areas to these visitors on a first-come, first-served basis.

3.6 PARK OPERATIONS

The NPS is responsible for maintaining the entire length of the C&O Canal NHP. The park has designated access points, one of which is at Point of Rocks. Access to the park at this location serves maintenance, law enforcement, river rescue, emergency medical, interpretive ranger, and other support staff. While access is available four miles downstream at Noland's Ferry and at Lander, three miles upstream, it is still critical to retain the Point of Rocks access due to emergency responses. The Point of Rocks access is located close to Maryland Route 15, a major artery that connects Leesburg, Virginia to Frederick, Maryland.

4.0 IMPACTS

4.1 DIRECT AND INDIRECT IMPACTS

4.1.1 Alternative 1

This alternative takes the unsafe bridge structure out of service. The bridge deck will not be replaced, nor will major work be undertaken to stabilize and preserve the masonry features of the bridge. No other means of access will be established.

This alternative, by default, will address the safety concerns by not allowing vehicles to travel over a less than safe structure. It will keep the original masonry components intact, thus presenting the bridge's abutments and piers in their historic character. The landscape and viewshed will remain the same. However, an indirect impact will result without substantial preservation repairs to the bridge's masonry. It will be a matter of time before the masonry will suffer irreversible structural decay. Additionally, the unsafe non-historic bridge deck will need to be adequately closed or removed to prevent pedestrian access.

The "towpath" will remain in its current alignment of the boat ramp roadway and park visitors will still be able to walk through this area. Without the return of the towpath to its historic alignment, the historic landscape will still have a missing component. This alternative will have little or no impact to any of the Point of Rocks eligible structures.

This alternative will have no direct impacts to the natural resources of the area. An indirect impact could result from pedestrians creating other points of access across park property. The wetland area downstream from the bridge site could be one possible impact area.

Point of Rocks merchants, community leaders and residents will have impacts from this alternative. One direct impact will be the inability to access the park and boat ramp area. Access to the river has been a long-standing amenity for the area residents. Another impact will be that park users will not be able to patronize area merchants for food or fuel.

The visitor experience will be somewhat inhibited if access could not be gained at this location. However, there are two other access areas within two to four miles of this location, so it is arguable that park visitors will have a minor inconvenience to travel to these other points of entry. Once in the park, their enjoyment of their surroundings should be the same regardless of the access point.

Park operations will be impeded without access at Point of Rocks. This could be critical in emergency rescue/response situations. Alternative access areas will add additional response time due to vehicle size and speed restriction of the towpath, thus resulting in a direct impact. The Point of Rocks access is adjacent to Route 15, a main corridor that connects Leesburg, Virginia with Frederick, Maryland. Both of these cities have advanced medical services. If the Point of Rocks access is closed, access time to an emergency facility will be lengthened. In regards to routine maintenance activities, the Point of Rocks closure will have more of an indirect impact due to increase in time to access the park via another location.

4.1.2 Alternative 2 and 2A (Preferred Alternative)

These two alternatives are being evaluated together for direct and indirect impacts since the only difference in the alternatives is the development of a partnership to assist with the project. Both of the alternatives replace the bridge span and deck components with modern components.

These alternatives address the safety concerns by lowering the masonry abutments by 12 inches. This will increase the SSD from 107 feet to 152 feet, a 42% increase. While this action provides a positive impact to public safety with better line of sight, it causes a negative impact to the park's historic resource. Mitigation of this adverse impact will be developed through a Memorandum of Agreement (MOA) with the Maryland Historical Trust. One proposed mitigation measure will be a wayside display that will explain the evolution of the Point of Rocks pivot bridge. This sign will be a positive direct impact as park visitors will gain historical information on one of the park's contributing features.

The bridge will also be upgraded to the H15 weight classification so that heavier vehicles can safely access the park and boat ramp. This provides another positive impact.

The park's historic viewshed will be improved under this alternative. The towpath will be returned to its historic alignment and will present a more complete picture of the historic landscape. Equally important with this positive impact is the separation of pedestrians and vehicles. The existing situation has pedestrians sharing the boat ramp road with vehicles.

The natural landscape will not change under this alternative. The project will retain the area at its current use patterns. An indirect impact could result from the continued and increased use of the area. Encroachment for parking into natural or culturally sensitive areas may occur if park visitation to the site increases.

With the bridge remaining open for visitation, the community of Point of Rocks will have a positive, direct impact with a continuation of available amenities for park visitors. This will help with the current economic level within the town and possibly generate new businesses in the future. The town can incorporate planning of green spaces to coordinate with park opportunities.

Continued use of the pivot bridge as an access will not have any impacts to the historic properties within Point of Rocks. The use of the bridge will enable park visitors to continue using the park for educational and recreational opportunities.

Park operations will be improved with a new bridge. The increase in weight for the bridge will enable heavier rescue and maintenance vehicles/equipment to quickly access the area in response to emergencies.

Development of a partnership within the area is a positive impact. The project will enhance relationships between the NPS and the communities of southern Frederick County, Maryland. It will give a sense of ownership and pride to the area.

4.1.3 Alternative 3

This alternative closes the bridge and establishes a permanent causeway for vehicular access to the park and boat ramp. The largest negative impact is the alteration to the canal prism and the historic landscape/viewshed. This will greatly reduce the public's ability to understand and appreciate the historic significance of the pivot bridge to the canal prism and it adds a modern feature to the historic landscape. The towpath will not be able to be placed back into its historic alignment. Additionally, preservation of the masonry will not be as extensive due to the discontinued use of the bridge. The bridge has the potential to fall into a deteriorated state, an indirect impact.

This alternative will not be concerned with weight restrictions so this is a positive aspect of the project. Like Alternatives 2 and 2A, rescue and maintenance responses will not be hindered.

This alternative has the potential to alter the migration of water through this area. While the canal prism is not watered in this section of the park, groundwater does gather within this area during times of high moisture. It is conceivable that the causeway, even if designed for water flow, could create permanent ponding of water thus be an indirect impact to the natural resources of the site.

Like the previous alternative, the use of this area could increase and have an indirect impact to the natural and cultural resources through encroachment and possible overuse. The Point of Rocks community impacts will be consistent with the impacts listed in Alternatives 2 and 2A

4.2 CUMULATIVE IMPACTS

The proposed alternatives have the potential for positive and negative cumulative impacts. For the alternatives that provide continued access to the park and boat ramp area, the positive cumulative impacts will be seen through community development of green spaces adjacent to the park. Merchant amenities will be developed to enhance the local economy. Park visitors will designate the Point of Rocks area as a trip destination. Use of the Potomac River will continue to be a source of recreation. The negative impacts could be the overuse of the park area with increasing impacts to cultural and natural resources. As the population of the area increases, the availability of public green spaces could diminish and the public may focus on the park to satisfy a need to "get away from it all."

For the alternative excludes park access, the cumulative impacts will be both positive and negative. The positive will be that park resources will not be impacted from overuse. While the pivot bridge will receive minimal preservation efforts, impacts from vehicles will cease and the masonry will have a slower rate of deterioration. Natural resources will not be impacted by vehicular use and the area will receive less direct visitation, resulting in fewer impacts. On the negative side, the community of Point of Rocks will not be able to access the park. They will not be able to tie their green space usage to the park. Merchants could lose revenue generated by park visitors.

5.0 ENVIRONMENTALLY PREFERRED ALTERNATIVE

In addition to evaluating projected impacts of the proposed alternatives to the affected environment, Director's Order 12 of the National Park Service states that the environmental review include evaluations to identify the best alternative that supports environmental policy. Based on criteria suggested in National Environmental Policy Act of 1969, and guided by the Council on Environmental Quality, the following list will be used for this purpose:

1. Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
6. Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (National Environmental Policy Act, Section 101)."

Alternative 1 does meet criteria number 2 for providing safe surroundings with the elimination of an unsafe bridge. It marginally meets the remainder of the specific criteria regarding surroundings. The alternative does not meet the remainder of the criteria.

Alternatives 2 and 2A achieve all of the criteria. The park is moving forward to retain the pivot bridge in a manner consistent with preservation/rehabilitation standards, thus preserving the bridge for future generations. The improvements for the bridge will enhance safety for park visitors. The project will retain the scene in its historic and natural character. With a retained use of the existing structure, there will not be any undesirable or new environmental consequences. The bridge will be preserved as an important cultural feature of the park. Under Alternative 2A, a partnership with an area manufacturer will enable the project to include the community, and afford the opportunity to attain a higher level of project product. Both 2 and 2A will allow the public a continuing opportunity to enjoy park resources. The proposed project will keep the historic pivot bridge in use and will not allow it to fall into disrepair.

Alternative 3 meets half of the criteria. It addresses safety and keeps the use of the park at status quo. It does not attain preservation of cultural resources, nor does it provide for the preservation of the resource for future generations.

6.0 GLOSSARY

Acronyms, Abbreviations, Definitions

B&O Railroad – Baltimore and Ohio Railroad.

Canal Terminology

Abutment – the end support or foundation on either side of a stream or canal upon which a bridge or aqueduct rests.

Aqueduct – A structure that carries a canal and towpath across a stream or river when the stream or river are too wide or deep for a culvert. All C&O Canal aqueducts were of masonry construction.

Berm - The bank of the canal opposite to the towpath, usually on the land side of the canal.

Canal – An artificial waterway used for inland navigation.

Canal boat – A specially designed boat that would haul freight or passengers. C&O Canal boats were propelled by mules walking on the towpath and connected to the boat by a towline.

Canal prism - The trapezoidal shape of the canal and its banks.

Coping course – Also referred to as coping or cap stones. The top course of stone of a lock or other structure. These stones were often finely crafted.

Culvert - A short span structure that was built to carry a stream under the canal and towpath.

Dewatered (Unwatered) – A section of a canal that contains no water. This was routinely done for canal maintenance. Today, many sections of the C&O Canal NHP are dewatered due to compromises in the canal's structure.

Feeder dam – A dam built across a stream or river to supply water to a canal.

Level – The level stretch of water between two locks.

(Lift) Lock - A conventional canal lock that enabled a boat to be raised or lowered from one level to another by allowing water to flow into or out of a lock. These were generally masonry structures.

Pivot Bridge - A swing bridge over a canal. The bridge would pivot on a center pier, usually operated from the berm side of the canal. Bridge height was low to the water and by swinging out of the way, canal boats could safely pass by the structure.

Towpath - The pathway beside a canal used by animals to tow a canal boat. Towpaths were usually 12 feet wide and were usually located on the river side of a canal.

Tunnel – Tunnels were a rarity for canal systems. The C&O Canal boasted the 3,118 foot long Paw Paw Tunnel, located at Mile 155 of the canal.

Categorical Exclusions - The National Park Service’s NEPA regulations contain two lists of categorically excluded actions, one of which requires formal documentation. These CE actions, under normal circumstances, are not considered major federal actions and have no measurable impacts on the human environment.

C&O Canal – Chesapeake and Ohio Canal.

C&O Canal NHP – Chesapeake and Ohio Canal National Historical Park.

CSX – CSX Corporation – freight railroad founded in 1980. Current owners of the former B&O Railroad.

CVC - Crest Vertical Curve used in engineering calculations for determining line of sight distances.

D.C. – District of Columbia.

DO 12 – [NPS] *Director’s Order 12: Conservation Planning, Environmental Impact Analysis, and Decision-making* - . This document provides guidelines for implementing NEPA within project planning.

EA – Environmental Assessment.

FHWA – Federal Highway Administration.

H15 – Weight load rating for bridges, established by the FHWA. The H15 rating allows a 15 ton weight limit for bridges similar to the Point of Rocks pivot bridge.

IDLCS – List of Classified Structures. This is a computerized inventory of all historic and prehistoric structures in which the NPS has a legal interest. The structures have historical, architectural, or engineering significance.

MARC - Maryland Rail Commuter Service.

Maryland Historical Trust – The Maryland Historical Trust is the home for the state historical preservation officer (SHPO).

MDDNR - Maryland Department of Natural Resources.

MOA – Memorandum of Agreement. This type of document is developed to govern the federal undertaking. This agreement specifies how the undertaking will avoid or mitigate adverse affects, or it documents the acceptance of such affects.

MTA - Maryland Department of Transportation/Maryland Transit Authority.

National Monument – A classification within the National Park Service. A national monument is intended to preserve at least one nationally significant resource. These sites are usually smaller than national parks.

National Historical Park - A classification within the National Park Service. The national historical parks are commonly areas of greater physical extent and complexity than national historic sites or monuments.

National Register of Historic Places – Authorized by the National Historic Preservation Act of 1966, the Register is the national list of the publicly and privately owned districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service.

NEPA – National Environmental Policy Act of 1969.

NPS – National Park Service.

Patomack Company – This company was started in 1785 to establish a river and skirting canal system connecting the Potomac River with the Ohio River valley. George Washington was a shareholder and served as president of the company.

Secretary of Interior’s Standards for Historic Preservation – A set of professional standards that provide advice on the preservation and protection of all cultural resources listed in or eligible for listing in the National Register of Historic Places. The standards were developed as a result of the National Historic Preservation Act of 1966.

Sections 106 – Section 106 of the National Historic Preservation Act of 1966 mandates that federal agencies take into account the effects of their actions on properties listed or eligible for listing on the National Register of Historic Places and gives the Advisory Council on Historic Preservation a reasonable opportunity to comment. Project planning emphasizes participation in project reviews by state historic preservation officers (SHPOs), tribal historic preservation officers (THPOs), other government agencies, and the public.

SHPO – State historical preservation officer who is appointed to administer the national historic preservation program. SHPOs were established by the National Historic Preservation Act. The “SHPO” is often preceded by the state abbreviation, such as MDSHPO.

SSD - Stopping Sight Distance used in engineering calculations for civil engineering projects.

U.S. – United States of America.

USFWS – United States Fish and Wildlife Service.

7.0 PUBLIC INVOLVEMENT

During 2001 and 2002, the Maryland Transit Administration held several public meetings to discuss improvements for the MARC train station and parking at Point of Rocks. Staff from the C&O Canal NHP attended these meetings as part of the project's agency and public review process. The NPS staff presented information regarding the potential bridge project and future improvements to the boat ramp area and how all the proposed projects could positively impact each other and the community. Community feedback was positive and encouraged the NPS to pursue both repairs to the bridge and improvements to the boat ramp area of the park.

Park maintenance staff, working at the site, have had the opportunity to speak informally with park visitors. The overall consensus has been positive to retain access to the park.

8.0 COORDINATION AND CONSULTANTS

This project has been developed and reviewed by the staff of the C&O Canal NHP and the Maryland Historical Trust.

C&O Canal NHP

Douglas Faris, Superintendent - Retired
Kevin Brandt, Superintendent

Randy Astarb, Engineering Technician
David Castle, Monocacy District Maintenance Foreman
Daniel Copenhaver, Park Engineer
Rob Danno, Chief Ranger
Robert Hartman, Chief of Maintenance
Dianne Ingram, Natural Resources Specialist
Gloria Keller, Secretary, Office of the Superintendent
Tina Orcutt, Chief of Resources
James Perry, Historian
Dale Petrucci, Safety Officer
Marie Frias Sauter, GIS Specialist
Mike Seibert, Exhibits Specialist
TJ Stottlemyer, Engineering Technician
Lynne Wigfield, Compliance Officer

Maryland Historical Trust

Elizabeth Cole, Administrator, Review and Compliance
Andrew Lewis, Preservation Officer

9.0 APPENDICES

9.1 HISTORIC ACCOUNT

After the war was over, the bridge was rebuilt. On October 11, 1866, President Spates announced that "a good and sufficient bridge has been built at Noland's Ferry."³⁷

V. Bridge at Point of Rocks

A pivot bridge was constructed across the canal at Point of Rocks in 1834. A. J. Douglas supplied the stone and did the masonry, while Louis Wernwag furnished the timber and built the bridge.³⁸

Captain William G. McNeill on December 1, 1833, reported that this bridge was nearly finished. He was impressed with the pivot bridges, because he foresaw that they would enable the Company to do away with the permanent bridges, "which constitute such a source of annoyance on canals generally." The under part of this bridge was 11 feet above the water's surface, and the pivot rested on a square pier 15 feet in thickness, leaving a breadth of canal 22 1/2 feet on each side of it. Five pivot bridges had either been built or were currently being constructed, he reported, between Little Falls and Shepherdstown.³⁹

Superintendent Elgin on the last day of 1844 reported that there was "need of a great quantity of lumber on this division for various

37. Spates to Board of Directors, Oct. 11, 1866 (Ltrs. Recd., C&O Co.).

38. Ledger Book A, 361; Proceedings of the President and Board of Directors, D, 50.

39. McNeill's Report, Dec. 1, 1833, found in House Report No. 414, p. 148.

needed repairs." One of the projects requiring attention was the "renewal of the bridge at Point of Rocks." To repair the structure he needed 1,680 feet of lumber at 1 1/2¢ per lineal foot.⁴⁰

The bridge was rebuilt as a permanent structure. Apparently, the bridge had insufficient clearance, because W. R. S. Ward wrote Fisk on March 17, 1852, that many boatmen had complained that the bridge across the canal at Point of Rocks was so low it endangered their boats. That very day one of Ward's vessels had tied up at Georgetown, and the captain had protested that he was compelled to tie-up and take aboard stone, before he could pass under the bridge. Even so, his vessel had been "badly raked."⁴¹

The bridge was accordingly raised so that there would be a clearance of 17 feet.



9.2 CORRESPONDENCE

D2215(CHOH)

March 6, 2003

<CHECK WITH THE FINAL HARD COPY>

Rodney J. Little, Director
Division of Historical-Cultural Programs
100 Community Place
Crownsville, Maryland 20132-2023

Dear Mr. Little:

The Chesapeake and Ohio Canal National Historical Park needs to replace a wooden vehicular bridge at Point of Rocks, Maryland. This bridge provides access to the park for the public and for park personnel. The bridge also serves as access to a boat ramp on the Potomac River. Emergency medical and rescue personnel use this as an access point for park and river related incidents.

The existing bridge has been inspected by the Federal Highway Administration and can only be rated to carry an operational 10 tons. This rating is too low for most vehicles that need to cross at this location. Daniel Copenhaver, Park Engineer, is currently developing the drawings and specifications for the bridge. We have started our compliance review and will like you to review the project to date.

This bridge was originally constructed in 1833 to be a pivot bridge. By 1854, the bridge was elevated due to numerous complaints from canal boat operators. Little information is known about the structure. However, we did locate a photograph from 1904 that shows the north abutment of the structure. The current wooden bridge span was placed on the historic masonry abutments and center pier circa 1980.

The new wooden span will incorporate steel beams to increase the operational weight loading to H15. This rating is consistent with the load rating and vehicle size we allow on the towpath. The remainder of the bridge will be wooden. The steel beams will be hidden from view except for directly underneath the structure. The bridge historically has been single lane width, and the new design will stay within those dimensions. The Canam Steel Corporation of Point of Rocks, Maryland is fabricating and donating the steel.

We have two specific items that need your comments, suggestions, and guidelines. The first item centers on the 1904 photograph. This picture shows a railing detail that was not incorporated into the current bridge. Our question is whether or not to duplicate the railing detail of the 1904 bridge. While this seems straightforward, we have not determined which time period of the canal operation will be interpreted in that location. We will be able to incorporate the railing detail into the new design if this is the direction you think we should take. Also, the 1904 bridge appears to be whitewashed. We will prefer a natural color to reduce the amount of maintenance to the structure.

The second item has us in a quandary. The current bridge presents some serious safety concerns, aside from the weight capacity issue. The bridge is located adjacent to the multi-track CSX railroad line. To access the bridge from Maryland Route 28, a vehicle must go across the railroad tracks. The bridge itself is six feet higher than the tracks. This north abutment approach to the bridge is short and steep. Once across the bridge, there is an 11-foot elevation difference (south abutment). The safety concerns develop when a vehicle is ready to leave the park and return to Maryland Route 28. The bridge blocks the line of sight for oncoming vehicles. Once a vehicle begins to exit, any oncoming vehicles have to wait for the vehicle to clear the bridge. This means that a vehicle might be caught at a standstill on the railroad tracks.

With that said, we are evaluating the idea to lower the bridge by one stone course. The bridge abutments show that the existing top course does not match the remainder of the stonework. The tooling and bond patterns are different from the rest of the stonework. The question is whether or not this course is the canal era addition or subsequent addition. The existing coping stones are cut on a radius that appears to match the top of the second course of each abutment. With the removal of the top stone course and resetting the coping course, we will lower the bridge approximately one foot. The approach to the bridge on the south side can be built up to provide better line of sight. The north approach, however, cannot be altered due to the proximity of the railroad tracks.

Enclosed is the park's compliance review packet. It is not completed as we need to finalize the answers to the above questions. Your assistance in making a final project determination will be greatly appreciated.

Thank you for reviewing this project. If you have any questions, please contact Lynne Wigfield, Compliance Officer, at (301) 745-5802.

Sincerely,

Douglas D. Faris
Superintendent

Enclosure

cc:
Tina Orcutt, CHOH
Lynne Wigfield, CHOH

RECEIVED
3/26/03



March 24, 2003

Bob
Tina
HB
3/29/03

Ms. Doug Farris
Superintendent
C&O Canal National Historical Park
1850 Dual Highway, Suite 100
Hagerstown, MD 21740

**Maryland
Department of
Housing and
Community
Development**

*Division of Historical
and Cultural Programs*

10 Community Place
Crownsville, Maryland 21032
410-514-7600
1-800-756-0119
Fax: 410-987-4071
Maryland Relay for the Deaf:
711 or 1-800-735-2258
<http://www.dhcd.state.md.us>

Robert L. Ehrlich Jr.
Governor

Victor L. Hoskins
Secretary

Shawn S. Karimian
Deputy Secretary



Re: Proposed Wooden Vehicular Bridge Replacement, Point of Rocks, C&O
National Historical Park, Frederick County

Dear ^{Doug} Mr. Farris:

Thank you for notifying the Maryland Historical Trust (Trust) of the above-referenced undertaking. We have reviewed the project documentation in accordance with Section 106 of the National Historic Preservation Act and are writing to provide our comments regarding effects on historic properties.

As per today's conversation between Lyne Wigfield of the National Park Service (NPS) and Andrew Lewis of my staff, we have determined that this undertaking will constitute an "adverse effect" on historic properties. The reason for this determination is that the proposed replacement will remove a course of stone from the existing bridge abutments. Although we understand that the stone to be removed is probably a later alteration to the original abutments, the stone has been in place for many years and, therefore, contributes to the overall historic significance of the structure. On the other hand, safety concerns caused by a limited line of sight as one crosses the bridge and approaches the adjacent railroad tracks necessitates removal of the stone so that improved sight lines can be achieved.

In order to mitigate the adverse effect, the design of the new structure should be based upon the 1904 photograph of the bridge. The NPS will also investigate the possibility of white washing the bridge with "Silin Masonry Paint" to more accurately duplicate the 1904 appearance. Even though the missing stone course will represent a slight departure from the 1904 appearance, we understand that this is the only known historic photograph of the bridge. Therefore, using the photograph as a basis for the new design will restore a degree of historic integrity to the Park. Any other design would be based upon conjecture.

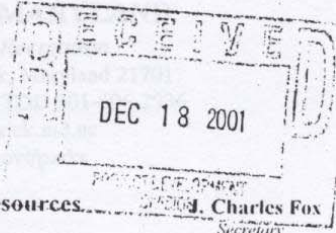
In order to address the discrepancy between the 1904 design and the NPS's goal of interpreting the Civil War significance of the Park, new signage will be installed or current signage will be revised to describe the C&O Canal's pivot bridges and to explain the 1904 appearance of the new bridge. These mitigation measures will be summarized in a draft Memorandum of Agreement (MOA) which the NPS has agreed to provide for our review.

We look forward to receiving the draft MOA as soon as possible. In the meantime, please contact Andrew Lewis at 410-514-7630 if you should have any further questions or comments regarding this matter.

Sincerely,

J. Rodney Little
Director/State Historic
Preservation Officer

JRL/CAL
200300899



Parris N. Glendening
Governor

Maryland Department of Natural Resources

PROVIDE DEVELOPMENT
SECRETARY
J. Charles Fox

Kathleen Kennedy-Townsend
Lt. Governor

Tawes State Office Building
Annapolis, Maryland 21401

Karen M. White
Deputy Secretary

December 12, 2001

Ms. Diane H. Ratcliff
Maryland Department of Transportation
Mass Transit Administration
William Donald Schaefer Tower
6 Saint Paul Street
Baltimore, MD 21202-1614

RE: **Environmental Review for Project No. BCS 98-09F, Point of Rocks
MARC Station Parking Expansion, Brunswick Line, Frederick
County, Maryland.**

Dear Ms. Ratcliff:

The Wildlife and Heritage Service has no records for Federal or State rare, threatened or endangered plants or animals within this project site. This statement should not be interpreted as meaning that no rare, threatened or endangered species are present. Such species could be present but have not been documented because an adequate survey has not been conducted or because survey results have not been reported to us.

Sincerely,

Lori A. Byrne
Environmental Review Specialist
Wildlife & Heritage Service

ER# 2001.2248.fr

Chris N. Chenevix-Trenchard
Governor

Maryland Department of Natural Resources

J. Charles Fox
Secretary

Ben Kennedy Townsend
Lt. Governor

Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

Karen M. White
Deputy Secretary

January 9, 2003

Mr. Douglas D. Faris, Superintendent
US DOI-National Park Service
C & O Canal National Historical Park
1850 Dual Highway, Suite 100
Hagerstown, MD 21740

Lon A. Byrne
Environmental Review Specialist,
Wildlife and Heritage Service

RE: **Environmental Review for Right-of-Way Permit for Construction of Two Water Conveyance Pipelines Across C & O NHP in Vicinity of Point of Rocks, Frederick County, Maryland.**

Dear Mr. Faris:

The Wildlife and Heritage Service's Natural Heritage database indicates that there are numerous records for rare, threatened and endangered species (rt&e's) known to occur in the vicinity of the project site, including but not limited to:

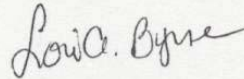
<u>Scientific Name</u>	<u>Common Name</u>	<u>State Status</u>
<i>Ammannia coccinea</i>	Scarlet Ammannia	Uncertain
<i>Erythronium albidum</i>	White Trout Lily	Threatened
<i>Valeriana pauciflora</i>	Valerian	Endangered
<i>Smilacina stellata</i>	Star-flowered False Solomon's-seal	Endangered
<i>Corallorhiza wisteriana</i>	Wister's Coralroot	Endangered
<i>Matteucia struthiopteris</i>	Ostrich Fern	Rare

Telephone: _____
DNR TTY for the Deaf: (410) 260-8835
Toll Free #: 1-877-620-8DNR



There is also an active bald eagle nest site within the vicinity of this project site that could potentially be impacted by this proposal. Please see the attached map for approximate location of the eagle nest. Coordination with the Wildlife and Heritage Service is necessary to ensure that adverse impacts to rt&e species are avoided. It would be helpful to have project details and better location information for us to provide a more meaningful evaluation of the project. Please send any available information to: Lori Byrne, MD DNR Wildlife and Heritage Service, E-1 Tawes State Office Building, 580 Taylor Avenue, Annapolis, MD 21401 or contact me at (410) 260-8573.

Sincerely,

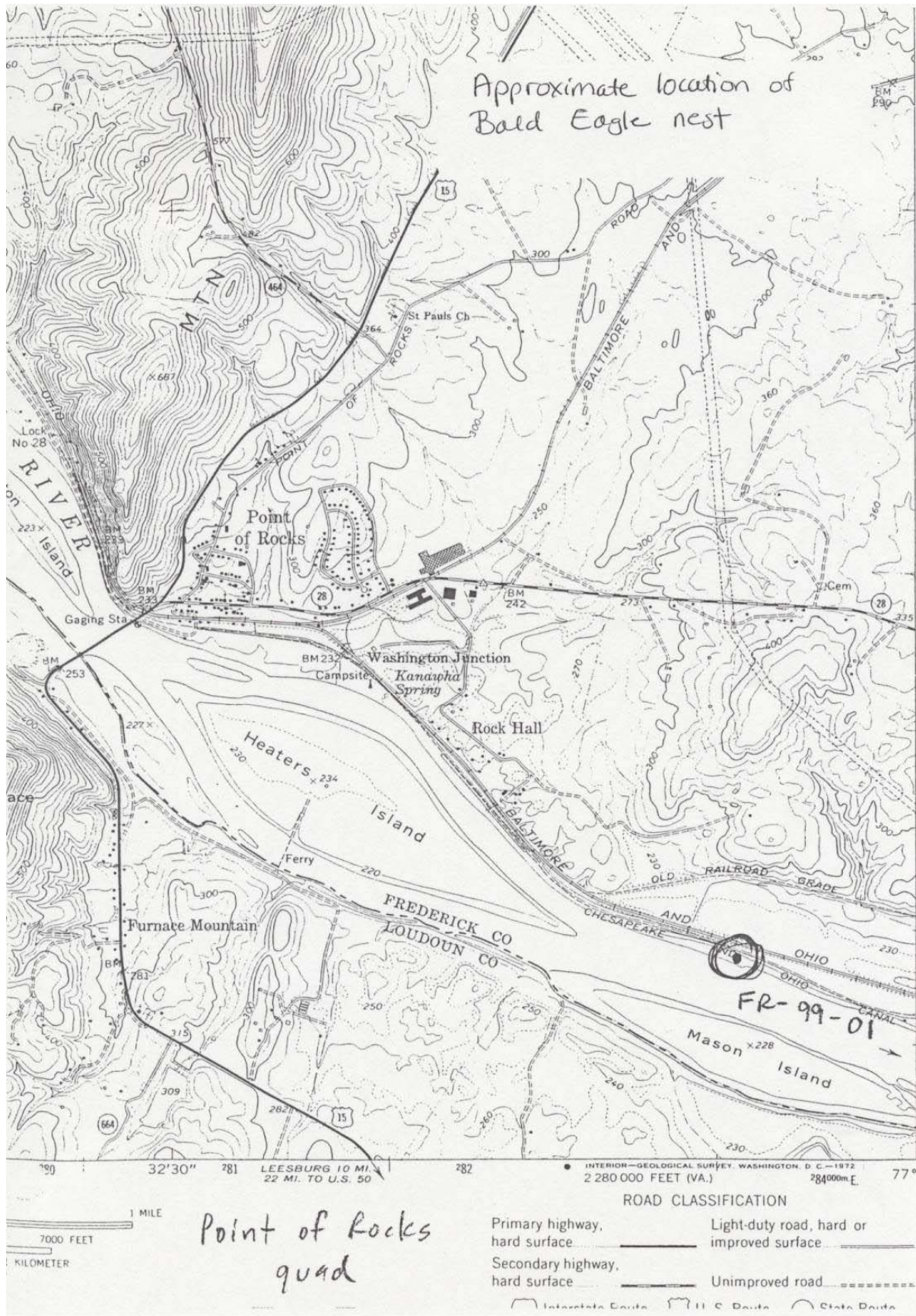


Lori A. Byrne,
Environmental Review Specialist,
Wildlife and Heritage Service

ER# 2002.2131.fr

Cc: R. Wiegand, DNR
E.L. Thompson, DNR
R. Dintaman, DNR
P. Dunbar, DNR

Attachment





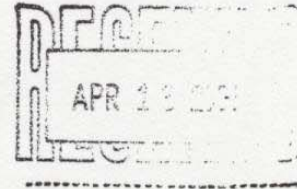
United States Department of the Interior



FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401

April 11, 2001

Mr. James Poppleton
Senior Scientist
Environmental Consulting and Technology, Inc.
5405 Cypress Center Drive, Suite 200
Tampa, Florida 33609



RE: Duke Energy Frederick, LLC's Proposed
Power Plant Site and Associated Linear
Facilities Corridors
Frederick County, MD

Dear Mr. Poppleton:

This responds to your March 8, 2001, request for information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the above referenced study area or within 1-mile of the study area. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

The federally threatened bald eagle (*Haliaeetus leucocephalus*) is present within 1 mile of the project area. Nest FR-99-01 is located approximately 2000 feet downstream of the southern edge of the pipeline and transmission line corridor sitting area boundary. For further information regarding activity at this nest, Glenn Therres of the Maryland Wildlife and Heritage Division should be contacted at (410) 260-8572.

Except for occasional transient individuals, no other federally proposed or listed endangered or threatened species are known to exist within the area. Should additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the basin's remaining wetlands, and the long term of increasing the quality and quantity of the basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands proposed, the U.S. Army Corps of Engineers, Baltimore District should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Andy Moser at (410) 573-4537.

Sincerely,



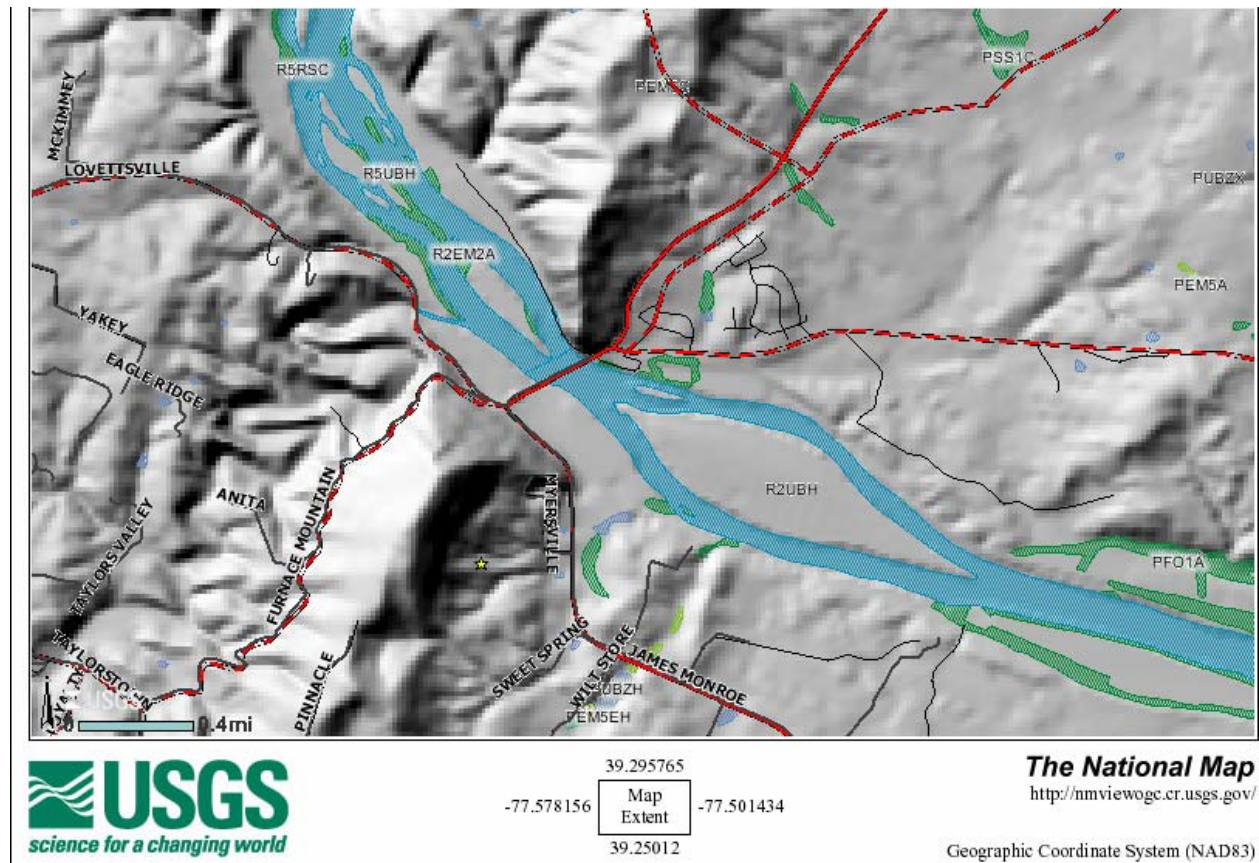
Robert J. Pennington
Assistant Field Supervisor
Chesapeake Bay Field Office

cc:

Maryland Wildlife and Heritage Division, Annapolis, MD
(ATTN: Glenn Therres)

9.3 RESOURCE INFORMATION

Wetland Map



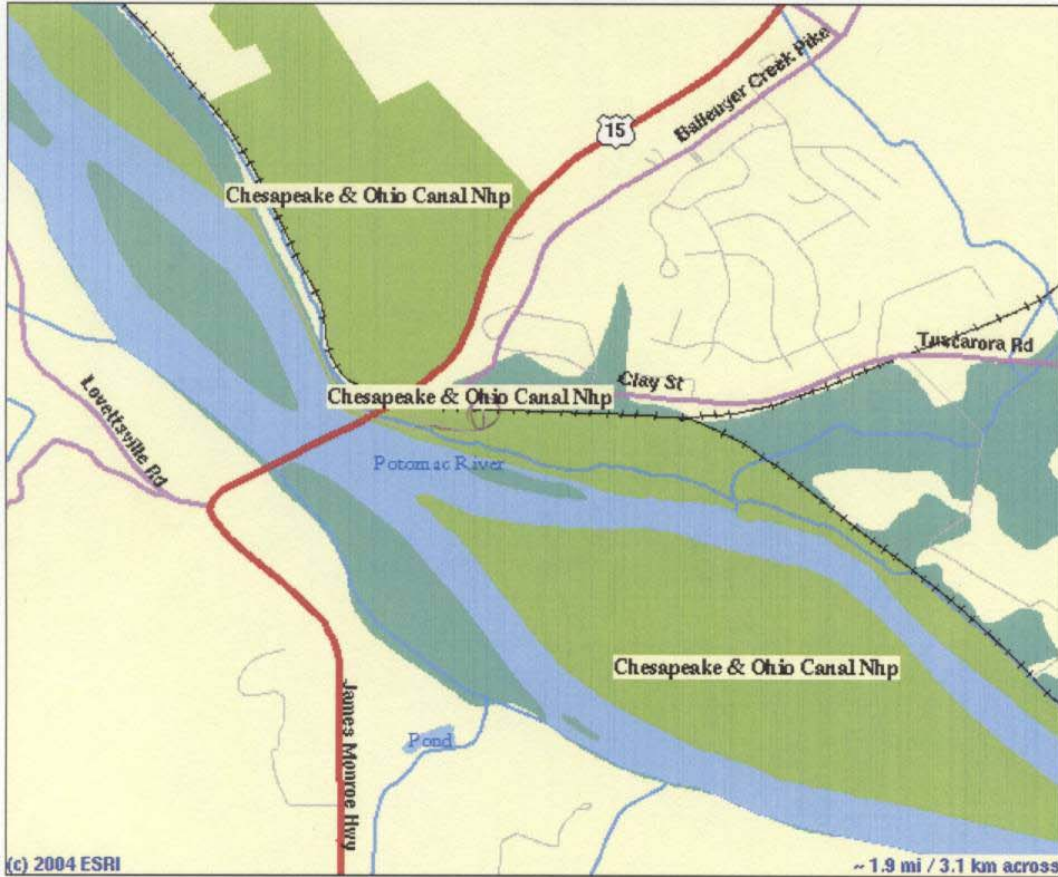


ESRI and FEMA

do you know your
RISKS?

Hazard Information and Awareness

Flood Hazard Map



(c) 2004 ESRI

~ 1.9 mi / 3.1 km across

Map Centerpoint: -77.53837, 39.27297
Map Produced: Mon Apr 5 08:56:30 2004

**ESRI/FEMA Project Impact
Hazard Information and Awareness Site
<http://www.esri.com/hazards>**

<http://mapserver2.esri.com/cgi-bin/hazard.adol?s=0&cd=x&v=1&c=-77.538371.39.272973&d>

Pivot Bridge at Point of Rocks



Identification:

Preferred Structure Name: Pivot Bridge at Point of Rocks
 Structure Number: 048.20
 Other Structure Name(s):

Other Structure Name(s)
No records.

 Park: Chesapeake and Ohio Canal National Historical Park
 Park District: CHOH Monocacy District
 Historic District:

Historic District
No records.

 Structure State: Maryland
 Structure County: Frederick
 Region: National Capital
 Administrative Unit: Chesapeake and Ohio Canal National Historical Park
 LCS ID: 011649

Historical Significance:

National Register Status: Entered - Documented
 National Register Date: 08/09/1979
 National Historic Landmark?: No
 Significance Level: Contributing
 Short Significance Description: Bridge once spanned water.Canal chart:1825 VA,MD,PA.Canal built 1828-1850. 184.5 miles long.The principle areas of the canal's hist.sign.relate to the following; arch.& engr., commerce & transp., & conservation.

Construction Period:

Construction Period: Historic

Chronology:

Physical Event	Begin Year	Begin Year AD/BC	End Year	End Year AD/BC	Designer	Designer Occupation

<http://www.hscl.cr.nps.gov/insidenps/report.asp?STATE=&PARK=CHOH&STRUCTURE=&SO...> 3/22/2004

1.	Built	1834	AD			Wernwag, L. and Douglas, A. J.	Engineer
2.	Reconstructed	1844	AD	1852	AD	Bridge rebuilt.	Other
3.	Altered	1924	AD			Bridge made stationary.	Other
4.	Altered	1992	AD			Steel painted,railing replaced.	Other

Function and Use:

Primary Historic Function: Road Bridge
 Primary Current Use: Road Bridge
 Structure Contains Museum Collections?: No
 Other Functions or Uses:

Other Function(s) or Use(s)	Historic or Current
No records.	

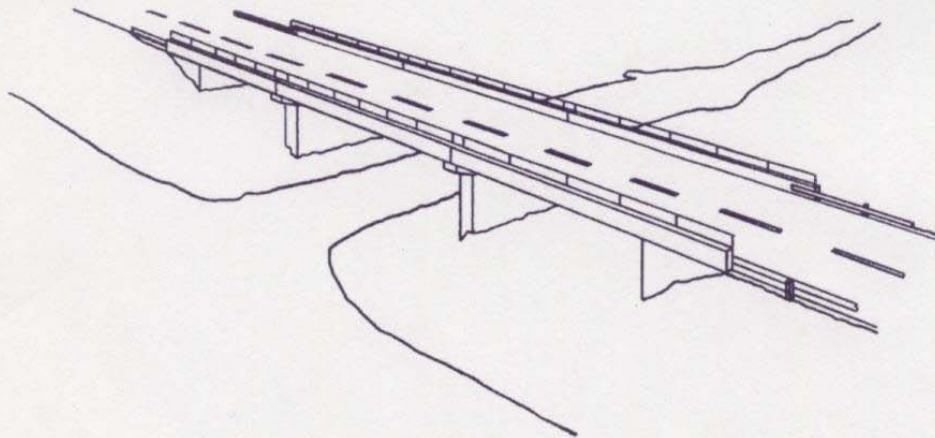
Physical Description:

Structure Type: Bridge
 Volume: 1 - 2,000 cubic feet
 Material(s):

	Structural Component(s)	Material(s)
1.	Superstructure	Sandstone/Brownstone
2.	Substructure	Sandstone/Brownstone
3.	Superstructure	Steel
4.	Superstructure	Wood

Short Physical Description: Originally 11' above canal.Raised to 17' in 1852.Fulcrum of pivot was 4' wide & 15' deep.22.5' free on either side of canal.Bridge approx. 20' wide.Bridge piers need little repointing.New wood railings and decking in good condition.

9.4 FHWA BRIDGE INSPECTION REPORT



BRIDGE INSPECTION REPORT

INSPECTION TYPE: ROUTINE

PIVOT BRIDGE

POINT OF ROCKS ROAD OVER C&O CANAL

C&O CANAL NATIONAL HISTORICAL PARK

STRUCTURE NO. 3100-003P

DATE OF INSPECTION: 12/6/01



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY
BRIDGE INSPECTION AND MANAGEMENT PROGRAM

BRIDGE IDENTIFICATION AND DESCRIPTION

MAIN SPAN MATERIAL: STEEL	NO. OF MAIN SPANS: 2
MAIN SPAN TYPE: STRINGER/MULTI-BEAM or GIRDER	NO. OF APPR. SPANS: 0
# OF BEAMS, MAIN SPAN..... 5	STRUCT. TOTAL LENGTH: 73.0 FT (22.3 M)
APPR. SPAN MATERIAL: N/A	MAX. SPAN LENGTH: 36.0 FT (11.0 M)
APPR. SPAN TYPE: N/A	DECK WIDTH: 12.3 FT (3.7 M)
DECK TYPE: WOOD OR TIMBER	CURB TO CURB WIDTH: 10.3 FT (3.1 M)
WEARING SURFACE: WOOD OR TIMBER	SKEW ANGLE: 0°
ABUT. #1 FOUNDATION: UNKNOWN	YEAR CONSTRUCTED: 1890 (EST.)
ABUT. #2 FOUNDATION: UNKNOWN	YEAR RECONSTRUCTED: 1980
PIER FOUNDATION: UNKNOWN	PROJ./PLAN REF. NO.: CX300099003 / NONE
MAIN SUBSTR. MATERIAL: 0	FRACTURE CRITICAL? NO
ADDITIONAL DATA:	

LOCATION

C&O CANAL NATIONAL HISTORICAL PARK	LOCATION: 0.3 MILES FROM POTOMAC RIVER
STATE: MARYLAND	
COUNTY: FREDERICK	
FACILITY CARRIED: POINT OF ROCKS ROAD	
FEATURE INTERSECTED: C&O CANAL	
MILE POINT..... 4.82 (KILOMETER POINT 7.76)	

STRUCTURE EVALUATION SUMMARY

This bridge is structurally sound at this time, but has some problems which should be corrected in the near future. These problems include widespread rusting of the structural steel and bearings, widespread moderate deterioration of the timber deck planks and runners, deterioration of the masonry mortar joints, and settlement and pavement deterioration at both approaches. Corrective action should be taken as outlined in this report. With repairs and regular maintenance, a useful life of 20-25 years can be expected for this structure under current loading conditions.

INSPECTION TEAM LEADER: NOLAN ASSOC, INC	INSPECTION TEAM: L. SABAD, T. ECKHART
OFFICE TEAM LEADER: MARCUS MILLER STERLING, VA (703) 404-6252	PROGRAM COORDINATOR: JOHN THIEL STERLING, VA (703) 404-6251
REPORT REVIEW:	M. MILLER
REPORT APPROVAL <i>Marcus Miller</i> FOR JOHN THIEL	DATE: 2/16/02

RECOMMENDATIONS AND ESTIMATED COSTS

STRUCTURE NO. 3100-003P
DATE OF INSPECTION: 12/6/01

226 PRIORITY OF IMPROVEMENT

C

A (Critical) - Structure is closed, in imminent danger of collapse, presents a critical safety hazard.
 B (Major) - Structure is critically deficient or presents a safety hazard, but can remain in service at reduced loads with frequent inspections.
 C (Moderate) - Structure is deficient, functionally obsolete, or requires substantial repairs to prevent a critical deficiency or unsafe condition.
 D (Minor) - Structure is generally in good condition. Preventative maintenance may be required.
 E (Special) - Structure is under construction or reconstruction.

REC. NO.	ITEM NO.	REHABILITATION/RECONSTRUCTION NEEDED WITHIN 5 YEARS	PRELIMINARY COST ESTIMATES			
			BRIDGE WORK ONLY		TOTAL CONTRACT	
			REHAB.	CONSTR.	REHAB.	CONSTR.
SUBTOTALS:			\$0	\$0	\$0	\$0

REC. NO.	ITEM NO.	NEEDED WITHIN 10 YEARS	PRELIMINARY COST ESTIMATES			
			BRIDGE WORK ONLY		TOTAL CONTRACT	
			REHAB.	CONSTR.	REHAB.	CONSTR.
SUBTOTALS:			\$0	\$0	\$0	\$0

REC. NO.	ITEM NO.	MAINTENANCE RECOMMENDATIONS (NOT FLHP ELIGIBLE)	PRELIMINARY COST ESTIMATES	
			IN HOUSE	CONTRACT
1	59.1.2	CLEAN AND PAINT STRUCTURAL STEEL AND BEARINGS.	\$15,000	\$30,000
2	58.1	REPLACE TIMBER DECK PLANKS AND RUNNERS.	\$10,000	\$20,000
3	60.6,13 223.1	REPOINT MASONRY MORTAR JOINTS AS NECESSARY.	\$2,000	\$4,000
4	222.4,6,7	PATCH BOTH APPROACHES AS NECESSARY. POST BRIDGE FOR 10 TON LIMIT.	\$2,000	\$4,000
TOTAL MAINTENANCE:			\$29,000	\$58,000

REMARKS: See page 6 for load rating information. Cost estimates are approximate and are for preliminary planning purposes only; they should not be used as a complete or final engineer's estimate.

FIELD INSPECTION REPORT

STRUCTURE NO. 3100-003P
DATE OF INSPECTION: 12/6/01

CONDITION RATING CODES FOR ITEMS 58 - 62, 222, 223	
NOT APPLICABLE	3 SERIOUS CONDITION - loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
9 EXCELLENT CONDITION	2 CRITICAL CONDITION - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the structure until corrective action can be taken.
8 VERY GOOD CONDITION - no problems noted.	1 "IMMINENT" FAILURE CONDITION - major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Structure is closed to traffic but corrective action may return structure to light service.
7 GOOD CONDITION - some minor problems.	0 FAILED CONDITION - out of service; beyond corrective action.
6 SATISFACTORY CONDITION - structural elements show some minor deterioration.	
5 FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling, or scour.	
4 POOR CONDITION - advanced section loss, deterioration, spalling, or scour.	

CONDITION RATING CODE EQUIVALENTS FOR SUB-ELEMENTS	
G = GOOD (CODES 7 - 9) F = FAIR (CODES 5 - 6) P = POOR (CODES 0 - 4)	

58. DECK		5	ITEM REFERENCE AND REMARKS	
1. DECK SLAB	F		58.1, 3	WIDESPREAD MODERATE DETERIORATION OF DECK PLANKS AND RUNNERS. AREAS OF MOLD ON DECK UNDERSIDE.
2. EXPANSION JOINTS	N		58.4	BUMP AT EACH ABUTMENT BECAUSE RUNNERS ARE APPROXIMATELY 2" HIGHER THAN APPROACHES.
3. WEARING SURFACE	F		58.6	MINOR VEHICLE DAMAGE TO BRIDGE RAILING.
4. RIDEABILITY	G		59.1	MODERATE RUSTING OF BEARINGS. MODERATE DEBRIS ACCUMULATION ON BEARING PLATES. EXTERIOR BEAMS, #1 AND #5, ARE CHANNELS.
5. CURBS, SIDEWALKS, AND MEDIAN	N		59.2	MINOR RUSTING OF BEAMS. PUNCHED HOLES IN WEBS OF EXTERIOR BEAMS.
6. PARAPETS AND/OR RAILINGS	G		59.6	SEVERE RUSTING OF LATERAL BRACING WITH APPROXIMATELY 20% SECTION LOSS; MINOR RUSTING OF BRIDGE POST SUPPORTS.
7. DRAINS AND DRAINAGE	G		59.7	WIDESPREAD MODERATE DETERIORATION OF PAINT ON STRUCTURAL STEEL.
8. UTILITIES	N		59.9	NOTICEABLE VIBRATION UNDER LOADING.
9. DEFLECTION AND/OR VIBRATION	G		60.1,3	SEVERAL MASONRY BLOCKS AT BOTH ABUTMENTS HAVE SHIFTED OUTWARD SLIGHTLY. DISPLACED BLOCK AT EAST END OF NORTH ABUTMENT BEAMSEAT. MODERATE CRACKING OF STONE AT BOTH ABUTMENTS. CORNER OF STONE AT NORTH ABUTMENT, WEST BEARING SEAT HAS FRACTURED OFF; BEARING PLATE OF WEST EXTERIOR BEAM IS SLIGHTLY UNDERMINED.
10. OTHER	N			
59. SUPERSTRUCTURE		5		
BEARING DEVICES	F			
GIRDERS OR BEAMS	F			
3. ARCH(ES) OR SLAB(S)	N			
4. FLOOR BEAMS AND STRINGERS	N			
5. TRUSSES	N			
6. DIAPHRAGMS AND BRACING	P			
7. PAINT	F			
8. FASCIA(E)	N			
9. DEFLECTION AND/OR VIBRATION	F			
10. ALIGNMENT	G			
11. OTHER	N			
60. SUBSTRUCTURE		6		
ABUTMENTS				
1. BREASTWALLS OR COLUMNS	F			
2. PILE BENTS	N			
3. CAPS AND/OR BEARING SEATS	F			
4. BACKWALLS AND/OR BULKHEADS	G			
5. FOUNDATIONS	N			
6. WINGWALLS	G			
7. WEEP HOLES	N			
8. EXPANSION JOINTS	N			
9. EROSION AND/OR SCOUR	G			
10. SETTLEMENT OR DEFLECTION	G			
11. SLOPE PROTECTION	N			
12. OTHER	N			
PIER(S)				
13. WALL(S) AND/OR COLUMN(S)	G			
PILE BENT(S)	N			
15. CAPS AND/OR BEARING SEATS	G			
16. FOUNDATIONS	N			
17. EROSION AND/OR SCOUR	G			
18. SETTLEMENT OR DEFLECTION	G			
19. OTHER	G			

FIELD INSPECTION REPORT

STRUCTURE NO. 3100-003P
DATE OF INSPECTION: 12/6/01

ITEM REFERENCE AND REMARKS

61. CHANNEL	8
1. ALIGNMENT	G
2. EROSION AND/OR SCOUR	G
3. CHANNEL PROTECTION	G
4. WATERWAY OBSTRUCTIONS	G
5. OTHER	N
6. ADEQUACY OF OPENING	SUFF.
7. NORMAL VELOCITY:	LOW
8. AVG. CLEAR OPENING	15 FT.
9. STREAM BED COMPOSITION:	
SILT	

222. APPROACHES	6
1. APPROACH SLABS	N
2. RELIEF JOINTS	N
3. APPROACH GUARDRAIL	F
4. SURFACING	F
5. EROSION	N
6. SETTLEMENT	F
7. SIGNS	N
8. ALIGNMENT	F
9. OTHER	F

223. RETAINING WALL	6
1. WALL	F
2. WEEP HOLES	N
FOOTINGS	N
EROSION AND/OR SCOUR	G
5. SETTLEMENT OR DEFLECTION	G
6. OTHER	N

36. TRAFFIC SAFETY FEATURES	
A. BRIDGE RAILING	1
B. TRANSITIONS	N
C. APPROACH GUARDRAIL	N
D. APPROACH GUARDRAIL ENDS	N

TRAFFIC SAFETY RATING CODES	
0 - Does not meet standards or a safety feature is required and none is provided.	
1 - Meets currently acceptable standards.	
N - Not applicable or a safety feature is not required.	

60.6	MINOR DETERIORATION OF SOUTHWEST WINGWALL MORTAR JOINTS, MAINLY NEAR TOP OF WALL.
60.13	MINOR DETERIORATION OF PIER WALL MASONRY; MODERATE DETERIORATION OF MORTAR JOINTS.
222.3	MINOR TO MODERATE SCRAPES AND DAMAGE TO RAILING AT BOTH APPROACHES.
222.4,6	MINOR TO MODERATE SETTLEMENT AND CRACKING OF PAVEMENT AT BOTH APPROACHES.
222.7	NO LOAD CAPACITY SIGNS IN PLACE.
222.8	STRUCTURE IS ON ABRUPT VERTICAL CURVE.
223.1	RETAINING WALL AT WEST ABUTMENT HAS NO MORTAR IN JOINTS.

STRUCTURE LOAD RATING

STRUCTURE NO. 3100-003P

TRUCK TYPE	INVENTORY RATING (NORMAL TRAFFIC)		OPERATING RATING (MAXIMUM LOAD)	
	TONS	METRIC TONS	TONS	METRIC TONS
H	8	7	10	9
HS	11	10	15	14
TYPE 3	10	9	13	12
TYPE 3S2	15	14	21	19
TYPE 3-3	19	17	27	24

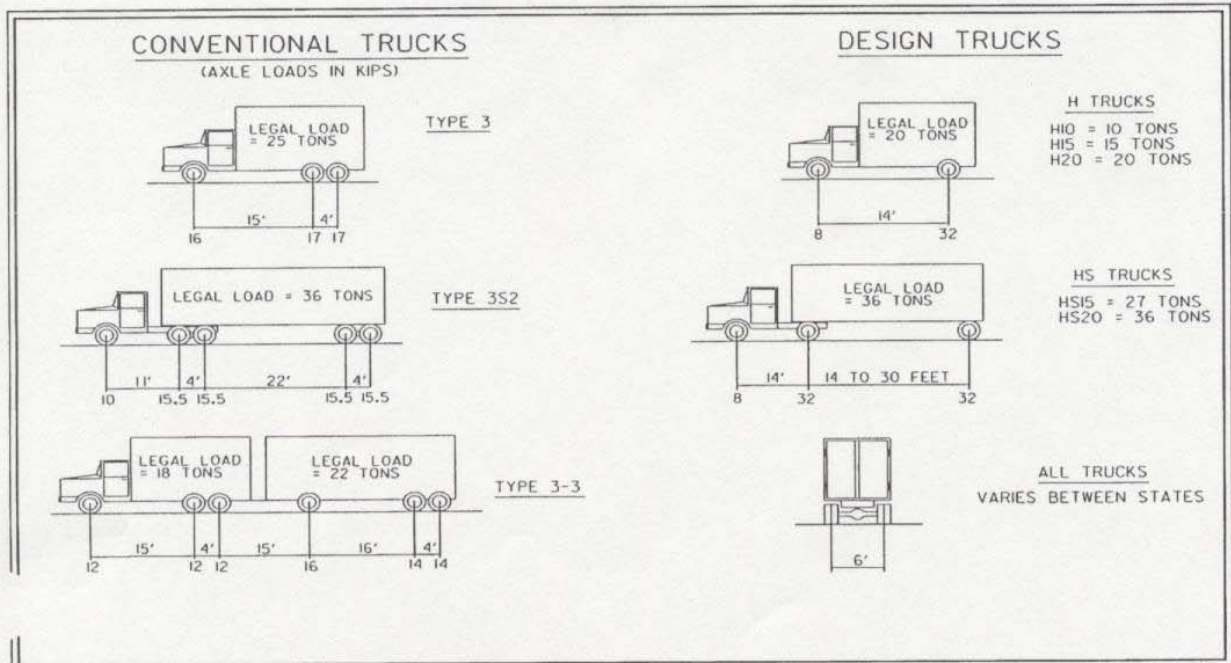
DESIGN LOADING: OTHER OR UNKNOWN

<input type="checkbox"/>	ORIGINAL LOAD CAPACITY REMAINS
<input type="checkbox"/>	ORIGINAL LOAD CAPACITY REDUCED
<input checked="" type="checkbox"/>	ORIGINAL LOAD RATING CALCULATION APPLICABLE
<input type="checkbox"/>	ORIGINAL LOAD RATING CALCULATION REVISED

DATE OF LOAD RATING CALCULATION: 10/1984

LOAD RATING CONTROLLED BY: BEAM MOMENT CAPACITY

REMARKS:



STRUCTURE INVENTORY AND APPRAISAL

STRUCTURE NO. 3100-003P

STRUCTURE IDENTIFICATION

(201) PARK: C&O CANAL NATIONAL HISTORICAL PARK	(1) STATE: 243-MARYLAND (MD)
(202) STRUCT. NAME: PIVOT BRIDGE	(2) STATE HWY. AGENCY DIST.: . 0
(203) STRUCTURE KIND: .. 1-BRIDGE	(3) COUNTY CODE: 021-FREDERICK
(204) STRUCTURE NO.: 3100-003P	(4) CITY/PLACE CODE: 0-
(205) NPS REGION: 2-NATIONAL CAPITAL	(5) INVENTORY ROUTE: 1642230
(206) ROUTE CODE NO.: .. 223	(6) FEATURES INTERSECTED: C&O CANAL
(207) ROAD SECTION NO.: 003P	(7) FACILITY CARRIED:..... POINT OF ROCKS ROAD
(208) NPS ROAD CLASS.: . 2	(8) STATE STRUCTURE NO.: 3100003P0000000
(209) WITHIN NPS BNDRY Y	(9) LOCATION: 0.3 MILES FROM POTOMAC
(210) OPERATING UNIT: ... PARK	(10) INV. RTE. - MIN. VERT. CLR.: 9999
(211) NPS PROJECT NO(S) CX300099003	(11) MILE POINT: 4.82 (KILO POINT 7.76)
(212) DRAWING NO(S): NONE	(27) YEAR BUILT: 1890 (EST. (106) YEAR REBUILT: 1980
(21) MAINTAINED BY: 66-NATIONAL PARK SERVICE	(20) TOLL: 3-FREE ROAD
(22) OWNER: 66-NATIONAL PARK SERVICE	(37) HISTORICAL DESIGNATION:.. 2-ELIGIBLE FOR REGISTER

STRUCTURE DESCRIPTION, FOUNDATION, AND DECK TYPE

(43) MAIN STRUCT. TYPE: ... 302-STEEL-STRINGER/MULTI-BEAM or GI	(44) APPROACH STRUCT. TYPE: . 000-OTHER-OTHER
(45) NO. OF MAIN SPANS: ... 2	(46) NO. OF APPROACH SPANS: . 0
(48) MAX. SPAN LENGTH: 36.0 FT (11.0 M)	(108) WEAR SURF/PROTECT SYSTE
(49) STRUCTURE LENGTH: . 73.0 FT (22.3 M)	A)TYPE WEARING SURFACE: 7-WOOD OR TIMBER
(216) ABUTMENT FDNS.: 00-#1: UNKNOWN #2: UNKNOWN	B)TYPE MEMBRANE: 0-NONE
(217) PIER FDNS.: 00-#1: UNKNOWN #2: UNKNOWN	C)TYPE PROTECTION: 0-NONE
(107) DECK TYPE: 8-WOOD OR TIMBER	(218) IS SALT USED? N

LOAD RATING AND POSTING

(31) DESIGN LOAD: OTHER OR UNKNOWN	(41) LOAD RESTRICTION: B-OPEN, POSTING REC.
(66) INVENTORY RATING: ... 11.0 TONS (10.0 METRIC TONS)	(70) BRIDGE POSTING: 0-POSTING REQUIRED
(64) OPERATING RATING: ... 15.0 TONS (13.6 METRIC TONS)	

GEOMETRY, TRAFFIC, AND NAVIGATIONAL DATA

(16) LATITUDE: 0 ° ' .	(17) LONGITUDE: 0 ° ' .	(52) DECK WIDTH: 12.3 FT (3.7 M)
(9) DETOUR LENGTH: 0.00 MI (0.0 KM)	(32) APPR. ROADWAY WIDTH: 9.0 FT (2.7 M)	(213) APPR. PAVEMENT WIDTH: 9.0 FT (2.7 M)
3) LANES ON STRUCTURE: 1	LANES UNDER STRUCTURE: 0	LEFT SHOULDER: 0.0 FT (0.0 M) RIGHT: 0.0 FT (0.0 M)
(42) SERVICE ON: 1-HIGHWAY	SERVICE UNDER: 5-WATERWAY	(33) BRIDGE MEDIAN: 0-NO MEDIAN
(29) AVG. DAILY TRAFFIC 159	(30) YEAR OF ADT: 2001	(34) SKEW ANGLE: 0°
(114) FUTURE ADT: 175	(115) YEAR OF ADT: 2021	(35) DECK FLARE? 0
(101) PARALLEL STRUCTURE:..... N-NONE	(47) TOTAL HORIZ. CLEARANCE: 10.3 FT (3.1 M)	(50) SIDEWALKS: LEFT:0.0 FT (0.0 M) RIGHT:0.0 FT (0.0 M)
(38) NAVIGATION CONTROL? 0	(214) BRIDGE RAIL TYPE: 171-FULL HEIGHT (NO P	(215) BRIDGE RAIL HEIGHT: 3.4 FT (1.0 M)
(39) VERTICAL CLEARANCE: 0 FT (0.0 M)	(53) MIN. VERT. CLEAR. OVER DECK: 9999	(54) MIN. VERT. UNDERCLEARANCE: 0.0 FT (0.0 M)
(40) HORIZONTAL CLEARANCE: 0 FT (0.0 M)	(111) ABUT. OR PIER PROTECTION: 1-NAV PROTECTION NOT REQUIR	
HORIZONTAL UNDERCLEARANCE: (55) RIGH 9999 (56) LEFT 998		

CONDITION AND APPRAISAL DATA, PROPOSED IMPROVEMENTS, AND COSTS

(58) DECK: 5	(67) STRUCTURAL EVALUATION: 5
(59) SUPERSTRUCTURE: 5	(68) DECK GEOMETRY: 3
(60) SUBSTRUCTURE: 6	(69) UNDERCLEARANCES: N
(61) CHANNEL: 8	(71) WATERWAY ADEQUACY: 8
(62) CULVERT: N	(72) APPROACH ALIGNMENT: 6
(222) APPROACHES: 6	(113) SCOUR CRITICAL: 8
(223) RETAINING WALL: 6	(225) PURPOSE OF IMPROVEMENT: 1-MAINTENANCE
(224) EST. REMAINING LIFE: 10 YRS	(226) IMPROVEMENT PRIORITY: C-MODERATE
(36) TRAFFIC SAFETY FEATURES: 1NNN	(227) MAINTENANCE COST: \$29,000.00
(75) WORK TYPE:..... 352-GENERAL REHAB,OWNER	(228) REPAIR/REHAB. COST: \$0.00
(76) IMPROVEMENT LENGTH:..... 0.0 FT (0.0 M)	(229) CONSTRUCTION COST: \$0.00

INSPECTION DATES

(90) INSPECTION DATE: 12/01	(91) FREQ. OF INSP: 24 MOS	(92) CRITICAL FEATURE INSPECTION (CFI)
(219) ADD. STUDIES NEEDED? N0-NONE	(A) FRACT. CRIT.: N INSP. EVERY 0 MOS LAST INSP. 0	(B) UNDERWATER N INSP. EVERY 0 MOS LAST INSP. 0
(220) SPECIAL STUDY TYPE: 0-NONE	(C) SPECIAL INSP.:N INSP. EVERY 0 MOS LAST INSP.: 0	
(21) SPECIAL STUDY DATE: 00		

(30) REMARKS / HISTORY:
1980-MAJOR RECONSTRUCTION/SUPERSTRUCTURE.

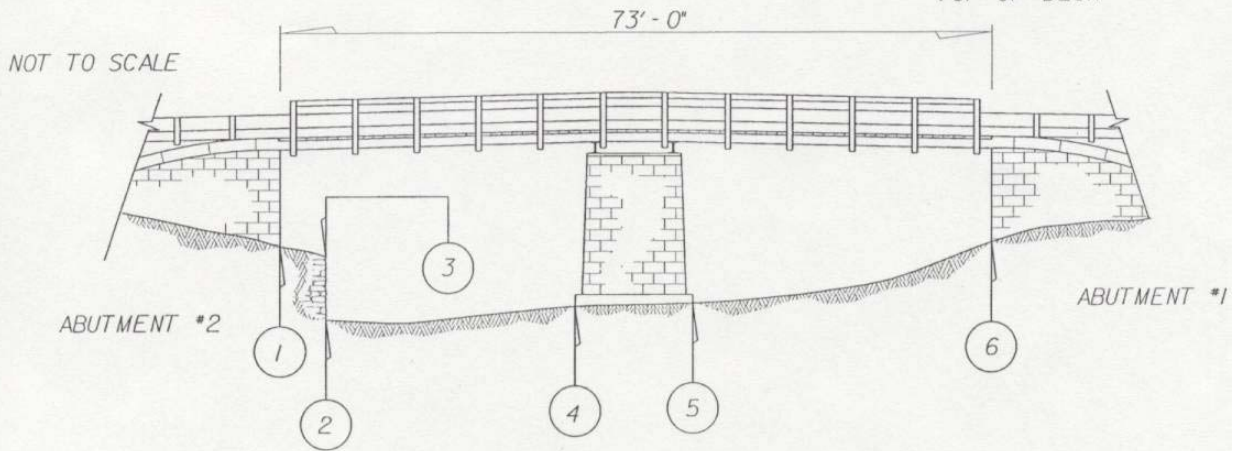
(231) ADDITIONAL CONSIDERATIONS:

POINT OF ROCKS ROAD OVER C&O CANAL

EAST (DOWNSTREAM) SIDE

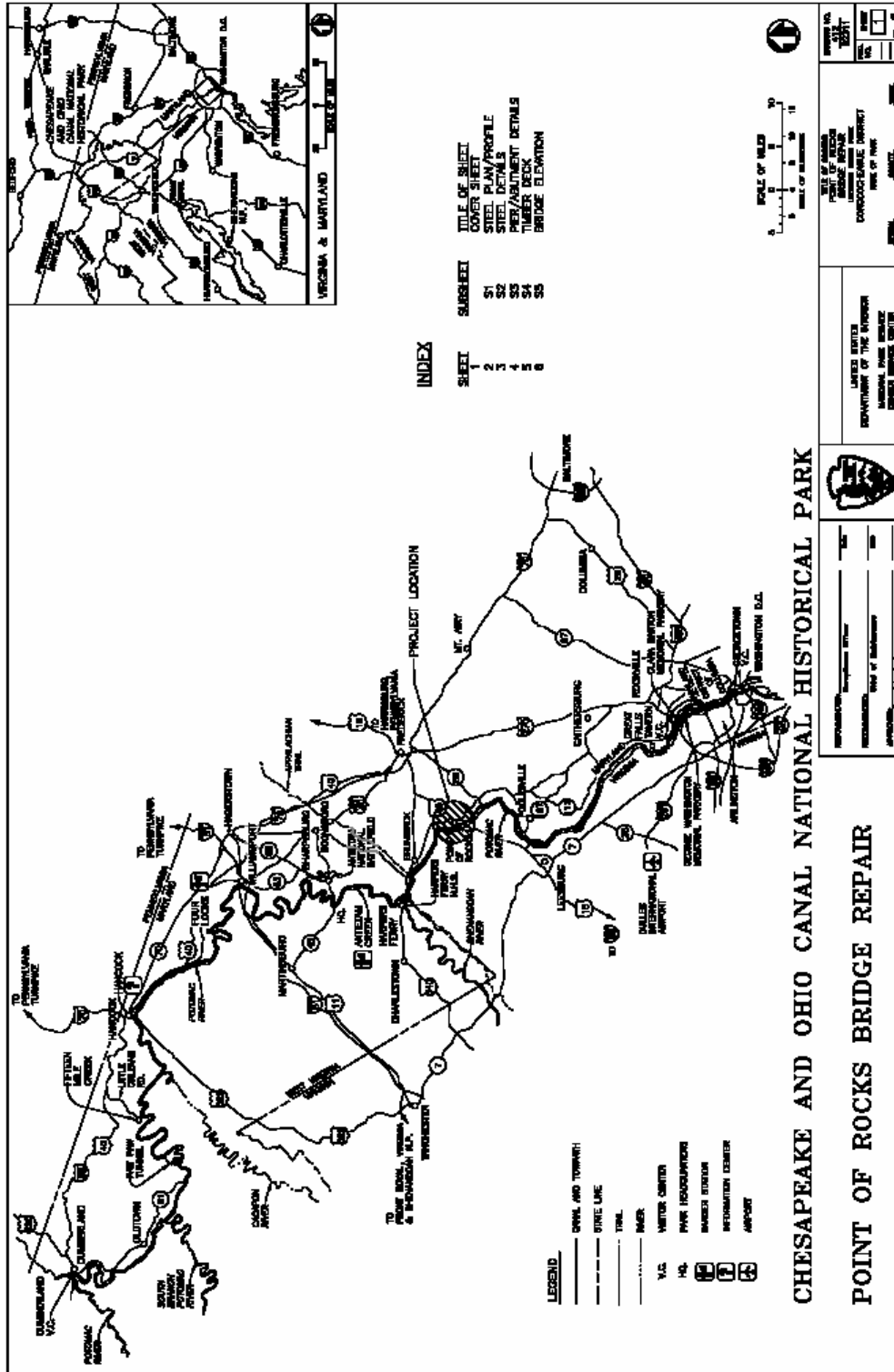
← SOUTH TOWARD POTOMAC RIVER

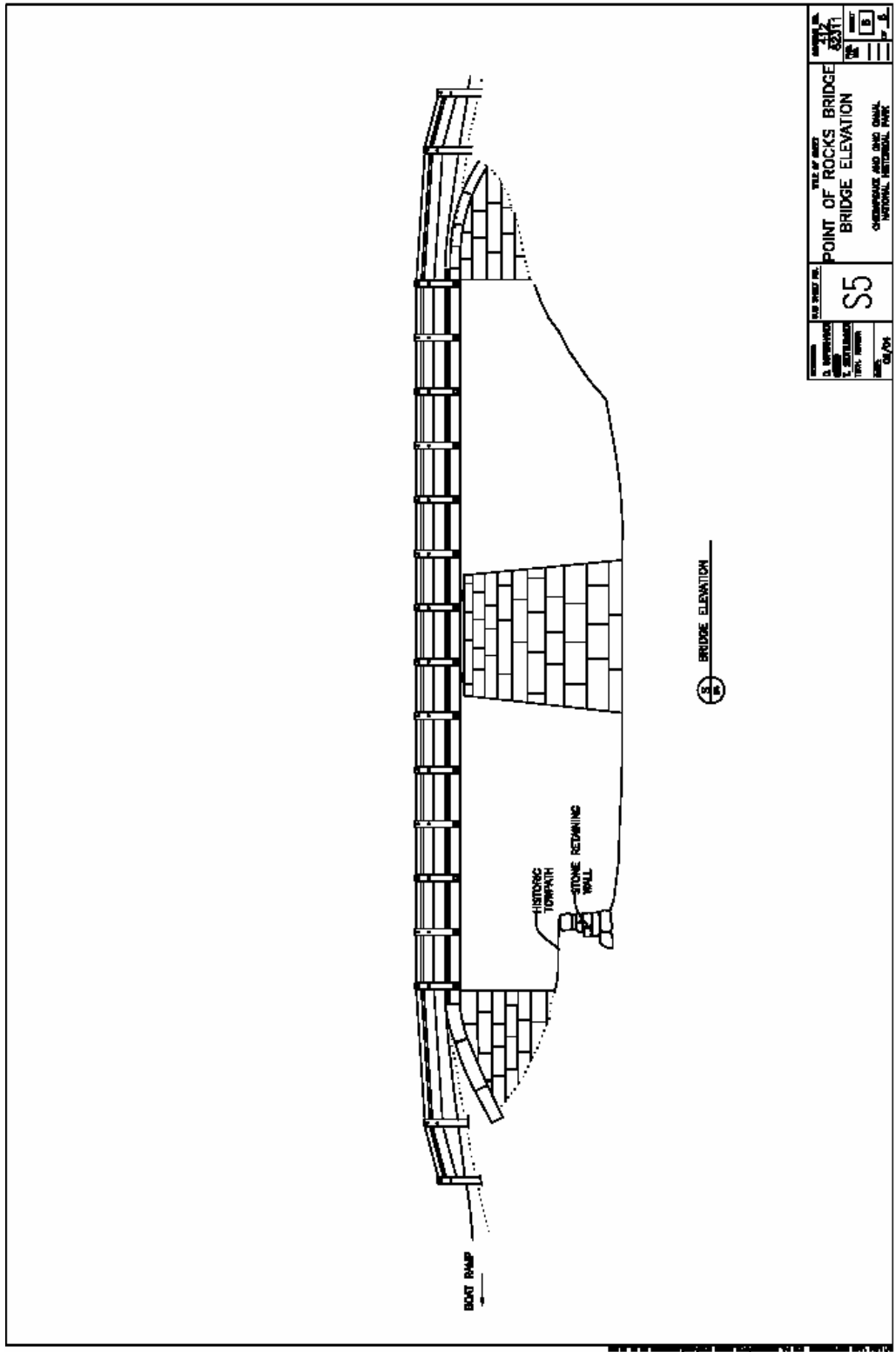
NOTE:
PROFILE MEASUREMENTS
TAKEN FROM
TOP OF DECK



DATE	1	2	3	4	5	6
2/80	10.3'	16.5'	11.0'	17.5'	16.9'	9.1'
6/84	10.1'	16.6'	11.0'	17.4'	16.5'	9.0'
4/86	9.9'	15.6'	11.0'	16.3'	15.9'	9.3'
7/88	10.2'	15.8'	11.5'	16.5'	16.1'	9.0'
12/89	10.3'	15.5'	11.6'	16.7'	16.2'	9.1'
10/91	10.4'	15.9'	11.6'	17.1'	16.3'	9.4'
11/93	10.4'	15.8'	11.6'	16.0'	16.4'	9.2'
11/95	10.6'	15.8'	11.4'	16.8'	16.4'	9.8'
12/97	10.7'	15.7'	11.5'	16.8'	16.4'	9.7'
10/99	10.3'	15.7'	11.5'	16.7'	15.9'	9.5'
12/01	10.2'	15.6'	11.5'	16.6'	15.8'	9.3'

9.5 ALTERNATIVE 2A DESIGN DRAWINGS





9.6 PHOTOGRAPHS

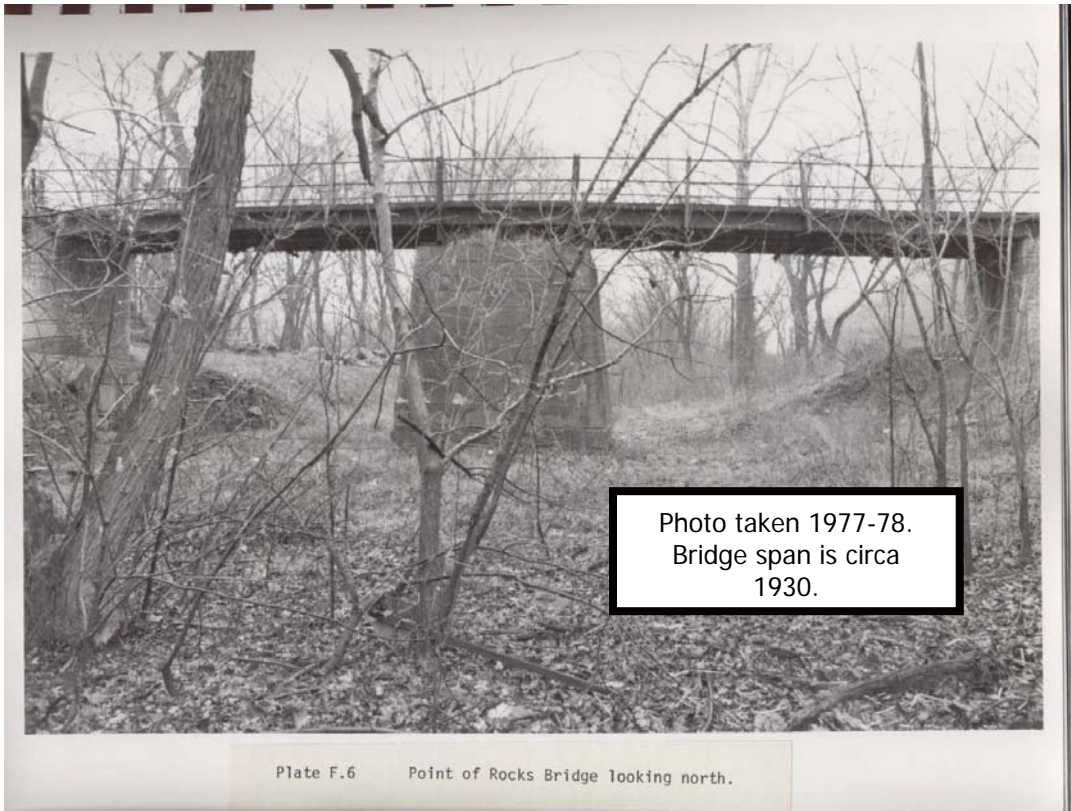
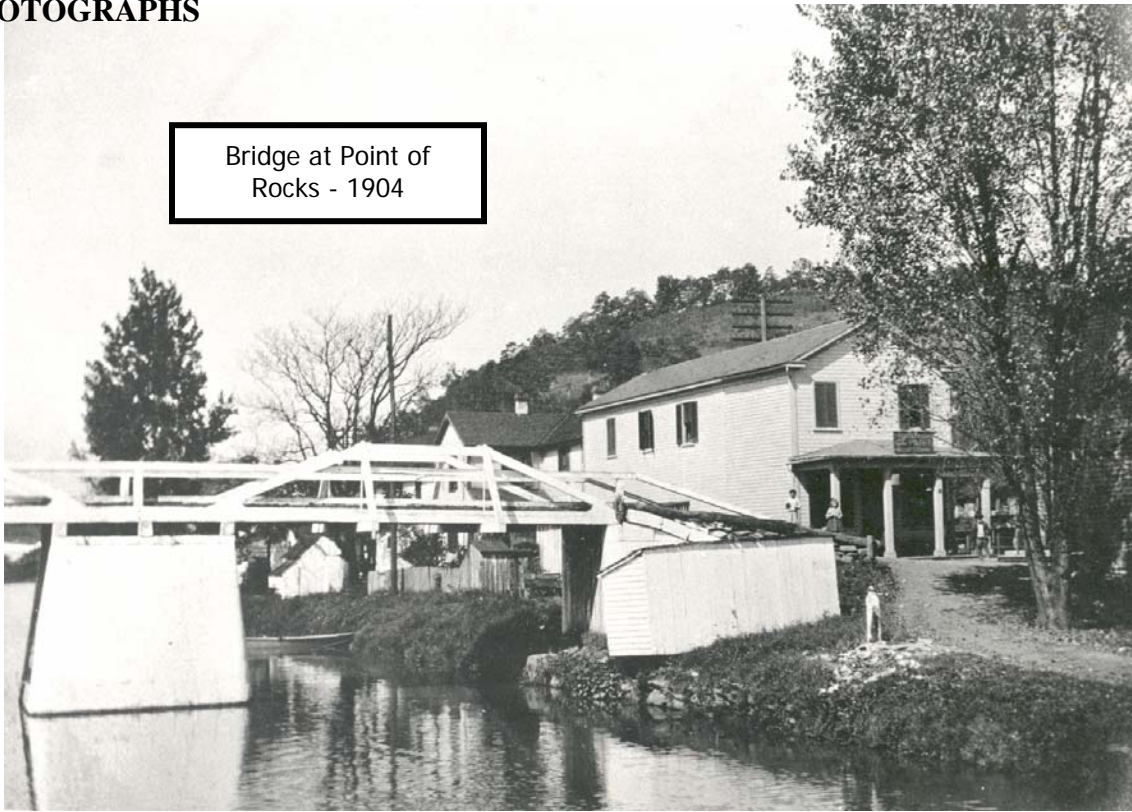




Photo taken 1977-78.
Bridge span is circa 1930.

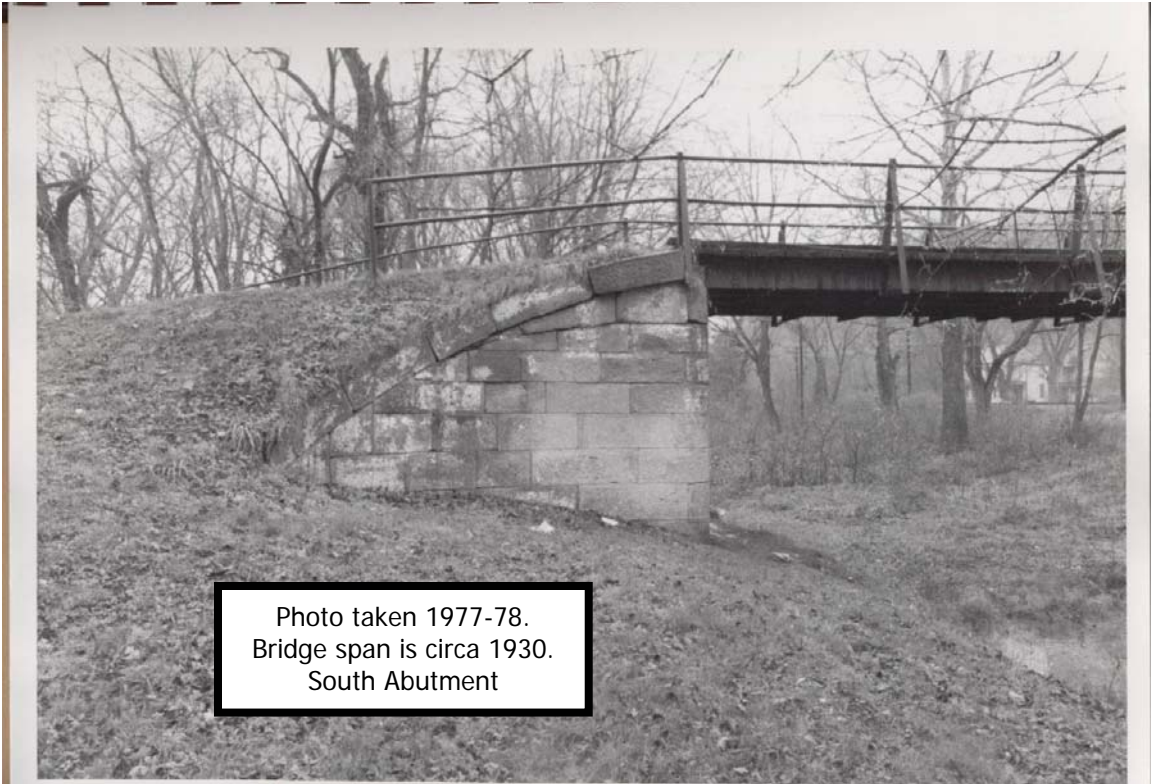


Photo taken 1977-78.
Bridge span is circa 1930.
South Abutment

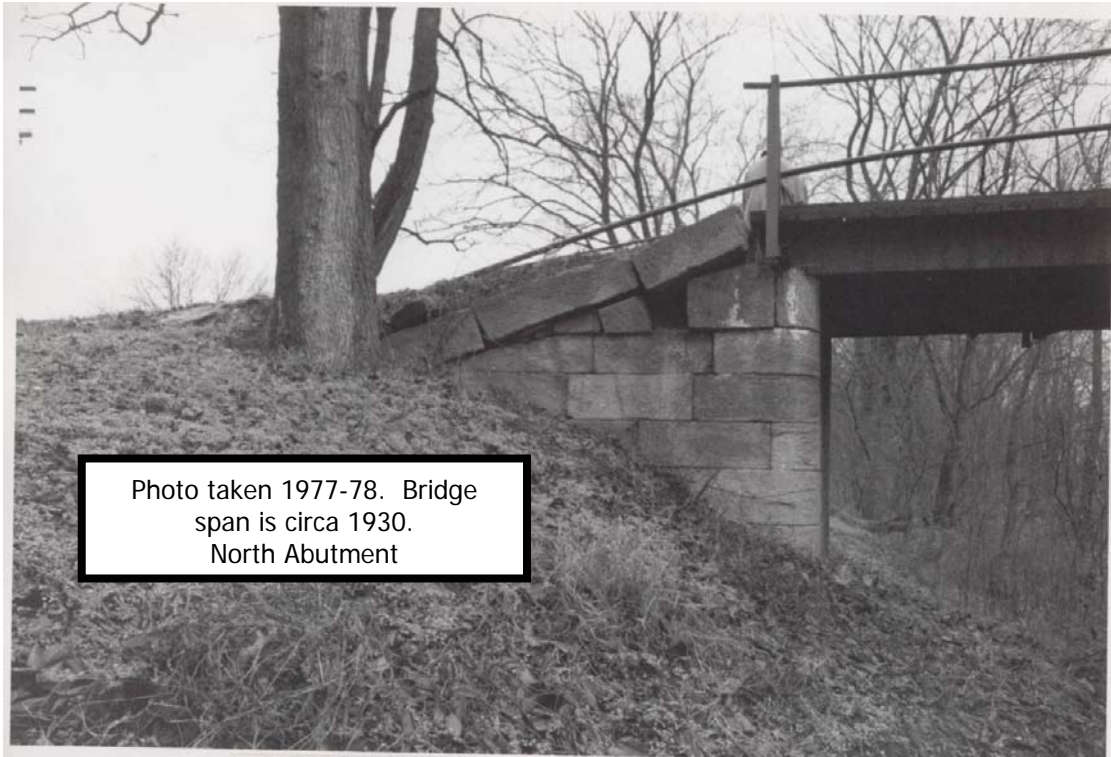


Photo taken 1977-78. Bridge span is circa 1930. North Abutment

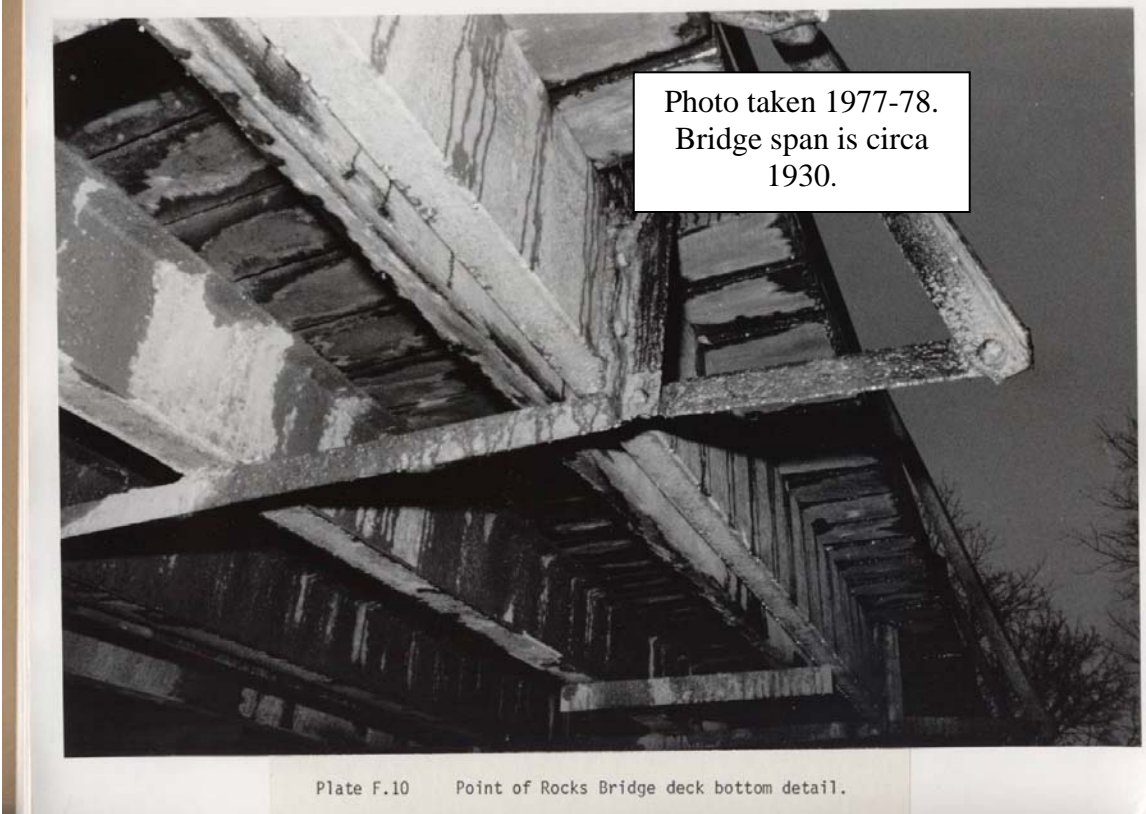


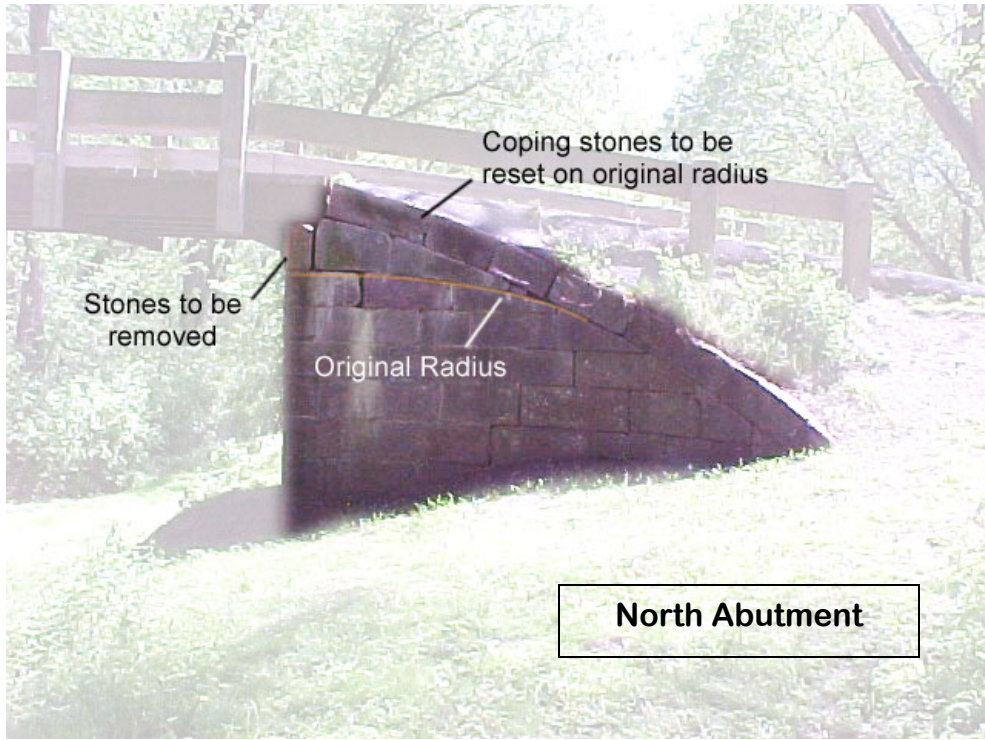
Photo taken 1977-78. Bridge span is circa 1930.

Plate F.10 Point of Rocks Bridge deck bottom detail.



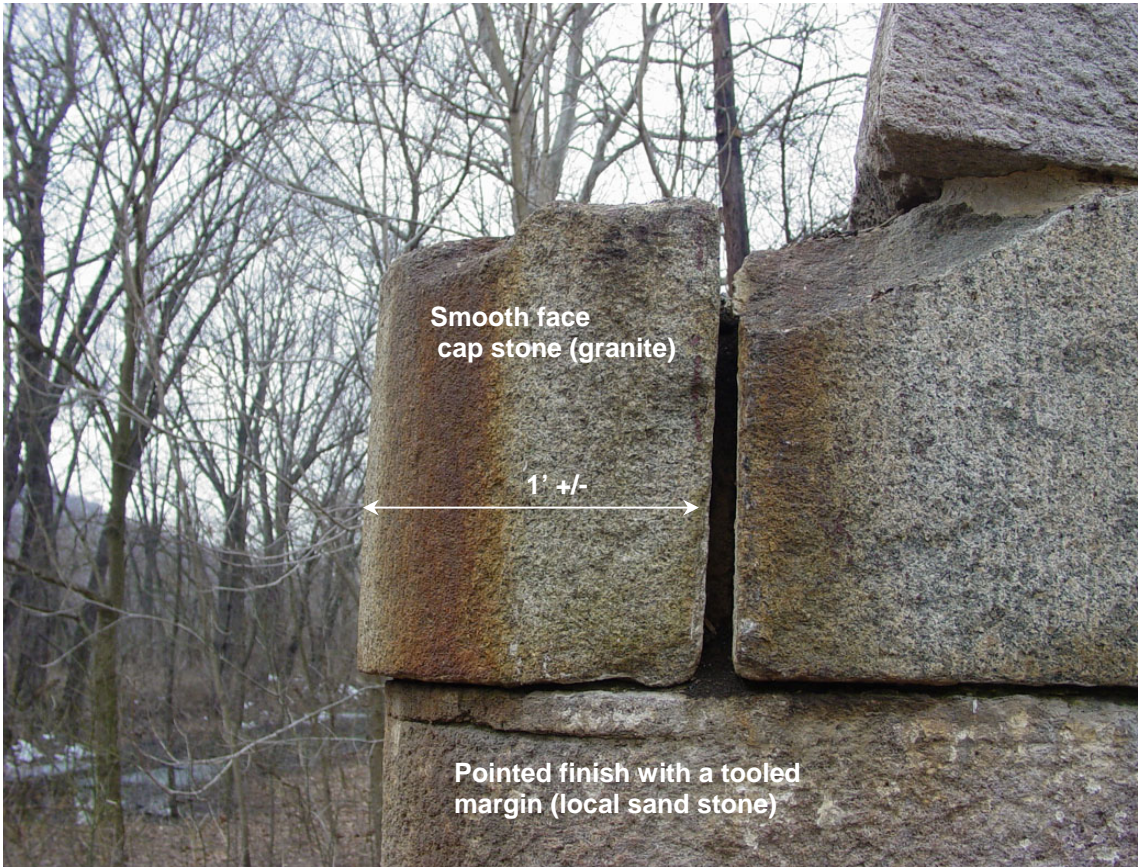
Bridge at Point of
Rocks - 1994

2002 - 2003 site photos





North abutment with steel super structure and bridge decking removed.



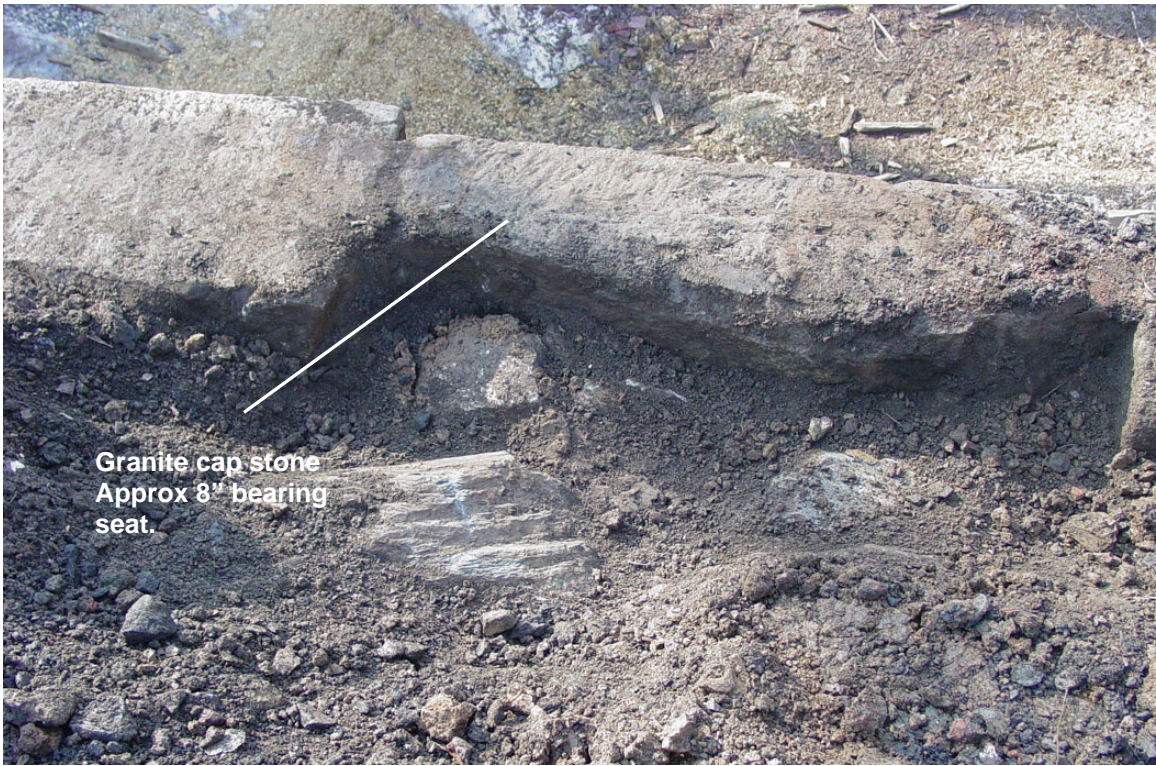
North Abutment



Excavation behind granite cap stones - North Abutment



Excavation behind granite cap stones - North Abutment



North abutment with granite cap stones removed.



North abutment with granite cap stones removed.



Center pier with steel super structure and bridge deck removed.



Construction of temporary causeway.
Pivot bridge structure to left. White filter
fabric visible in left center.

