

**MARYLAND HISTORICAL TRUST
DETERMINATION OF ELIGIBILITY FORM**

NR Eligible: yes ___
no ___

Property Name: Stone Culverts, Baltimore & Ohio Railroad Line, Ijamsville vic. Inventory Number: F-5-159
 Address: Reich's Ford Road City: Ijamsville vic. Zip Code: 21754
 County: Frederick USGS Topographic Map: Urbana
 Owner: CSX Transportation Is the property being evaluated a district? No
 Tax Parcel Number: 277 Tax Map Number: 87 Tax Account ID Number: N/A
 Project: Bush Creek Interceptor Agency: U.S. Army Corps of Engineers
Maryland Department of the Environment
 Site visit by MHT Staff: X no ___ yes ___ Name: ___ Date: ___
 Is the property located within a historic district? ___ yes X no

If the property is within a district District Inventory Number: _____
 NR-listed district ___ yes Eligible district ___ yes District Name: _____
 Preparer's Recommendation: Contributing resource ___ yes ___ no Non-contributing but eligible in another context ___

If the property is not within a district (or the property is a district)
 Preparer's Recommendation: Eligible ___ yes X no

Criteria: ___ A ___ B ___ C ___ D Considerations: ___ A ___ B ___ C ___ D ___ E ___ F ___ G ___ None

Documentation on the property/district is presented in: Bush Creek Interceptor. Phase I Archeological Investigation of the Proposed Sewer Pipeline, Frederick County, Maryland, 2008

Description of Property and Eligibility Determination: *(Use continuation sheet if necessary and attach map and photo)*

Summary Description

Two, stone, common culverts are located within the Baltimore & Ohio (B & O) Railroad right-of-way acquired in Frederick County, Maryland, circa 1830. The isolated water drainage structures are sited in the vicinity of Bush Creek and are thought to have once served to direct water beneath the railroad bed. The engineering features currently are located in wooded areas; no evidence of the railroad bed, tracks, or other features is found in the area. The simple, utilitarian structures adopt a side wall and lintel design and are of undressed stone dry wall construction.

The culverts previously were identified as 18FR859 and 18FR861 in an archeological investigation undertaken in 2008.

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Eligibility recommended <u>X</u>	Eligibility not recommended ___
Criteria: <u>X</u> A ___ B <u>X</u> C <u>X</u> D	Considerations: ___ A ___ B ___ C ___ D ___ E ___ F ___ G ___ None
Comments: <u>Eligible for association with earliest phase of development of B&O railroad; example of a type of structure, retains integrity; information potential.</u>	
<u>Jonathan S. [Signature]</u> Reviewer, Office of Preservation Services	<u>3/11/09</u> Date
<u>[Signature]</u> Reviewer, NR Program	<u>3/4/09</u> Date

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Small Culvert (18FR861)

The small culvert is located southeast of the dwelling located at 9479 Reich's Ford Road and north of Bush Creek. The culvert is located in a sparsely wooded area of relatively level terrain and is oriented in an east-west direction. The culvert, which is nearly completely infilled, consisted of a large undressed stone lintel, or cover; the structure spans an intermittent stream leading to Bush Creek. The southwest end lintel has vertical tool marks. The visible portion of the lintel measured approximately 6' long and 1'-5" tall. The width of the culvert is approximately 33', where a depression was observed that might indicate the location of the northeast opening of the culvert. This distance approximates the width of a single rail tract. No evidence of the rail bed or associated features survives.

Large Culvert (18FR859)

The large culvert is located southwest of the dwelling located at 9479 Reich's Ford Road and south of the existing CSX railroad tracks. The culvert is located in a sparsely wooded area on the north bank of Bush Creek. The structure crosses an intermittent stream that was more substantial than the stream associated with the small culvert. The culvert features undressed, coursed, shaped stone of various sizes. The dry laid wall consisted of smaller stones wedged between large stones. Visible features of the culvert include the lintel, which measures 6'-8" long and 1'-2" high, and the wing walls, which measure 7' and 7'-6" long, on the northwest face of the culvert. Tool marks are visible on the lintel. Portions of the wing walls and cover, which consist of two stone slabs, one laid on top of the other, are visible on the southeast side of the culvert. The culvert opening measures approximately 4'-2". The culvert measures approximately 2'-4" wide. The culvert remained unblocked. No features of the rail bed or railroad tracks are visible.

Historic Context

The small and large culverts are thought to be associated with the original Main Line of the B & O Railroad in Frederick County. The route of the B & O Railroad through Frederick County was altered over the years. The original Main Line closely followed the banks of the Bush Creek between Ijamsville and Reels Mill. Changes to the railroad's route between Ijamsville and Frederick Junction at the Monocacy River illustrate the efforts by the B & O Railroad Company to improve high-speed transportation. Mid-nineteenth century and early twentieth century changes in the route were made to eliminate curves and steep inclines in response to changing train technology. Many of the sharp turns in the original line could not be negotiated by later locomotives and railcars with longer wheel bases. A straighter and flatter route allowed for more efficient rail service, as trains became faster and heavier. Each shift in the route changed the number of times the railroad crossed the Bush Creek. Research suggests the culverts might be associated with the B & O Railroad; therefore, a discussion on the railroad's history is necessary.

A large ceremony held on 4 July 1828 commemorated the start of the B & O Railroad (Dilts 1993:7). In developing the original route, company officials decided that the railroad should follow the Potomac River Valley to take advantage of the nearly level terrain until the Alleghany Mountains near Cumberland, Maryland. However, the terrain between the Potomac River Valley and Baltimore was problematic. Several routes, varying in distance from 40 miles to 65 miles and mainly parallel to waterways, were proposed in this area (Harwood 1994: 15). B & O company officials ultimately decided on a route that followed the Patapsco River west of Baltimore to present day Mount Airy, Maryland. After reaching Mount Airy, the railroad then would follow Bush Creek west to the Monocacy River. After crossing the Monocacy River, the railroad alignment angled southwest to join the Potomac River at Point of Rocks (Harwood 1994: 15).

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The chosen route was relatively flat; however, the waterways located parallel to the alignment meandered through difficult topography. Sharp turns and few straight-aways made the railroad both difficult to construct and difficult for train engineers to navigate. Areas along the Patapsco River required curving tracks to avoid large rock outcroppings; blasting and removing the outcroppings was found too expensive. The first section of railroad constructed was the Patapsco River section. Bridges were built to cross the Patapsco River to avoid shear rock walls (Harwood 1994: 16). Continual improvements were made to the line to accommodate advances in railroad locomotives and the evolution to larger and heavier trains.

The two culverts associated with F-5-159 are located along the section of rail line within the Bush Creek Valley, which begins on the west side of Parrs Spring Ridge, near Mount Airy, and extends west to the Monocacy River. The route through the valley provided a flat course with fewer rocky outcroppings and easier terrain than that encountered during construction on the Patapsco River section. Final survey of the route was conducted by Caspar W. Wever, Superintendent of Graduation and Masonry for the B&O Railroad Company (B & O Railroad Company 1831:Vol. 5: 15). The contracts for construction were issued in late fall and winter of 1830 (B & O Railroad Company 1831:Vol. 5: 12).

Construction of the railroad began with the graduation work to clear and level the way to construct the rail bed. The four contractors retained to perform the graduation work and masonry were John Davidson, Christopher Midler, Peter Tracy, and John Littlejohn (B & O Railroad Company 1831:Vol. 5: Exhibit O). Graduation work for this section of the railroad began in December 1830 (B & O Railroad Company 1831:Vol. 5: 105). Three months were allotted to complete the work (B & O Railroad Company 1831:Vol. 5: 113). The culverts associated with F-5-159 likely were constructed during this graduation work in preparation of the construction of the rail bed (B & O Railroad Company 1831:Vol. 5: 105).

Primary difficulties with the Bush Creek Valley section were crossing the creeks and streams found throughout the valley. Four stone bridges, including a 25' arch over Bush Creek, were constructed (Harwood 1994: 28). A "very large number of gothic and square culverts" also were constructed in this section to allow the railroad to cross the small feeder streams draining into Bush Creek" (B & O Railroad Company 1832:Vol. 6, 70). Stone was the construction material of choice for both bridges and culverts because of the permanence and strength of the material (Harwood 1994: 28). According to the principals of construction included in the 1831 *Annual Report of the B&O Railroad Company*, "In all such cases, where the said road runs with, crosses, or encroaches upon any river, creek, or other water course, it shall be secured against damage from said stream, by forming the embankment of stone exclusively, or by lining it with stone at least three feet thick" (B & O Railroad Company 1831:Vol. 5: 118).

Culvert construction required that "All common culverts will be of dry masonry and must conform to lengths and widths prescribed by the superintendent. Each stone may break a joint of the preceding range or tier" (B & O Railroad Company 1831:Vol. 5: 121-122). Masons contracted to construct the stone culverts were permitted to take any stone deemed necessary for the culvert from any portion of the railroad right-of-way as long as removing the rock did not result in any damage to previously constructed rail bed (B & O Railroad Company 1831:Vol. 5: 118). Even though the route along Bush Creek required the construction of numerous culverts, surveyors and engineers were more concerned with tackling sharp curves and changes in grade along the route (Knight 1832 Vol.1-Part I:131)

The route for the B & O Railroad as it passes through Frederick County initially was surveyed in 1828 (Barney 1831). Superintendent of Graduation and Masonry for the B&O Railroad Company, Caspar W. Wever, surveyed and marked the route in fall 1830 (B & O Railroad Company 1831:Vol. 5: 15). An early map suggests that the surveyed route followed the north bank of the Bush Creek until crossing the waterway just once, east of Reels Mill. The portion of the line between Ijamsville and the Monocacy River was described as follows:

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the part of the line occupies the most narrow and crooked part of the ravine of Bush creek and extends to the junction of that stream with the Monocacy. It required the exercise of no ordinary skill and judgment to lay the line in such manner as to give space for the passage of the stream on the one hand, and so as not to encounter, to an improper extent, the precipitous and rocky projections of the hills, on the other; and at the same time to keep the curvatures sufficiently gentle and regular (B & O Railroad Company 1831:Vol. 5: 15-16).

A review of period maps suggests that the route was altered between its initial survey in 1828 and construction in 1831. In a map that appeared in the B & O Railroad Company's 1831 annual report, the railroad followed the north bank of the Bush Creek between Ijamsville and the Monocacy River (Dilts 1993: n.p.). While the railroad did not appear to cross the Bush Creek, the 1831 map suggests the railroad crossed numerous tributaries of the Bush Creek.

The superintendent of construction for this difficult section of track was Caleb Stabler; Otho H.W. Stull was in charge of procurement and distribution of wood and construction materials (B & O Railroad Company 1831:Vol. 5: 30-31). The first train ran from Baltimore to Frederick on December 1, 1831. Four months later, on April 1, 1832, the train continued to Point of Rocks (B & O Railroad Company 1832:Vol. 6: 3-4).

Period maps suggest that modifications again were made to the alignment during the mid-nineteenth century. As depicted on the 1858 *Bond Map of Frederick County, Maryland*, the railroad crossed Bush Creek in two locations. Two creek crossings occurred in the vicinity of the property owned by N. Hartman and Water Station Number 16 (Bond 1858). The Hartman property and the Water Station are in the general vicinity of the two culverts. The improvements appear to have straighten a section of the railroad route as the railroad negotiated a bend in Bush Creek. The railroad continued to follow the north bank of Bush Creek. The 1873 *Lake Atlas of Frederick County, Maryland*, depicts the railroad in the general location as illustrated on the 1858 Bond map (Lake 1873).

At the turn of the twentieth century, the main line of the B&O railroad was modernized to keep pace with railroad technology. Between 1900 and 1908, twenty-five miles of new track, eight new tunnels, and several new steel bridges were constructed to improve the main line (Harwood 1994: 62). During this period, approximately 2.3 miles of new track were laid between Ijamsville and Reels Mill, which eliminated twists and turns in the route and increased transportation efficiency (Harwood 1994: 201). The railroad right-of-way in the vicinity of the culverts shifted northwards resulting in the abandonment of portions of the original Main Line, including the section of the Main Line containing the culverts. The 1909 U.S. Geological Survey Quadrangle map suggests the railroad was straightened, which resulted in the railroad crossing the Bush Creek in four locations between Ijamsville and Reels Mill (U.S. Geological Survey 1909). The quadrangle map depicts new track constructed north of the western culvert and south of the eastern culvert on the opposite bank of Bush Creek. A review of the most recent U.S. Geological Survey Quadrangle map suggests the railroad remained relatively unmodified between 1909 and 1986 (U.S. Geological Survey 1953, photorevised 1986).

The culverts are located west of Ijamsville and east of Reels Mill. Named after the Ijams family, Ijamsville is a nineteenth-century rural, industrial village. The slate quarries, located west of Mussetter Road, and the railroad provided the impetus for the development of the village. Slate quarries first operated near Ijamsville around ca. 1800. Plummer Ijams, Jr., arranged for the Baltimore and Ohio Railroad to pass north of his grist mill. The arrival of the railroad and the slate quarries spurred the village's growth during the nineteenth and twentieth centuries; development peaked during the early twentieth century. Village growth declined when the slate quarrying was eliminated from the overall operations in ca. 1892. Rail traffic decreased in the early twentieth century, as automobile and truck use increased. By 1913, the quarries had switched to shale production. The quarries closed in 1937 and the railroad station closed in 1938 (Peeler 2004).

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Like Ijamsville, the growth and development of Reels Mill was directly influenced by the construction of the B & O Railroad. Reels Mill began as a small community located about a mile east of the Monocacy River; the B & O transformed the village into a bustling rail terminal (Harwood 1994: 201). By March 1925, the locomotive terminal at Reels Mill became redundant, and all remaining railroad resources were removed after a locomotive terminal was constructed at Point of Rocks (Harwood 1994: 256). While the village prospered as a result of the railroad, the B & O decision to close the station and cease operations resulted in a severe economic decline. Today, few resources remain of Reels Mill.

The B & O Railroad continued operation through World War II, but, by 1961, the company experienced major financial difficulties, suffering a \$31 million deficit (Harwood 1994: 299). To maintain operations, the B & O merged with the Chesapeake & Ohio (C & O) Railway in 1963. While technically partners, the B & O and the C & O operated as separate entities. In 1987, both companies were acquired by the CSX Transportation Company, and CSX gained ownership over railroad right-of-ways of the B & O (Harwood 1994: 299). CSX continues to operate railroads throughout the country, but the portions of the original B & O line made obsolete by technology, including the section along the Bush Creek, remain abandoned.

Property Ownership

In 1826, the Maryland General Assembly passed legislation to incorporate the Baltimore & Ohio Railroad Company. The legislation also delegated the right of the government to acquire private property for public purposes to the B & O Railroad Company. Provisions of the act invested the company president and directors with the "rights and powers necessary to the construction and repair of a rail road from the city of Baltimore, to some suitable point on the Ohio river, to be by them determined, not exceeding sixty-six feet wide" (Annotated Code of Maryland, Act of 1826, Chapter 123). The act further directed B & O company officials to negotiate with property owners for the purchase of land necessary for the construction of the railroad. Company officials were authorized to make application before a justice of the peace to direct the county sheriff to summon a jury to determine the value of the property in cases where an agreement between the property owner and the railroad company could not be reached (Annotated Code of Maryland, Act of 1826, Chapter 123).

The culverts were constructed on land originally owned by Benjamin Johnson. Sometime in 1831, the B & O Railroad Company acquired land from Benjamin Johnson to construct the railroad through a portion of his property. The transaction does not appear to have been recorded (Lane 2008:56).

Thematic Context: Railroad Construction during the Nineteenth and Twentieth Centuries

Surveyors began surveying and marking the route west from Baltimore as early as 1828. B & O engineer Stephen H. Long was responsible for locating the route between Parrs Spring Ridge, east of Ijamsville, to Point of Rocks and Harpers Ferry (Dilts 1993:64). Long developed the theories for the construction of railroads. His theories advocated the construction of a straight and level line. When topographical conditions prohibited the construction of a straight rail line, horizontal deviations for the avoidance of hills was accomplished through curves in the line, while vertical corrections allowed "changes in level by uniform inclinations" (Dilts 1993:65). After the initial survey was completed, the engineers calculated the "amounts of excavation, embankment, and bridging...needed for the various alignments..., factored in as best they could the expense of motive power..., and picked the route representing the least overall expenditure" (Dilts 1993:65). Construction crews followed the survey teams as the routes were finalized (Dilts 1993:64). Engineers who worked on the B & O Railroad formed the railroad engineering profession (Dilts 1993:64). The techniques developed during the construction of the B & O Railroad

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were codified in later manuals on railroad surveying and engineering (Dilts 1993:65). These principles for railroad construction still are used today (Dilts 1993:65).

Several methods were used in the laying of the railroad track. These methods were based on English precedents (Dilts 1993:128). Stone blocks with wood rails (stringers) topped with thin metal strips initially were used for the construction of the track (Dilts 1993:128; Harwood 1994:25). Indeed, several miles of the line were constructed with "granite sills, or a continuous curb, in pieces from 5 to 9 feet long, 15 inches broad, and 8 inches thick, upon the inner edge of which the iron plat is spiked down to tree-nails of oak" (Ritchie 1846:29). Two other early methods for the laying of tracks also were developed. These methods employed wooden string pieces and stone blocks, with the strap rail directly fastened to the stone, or wooden string pieces and sleepers. A "built-up earth horse path ran between the rails" in these early tracks (Hardwood 1994:24). Wood and stone were cheaper than the more expensive iron (Dilts 1993:128). B & O engineer Stephen Long recommended the use of stone rails. Many early engineers believed that stone rails plated with iron would be more permanent than wood (Dilts 1993:128). Wooden rails with iron plating laid atop sleepers (ties) were recommended for temporary construction (Dilts 1993:128).

The first rails consisting of wood and iron rails at a four-foot, six-inch gage were laid in Baltimore in October 1829 (Dilts 1993:128). Fourteen miles of track leading to Ellicott City were completed shortly thereafter. The railroad was completed to Frederick in 1831 and Point of Rocks in 1832.

Culverts are one of several types of structures used to carry railroads over small streams. While culverts of various sizes were constructed to carry railroads over bodies of water, a "true culvert is usually applied to arched openings not exceeding 20 feet, and covered by an embankment" (Jervis 1866:92). Stone box culverts were constructed over small intermittent streams that often were dry during much of the year. Culverts were constructed over "water-channels passing through a railroad embankment which (were) not of sufficient magnitude to require a special structural design", such as a masonry arch or truss bridge (Webb 1900:202). Culverts were designed to prevent water from spilling over the embankment.

Several factors were taken into consideration when designing a culvert. These factors included the ability to efficiently and effectively discharge water, as well as "the form, length, slope, and materials of construction of the culvert and the nature of the approach and outfall" (Webb 1900:202). The maximum rate and duration of rainfall and the character of the drainage area were also important considerations. These factors impacted the type (i.e., box stone culvert, double box culvert, arch culvert, or bridge or trestle) structure constructed.

Mid-nineteenth century engineering manuals recommended using stone blocks rather than arches in cases where openings smaller than one and a half to two feet was required (Jervis 1866:93). In his treatise on the construction of railways, civil engineer John B. Jervis recommended against the use of squared and dressed courses, even though such work was considered more stable (Jervis 1866:93). He deemed such work as unnecessary if a bank of earth was to be placed on the arch or between the feature and the railway (Jervis 1866:93). Jervis emphasized the importance of good masonry work, and the quality of the stone and bond (Jervis 1866:97). He cautioned that care be taken when filling the culvert bank. The fill needed to be equally loaded on each side of the culvert to prevent the culvert from being pushed out of form (Jervis 1866:96). He concluded his treatise on culverts by praising well-built stone culverts for their safety and relatively low maintenance (Jervis 1866:96).

While box culverts were constructed of wood and stone, stone culverts were preferred in locations where the material was readily and cheaply available (Webb 1900:212; Raymond 1913:59). Stone culverts generally did not cover spans greater than four feet because of the difficulty in finding stones of sufficient size and strength for the covers (Raymond 1913:60). In cases where larger culverts were necessary, double box culverts were constructed.

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By the early twentieth century, few stone box culverts were being constructed (Raymond 1913:60). Pipe culverts with concrete end walls or concrete barrel culverts gained popularity (Raymond 1913:60).

Evaluation

The B & O Railroad culverts along Bush Creek were evaluated applying the National Register Criteria for Evaluation (36 CFR 60.4 [a-d]). The two culverts appear to be the only resources remaining along this section of Bush Creek that appear to be associated with the original Main Line of the B & O Railroad. Character-defining features of the railroad include the rail bed and tracks, bridges, tunnels, stations and terminals, and roundhouses. Even though several Main Line B & O Railroad features are listed on the National Register, the railroad alignment itself is not included on the National Register. Character-defining features of the B & O in Maryland that have been listed on the National Register include the Bloomington Viaduct, the Baltimore & Ohio Railroad Bridge Antietam Creek, the Patterson Viaduct, the Carrollton Viaduct, the B & O Railroad Potomac River Crossing, the Mount Clare Station, and the Ellicott City Station. In addition, the Bollman Truss Railroad Bridge, the Carrollton Viaduct, the Thomas Viaduct, and the Ellicott City Station have been identified as National Historic Landmarks.

Culverts associated with the B & O Railroad previously were documented. A culvert located west of the Point of Rocks Railroad station was documented in 2000 (Culhane 2000). The Maryland Historical Trust determined in 2000 that the structure was eligible for the National Register of Historic Places because it is a contributing element to the B & O Railroad. The culvert near the Point of Rocks Railroad station is located under the former B & O Railroad alignment, which is now owned by CSX. Unlike the Bush Creek culverts, the culvert in Point of Rocks is associated with an active rail line and still retains its railroad association.

The two culverts were evaluated for their association with events that have made a significant contribution to the broad patterns of our history (Criterion A). Archival research suggests the culverts were constructed on land controlled by the B & O Railroad Company; however, deeds documenting B & O ownership have not been identified. Alterations to the railroad line occurred as early as the 1850s as the company made efforts to improve the railroad's efficiency. These modifications resulted in a shift in the location of the rail line. The line underwent significant modifications during the first decade of the twentieth century when much of the line along the Bush Creek was moved. The culverts no longer were used by the B & O when the railroad was relocated, and the culverts subsequently lost their association with the active railroad. No other evidence of the railroad survived in the vicinity and the possible association with the B & O Railroad was established solely from archival research.

The culverts were evaluated for their ability to embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values (Criterion C). The culverts do not represent an engineering structure unique to the construction of railroads. Railroad engineering manuals from the mid-nineteenth century differ little from those written during the early twentieth century in their description of the purpose for and the construction of culverts. A review of B & O Railroad Company early annual reports provided few specifics on the construction and location of the culverts.

Noted engineer Stephen Long is associated with the construction of the railroad through Frederick County; however, archival research has not indicated that he was associated with the design and construction of the culverts. Long had a long and distinguished career as an engineer. He engineered a number of bridges and formulated tables for determining curves and grades for railroads (Weingardt 2005:11). His theories were codified in his 1829 *Rail Road Manual*. He also invented and patented his design of the "Long truss" in addition to patenting designs for bracing and counterbracing wooden bridges (Weingardt 2005:11). While Long's involvement in the survey and construction of aspects of the B & O Railroad is well documented, there is no evidence to suggest he was involved

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in the construction and design of the culverts. Archival research has yielded little information on the lives of the masons, John Davidson, Christopher Midler, Peter Tracy, and John Littlejohn, who worked on this section of the railroad.

The culverts also are not associated with the life works of persons significant in our past (Criterion B) as defined in National Register Bulletin 15 (National Park Service 1991:14-16). For the culverts to be associated with the engineers and masons who designed and constructed them, the structures would have to embody the life's work of those professionals. The culverts are not eligible under Criterion B.

Both culverts previously were evaluated for their ability to yield information important in prehistory and history (Criterion D) (Lane 2008). The Maryland Historical Trust concurred with the determination that the sites possess no archeological research potential (Cole 2008).

In addition to meeting those qualities of significance, the culverts also must possess integrity. Little evidence remains to suggest the culverts are associated with the B & O Railroad. Character-defining features such as the rail bed and tracks are no longer extant. The culverts no longer possess integrity of location, setting, materials, feeling, or association to convey their association with the construction of the Main Line of the B & O Railroad.

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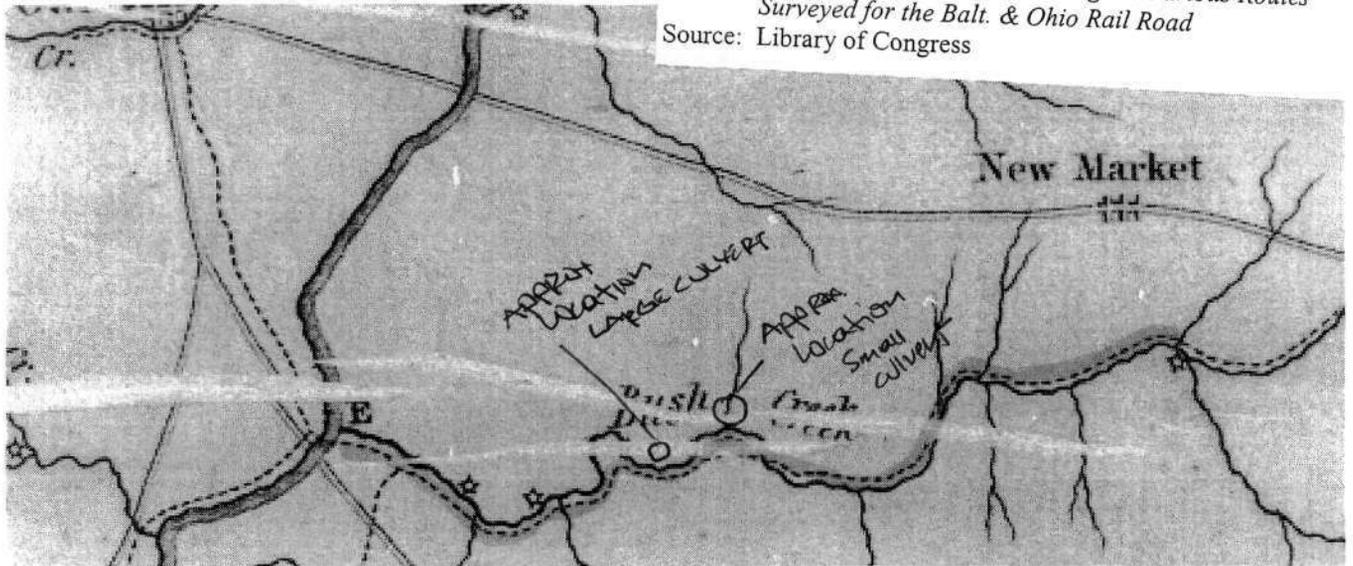
B & O Culverts

Ijamsville, Frederick County

Ca. 1831 *Map of the Country Embracing the Various Routes*

Surveyed for the Balt. & Ohio Rail Road

Source: Library of Congress



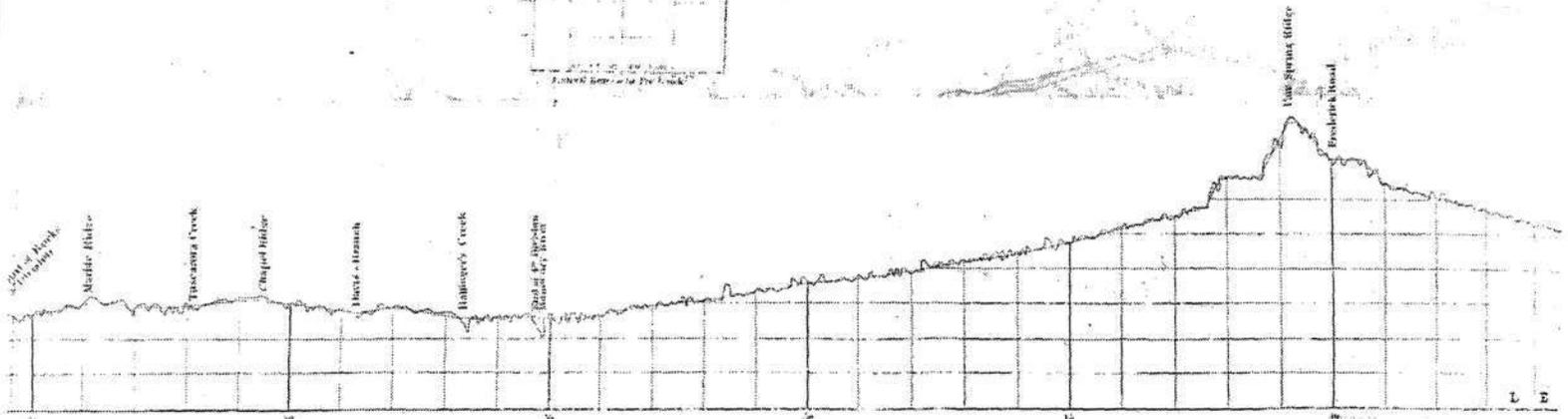
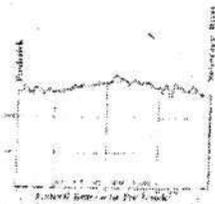
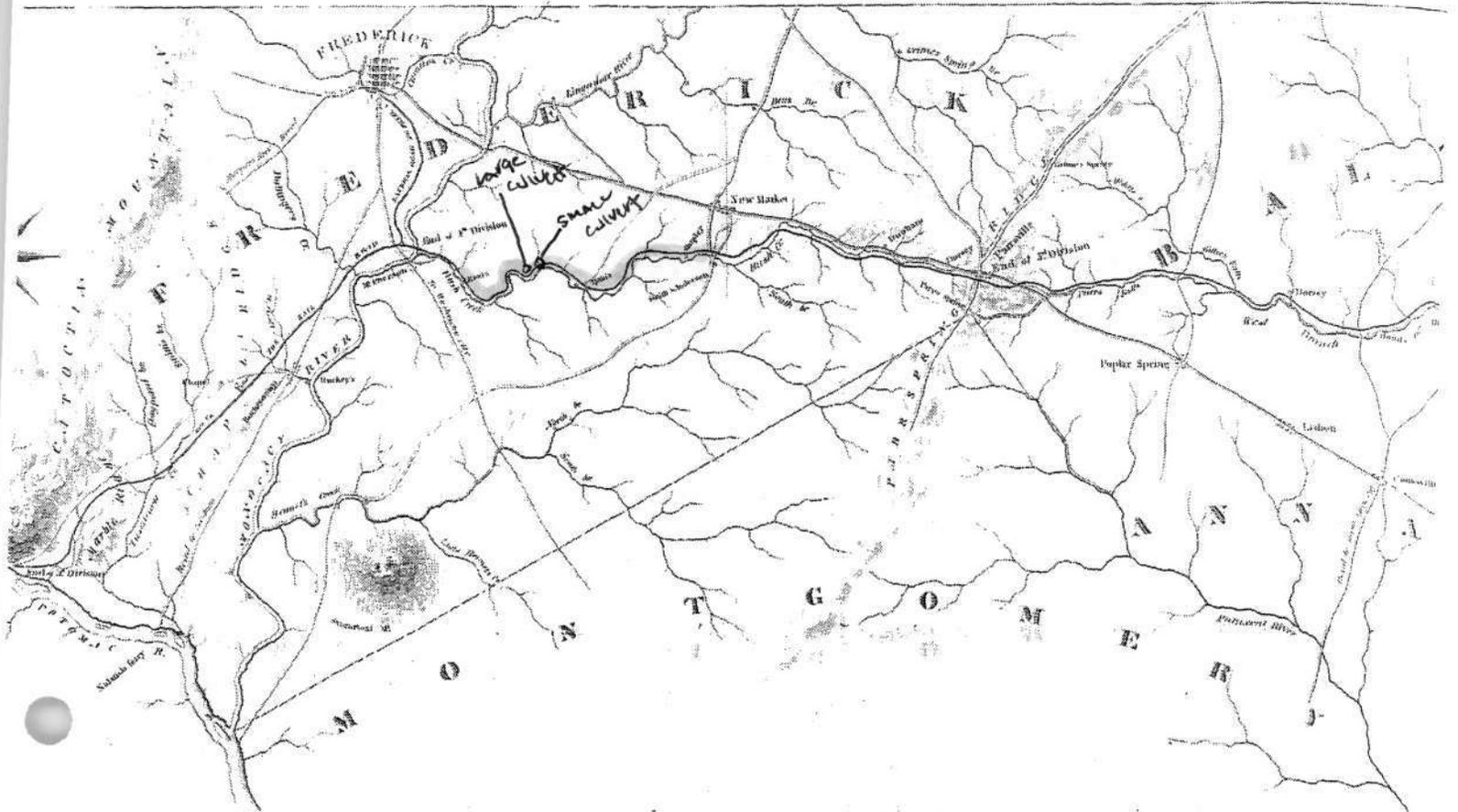
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B & O Culverts

Ijamsville, Frederick County

1831 Railroad Route between Baltimore and the Potomac River

Source: *The Great Road*



F-5-159
B & O Culverts
Ijamsville, Frederick County
1858 Bond Map of Frederick County, Maryland

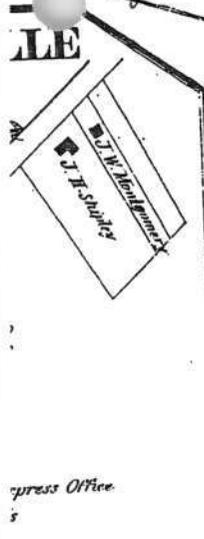


Large
Culvert

Small
Culvert

MARKET DIST No. 9

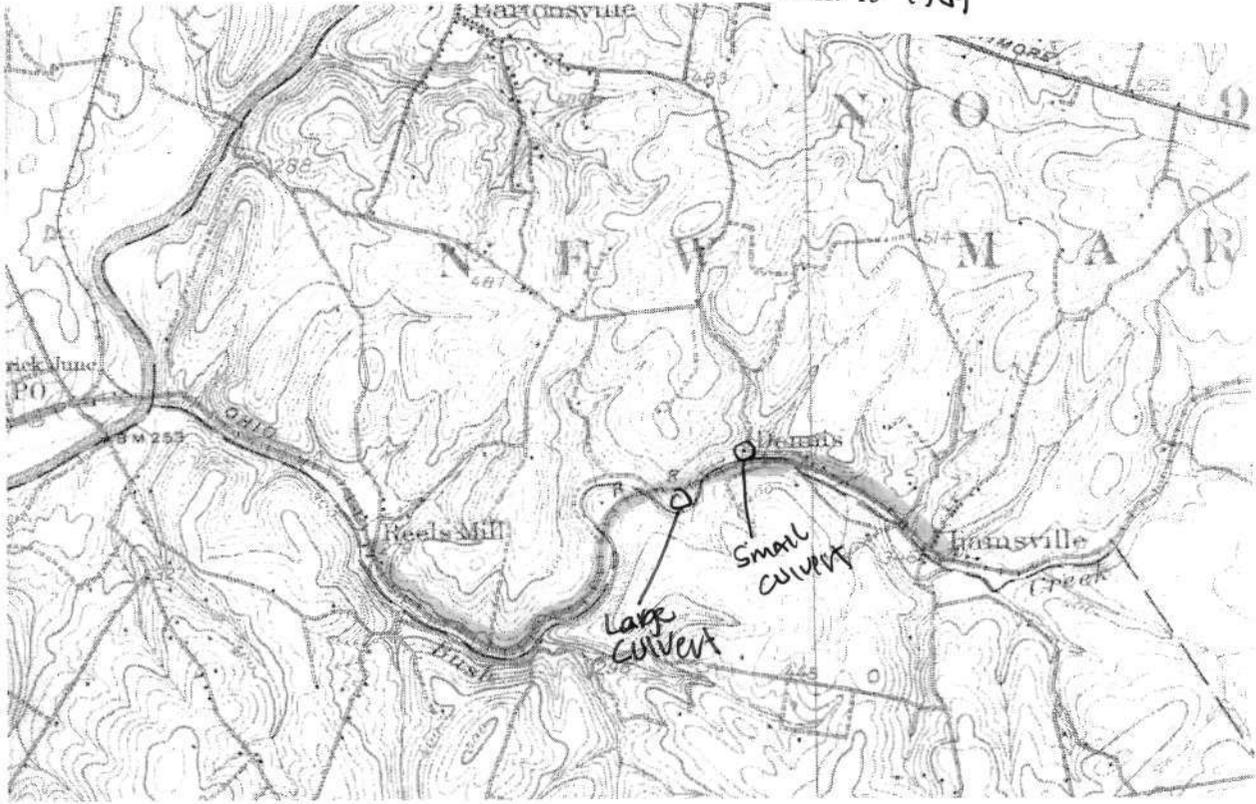
Scale 1/2 inches to the mile



F-5-159
B & O Culverts
Ijamsville, Frederick County
1873 Lake Atlas of Frederick County, Maryland

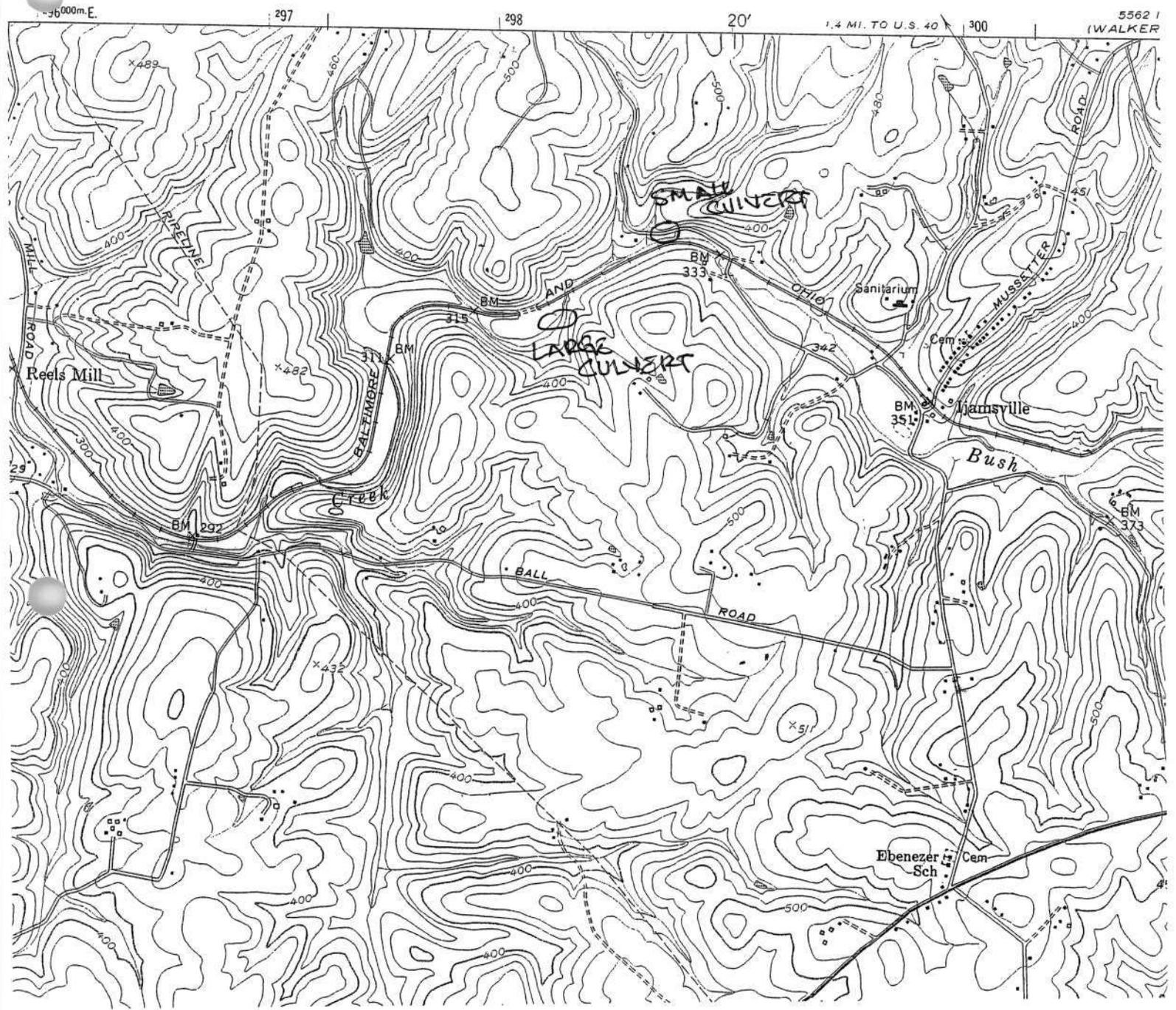


F-5-159
B & O Culverts
Ijamsville, Frederick County
USGS Quadrangle Map: Ijamsville-Frederick Quad
Scale: 15' 1909



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

F-5-159
B & O Culverts
Ijamsville, Frederick County
USGS Quadrangle Map: Urbana Quad
Scale: 1:24,000



MARYLAND HISTORICAL TRUST
NR-ELIBILITY REVIEW FORM

Continuation Sheet No. 10

F-5-159

Photo Log

MIHP # F-5-159

B & O Culverts

Frederick County, Maryland

Photos taken by: Benjamin Riggle

Photos taken on: 2 February 2009

Photo paper and ink: HP Vivera ink 97 Tri-Color cartridge, 101 Blue Photo cartridge, and 102 Gray Photo cartridge on HP Premium Photo Paper (high gloss)

Verbatim Ultralife Gold Archival Grade CD-R, PhthaloCyanine Dye

- F-5-159_2009-02-02_01 - Small culvert and setting, looking northeast
- F-5-159_2009-02-02_02 - Depression north of small culvert, looking south
- F-5-159_2009-02-02_03 - Large culvert, looking south
- F-5-159_2009-02-02_04 - Large culvert, looking north
- F-5-159_2009-02-02_05 - View through large culvert, looking south
- F-5-159_2009-02-02_06 - View atop large culvert, looking east

Kirsten Peeler, Project Manager
and Benjamin Riggle, Historian
R. Christopher Goodwin &
Associates, Inc.
241 East Fourth Street

Prepared by: Frederick, Maryland 21701

Date Prepared: 18 February 2009





MHT # F-5-159

B/O CONCRETE

FREDERICK COUNTY, MD

B. RIGGLE

2 FEB 2009

SMALL CONCRETE & SETTING, LOOKING MC

1 OF 6





MIWA # F-9-159

BTA CULVERTS

FREDERICK COUNTY, MD

B. RIGGLE

2 FEB 2009

DEPRESSION NORTH OF SMALL CULVERT
LOOKING SOUTH

2 OF 6



MIHP # F-9-159

BTO CULVERTS

FREDERICK COUNTY, MD

D RASLE

2 FEB 2009

LARGE CULVERTS LOOKING SOUTH

3 of 6



MIHA # F-5-159

BSD CULVERTS

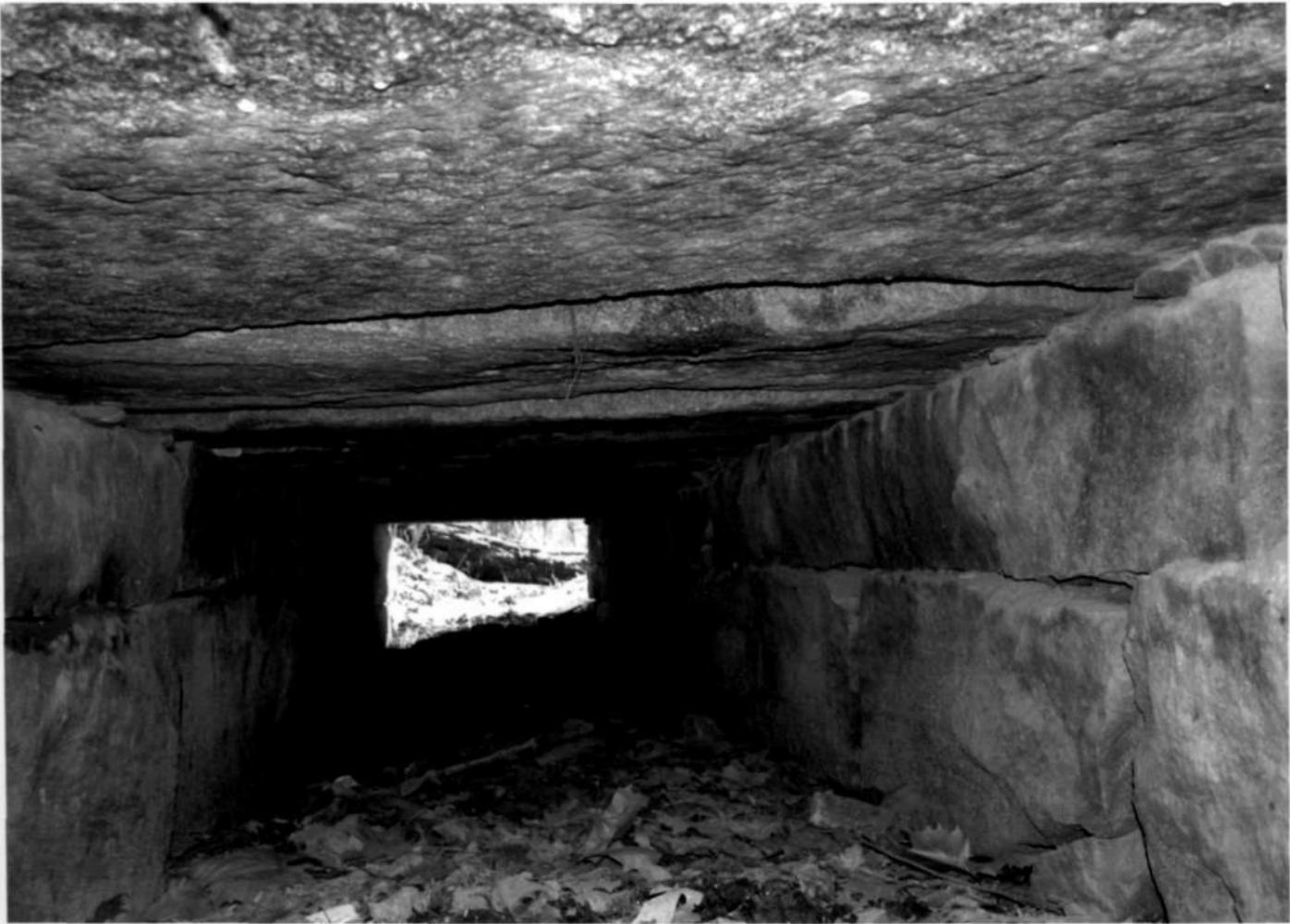
FREDERICK COUNTY, MD

B RIGGLE

2 FEB 2009

LARGE CULVERT LOOKING NORTH

4 OF 6



MIHA # F-5/159

B & O CULVERTS

FREDERICK COUNTY, MD

B. BIGGLE

2 FEB 2009

VIEW THROUGH LARGE CULVERT
LOOKING SOUTH

5176



MIHA # F-5-159

By O CUIVERTS

FREDERICK COUNTY, MD

B RIGGLE

2 FEB 2009

VIEW ATOP LARGE CUIVERT,
LOOKING EAST

6 of 6