

United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

Allegheny Portage Railroad National Historic Landmark

B. Associated Historic Contexts

The Allegheny Portage Railroad Era, 1831-1855

C. Geographical Data

The Allegheny Portage Railroad National Historic Landmark is situated in Cambria and Blair Counties in southcentral Pennsylvania between the railroad's endpoints of Johnstown and Hollidaysburg. In Cambria County, resources are found in Conemaugh, Croyle, Portage, and Cresson Townships, plus Lilly Borough. In Blair County, resources are in Juniata and Allegheny Townships.

See continuation sheet

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

Dr. Brent D. Glass
Signature of certifying official
PA Historical & Museum Commission

3/24/92
Date

State or Federal agency and bureau

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Signature of the Keeper of the National Register

Date

E. Statement of Historic Contexts

Discuss each historic context listed in Section B.

F. Associated Property Types

I. Name of Property Type Linear Segments of the Allegheny Portage NHS

II. Description

III. Significance

IV. Registration Requirements

See continuation sheet

See continuation sheet for additional property types

F. Associated Property Types

I. Name of Property Type Culverts of the Allegheny Portage Railroad NHS

II. Description

III. Significance

IV. Registration Requirements

See continuation sheet

See continuation sheet for additional property types

G. Summary of Identification and Evaluation Methods

Discuss the methods used in developing the multiple property listing.

See continuation sheet

H. Major Bibliographical References

See continuation sheet

Primary location of additional documentation:

- State historic preservation office
- Other State agency
- Federal agency

- Local government
- University
- Other

Specify repository: _____

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The Allegheny Portage Railroad, a section of the Pennsylvania Main Line Canal system, played a vital role in the nation's push west in the early nineteenth century. Although the railroad had a short-lived existence from 1834 to 1855, it was an important link in the Main Line system that connected Philadelphia and Pittsburgh and thereby provided access from the Atlantic Ocean to the Ohio and Mississippi Rivers in the expanding west. It played a major role in transportation, engineering, and commercial developments in the young nation. This was the first railroad to surmount the formidable 2,300 foot high Allegheny Mountain Front between Hollidaysburg and Johnstown, significantly reducing travel time from Philadelphia to Pittsburgh and points west. Covering 36.6 miles, the Allegheny Portage employed innovative engineering feats to surmount the difficult terrain of the Allegheny Front. An unprecedented series of ten inclines overcame grades of up to 5 6/8 degrees.¹ The Allegheny Portage also pioneered America's first railroad tunnel, the use of steel cables, and container transport. These engineering feats made a state-of-the-art transportation route possible through Pennsylvania, thus bringing much trade and revenue to the Commonwealth at a time when the eastern seaboard states were vying for trade routes west.

This National Register Multiple Property Form and Submission includes significant portions of the original Allegheny Portage Railroad right-of-way under the property type linear segments. Significant remains of inclines, archeological evidence of related structures, actual in situ railroad members such as sleepers and stringers, culverts, as well as original land cuts, fills, grades, and scenic vistas are preserved in the linear segments. Allegheny Portage era culverts which maintain integrity but fall outside of those segments are included as a separate property type. The culverts illustrate the Allegheny Portage's engineering function and design. Both property types represent a vital part of America's transportation history and warrant preservation.

In the early nineteenth century, due to the demands of the growing nation, the federal government began to concentrate on transportation issues. The Northwest Territory, today's states of Ohio, Illinois, Indiana, Michigan, and Wisconsin, became a crucial

¹ George Swetnam, Pennsylvania Transportation, Pennsylvania Historical Studies No. 7 (Gettysburg: Pennsylvania Historical Association, 1968), p. 48.

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market for the eastern seaboard and an attractive settlement area for the nation's growing populace. Rich in agricultural products but wanting in manufactured goods, this region became a principal object of the easterners' push west. Rudimentary wagon and stage roads were the primary methods of transit. To improve travel and create a more encompassing transportation network to serve the needs of the expanding nation, the federal government initiated a turnpike route, the National Road, as its first public works project. Completed in 1820, the road ran from Cumberland, Maryland through southwestern Pennsylvania to Wheeling, West Virginia, and was later extended across Ohio, Indiana, and Illinois. The National Road opened the west to many settlers, merchants and adventurers.²

During this same period, smaller localized areas also embraced turnpike systems to provide transportation over shorter distances. Such routes were usually created as private enterprises, and unlike their federal counterpart, they were reliant on toll collections for upkeep. One example, the Cambria-Indiana-Huntingdon Turnpike, surmounted the Allegheny Front in 1820. Its location played a part in the route chosen for the Allegheny Portage Railroad, as it helped to supply men and materials to the construction area.

Turnpikes improved mobility and were a step towards creating a regional transportation system, but moving freight of great volume, especially over rugged terrain like the Alleghenies, remained problematic. Turnpikes decayed easily because of weathering, age, poor construction, and heavy loads, leading to high upkeep costs. Finding a more economical and efficient transportation system was imperative. Even the much-acclaimed National Road was not substantial enough to carry the growing east-west trade.

Water-based transportation systems were considered an alternative to the turnpike system. This period saw the emergence of canal systems throughout the young nation, but most were small scale operations. In Pennsylvania, between 1791 and 1819, seven canal systems operated, all financed by private capital to serve a

² William B. Rhoads, "Continuity and Change Along the National Road in Pennsylvania," Pittsburgh History (Fall 1980) p. 131.

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localized area.³ Most handled very specific tasks, such as hauling coal or lumber from point to point. The largest canal of this period was the Schuylkill Navigation system that ran 108 miles between Port Carbon and Philadelphia. Only 62 miles were by canal, however; the other 46 miles were by slack water navigation pools in the river.⁴

Not until the completion of the 363 mile long Erie Canal in 1825 were canals fully embraced as a link to the west. The Erie Canal demonstrated the efficiency of large-scale canal building as the optimal method of transporting great quantities of freight at a greatly reduced rate and at increased speeds. While early turnpike traffic averaged two miles per hour, mule-pulled barges proceeded at four miles per hour. Connected Albany, on the Hudson, to Buffalo, on Lake Erie, the canal opened the coveted Northwest Territory to large-scale trade via the Great Lakes, making New York City the nation's primary port, once the indisputable station of Philadelphia.

The threat to Pennsylvania trade spurred the state government and business community into seeking a similar transportation route. On March 27, 1824, the Commonwealth established a Board of Canal Commissioners charged with the task of building a Commonwealth-sponsored canal system between Pennsylvania's two largest cities, Philadelphia and Pittsburgh. The system, named the Pennsylvania Main Line Canal would ultimately tie the Atlantic seaboard to the Northwest Territory via the Ohio and Mississippi Rivers.

Pennsylvania's varied terrain, however, presented problems for the proposed canal route. The Allegheny Front, rising to elevations of over 2,300 feet in central Pennsylvania, obstructed the canal's proposed route.⁵ The Commissioners explored a number of alternatives for overcoming this barrier, including tunnels and

³ Philip S. Klein and Ari Hoogenboom, A History of Pennsylvania (University Park, Pennsylvania: The Pennsylvania State University Press, 1980), pp. 205-206.

⁴ Swetnam, p. 46; W.H. Shank, The Amazing Pennsylvania Canals (York, Pennsylvania: American Canal and Transportation Center, 1973), p. 8.

⁵ William Bender Wilson, "The Evolution, Decadence and Abandonment of the Allegheny Portage Railroad," The Allegheny Old Portage Railroad (June 1952), p. 37.

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turnpikes, but the issue lay unresolved as canal construction began.

Engineering surveys soon showed that neither turnpikes nor tunnels were viable solutions. As noted in the original construction specifications for the Portage Railroad, the engineers faced solid rock masses and steep grades. The steepness prevented construction of a new turnpike to carry the tremendous amount of traffic that the canal would bring. A canal tunnel also proved unfeasible due to the high quantity of impenetrable rock. Supplying water to such an elevated site would also be troublesome.

After much deliberation, the Commissioners accepted a proposal by engineer Moncure Robinson. Expanding on examples of smaller inclined railways such as the Delaware and Hudson coal route, completed in 1829 between Carbondale and Honesdale, Pennsylvania, he proposed creating an unprecedented system of ten inclines to overcome the summit of the Allegheny Front. This inclined railway would follow the existing turnpike from Hollidaysburg to Blair's Gap, cross the Alleghenies' summit just north of Samuel Lemon's wooden tavern. The road would aid substantially in the transportation of construction materials and men. From that point, the path would run southwestwardly, passing the few landmarks that predated its construction -- Lilly's mill, Litzinger's saw mill, Pringle's barn, and Croyle's mill, before terminating in the community of Johnstown.⁶

Construction of the 36.6 mile Allegheny Portage Railroad began in July 1831 with grubbing and clearing of the wilderness to make way for the tracks. Robinson remained on as a consulting engineer, and Sylvester Welch was named Principal Engineer. Construction next began on the railroad's approximately 70 culverts, 85 drains, four viaducts, one land bridge, and one tunnel. By the end of 1833, the first track and its associated sidings, turnarounds, and lateral railways were laid. The tracks on the levels were light T-rails placed in cast iron receptacles known as chairs, which were set on stone bases called sleepers. On the inclines, iron strap rails placed on long wooden stringers replaced the stone sleepers,

⁶ Ana Coxe Toogood, Historic Resource Study Allegheny Portage Railroad National Historic Site Pennsylvania (Denver: Denver Service Center, Historic Preservation Team, National Park Service, United States Department of the Interior, May 1973), p. 6.

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which tended to slide when not on level ground.⁷ By 1833, construction of the engine houses, sheds, associated machinery and dwelling houses at the head and foot of each plane was under way. A single track officially opened for business on March 18, 1834. By 1835, the Allegheny Portage Railroad's second track was in place.

Once completed, the Pennsylvania Main Line Canal system consisted of five divisions: the 90 mile Columbia and Philadelphia Railroad; the Eastern Division, a 43 mile canal route between Columbia and Clark's Ferry; the Juniata Division, which ran 127 miles from Duncan's Island to Hollidaysburg; the 36.6 mile Allegheny Portage Railroad; and finally, the 105 mile Western Division that ran along the Conemaugh, Kiskiminetas, and Allegheny rivers to Pittsburgh.⁸

To cross the Allegheny Front on the Allegheny Portage Railroad, a canal boat would arrive in Hollidaysburg or Johnstown and dock at a basin pier. The cargo would then be lifted via crane to a railway car on a branch railroad track connected to the main railroad by a turning platform. This process changed with the introduction of sectional canal boats that could be separated into parts, pulled from the basin by stationary engines, loaded onto rail cars, and conveyed over the mountain in pieces, thereby allowing the same vehicle to make the entire trip from Philadelphia to Pittsburgh or beyond.

On the levels, horses initially provided the motive power, but by 1850, steam locomotives had completely replaced them. Upon approaching the foot of an incline, the rail car entered a hitching shed where car tenders connected a continuous hemp rope or, later, a steel cable, to the car. At the head of the same incline, another car would be connected to ropes in the engine house, and set free down the slope. The force of gravity of the descending car would elevate the ascending car to an extent. A 35 horsepower engine provided the rest of the energy necessary to raise the ascending car. Each engine house contained two such stationary

⁷ Paula A. Zitzler, Allegheny Portage Railroad Eastern Slope Historic Structure Report Archeological Data Section, Draft (Not published, June 1990), p. 19.

⁸ Sara Amy Leach, Two Historic Pennsylvania Canal Towns: Alexandria and Saltsburg (Washington: Historic American Building Survey/Historic American Engineering Record, March 1989), p. 11.

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steam engines. Only one was used at a time, with the other held in reserve. The Allegheny Portage Railroad shortened the journey from Hollidaysburg to Johnstown to six hours instead of the three days required with the turnpike. The trip from Philadelphia to Pittsburgh was cut from 20 days via land routes to five or six days on the Main Line Canal system.

The Allegheny Portage Railroad was a wonder of its time. In 1832, as construction was under way, it was heralded as "the most important work hitherto executed in the United States. It forms the only Rail-road communication between the valley of the Ohio and the Atlantic States."⁹ In 1838, the renowned English civil engineer David Stevenson described this railroad as incomparable to any modern work he had ever seen "in boldness of design and difficulty of execution...excepting perhaps the passes of the Simplon and Mount Cenis in Sardinia." Strictly in terms of engineering, the Allegheny Portage was the most exceptional of all to Stevenson.¹⁰ While most of the individual features of the Allegheny Portage were not revolutionary of themselves, their application in a system of this magnitude was unprecedented. For example, although the Allegheny Portage was not the first railroad system in America, in the year prior to the start of its construction, there were only 72.36 miles of railroad tracks in the mid-Atlantic states.¹¹ The Allegheny Portage was over 36 miles in and of itself.

Incline railways had also appeared prior to the Allegheny Portage, but never before were ten used within one transportation system. The Columbia and Philadelphia Railroad, which serviced the eastern section of the Pennsylvania Main Line Canal, employed two inclines in Philadelphia and Lancaster Counties. But the elevation overcome by the Allegheny Portage Railroad was more than three times greater. Most other inclines in operation in the 1830s, such as the previously mentioned line between Carbondale and Honesdale,

⁹ Nicholas Wood, A Practical Treatise on Rail-roads, and Interior Communication in General (Philadelphia: Carey & Lea, 1832), p. 508.

¹⁰ Wilson, p. 36.

¹¹ Regional Economic History Research Center Canals and Railroads of the Mid-Atlantic States 1880 1860. chart in back.

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were used for industrial purposes over short distances.¹² The National Register currently lists six such incline railway structures, five of which were constructed later than the Allegheny Portage. The sixth, the Quincy Massachusetts Gravity Railroad, began operations in 1826 and is regarded as the nation's first railroad. Although older than the Allegheny Portage, it was less than four miles in length and was used strictly to transport granite from a quarry to canal barges. It employed one incline only. Seen in this context, the Allegheny Portage Railroad adaptation of existing technology becomes all the more impressive.

The Allegheny Portage pioneered three other engineering features: America's first railroad tunnel; the use of steel cables; and container transport. The Staple Bend Tunnel, the nation's first railroad tunnel, was constructed between 1831 and 1832 at the head of Incline 1, approximately four miles east of Johnstown. Workers boring through a mass of pure rock using only hand tools and black powder shortened the length of the Allegheny Portage Railroad by over a mile. The arduous work took two teams of 50 men 24 hours to cut through just 18 inches of the rock. Teams worked from either end and reached a breakthrough point on December 20, 1832. The tunnel was 901 feet long, 90 feet wide and arched with cut stone. The Tuscan pilastered entrance of dressed sandstone speaks of the pride and grandeur such an engineering feat represented. The fact that the structure still stands after years of neglect attests to its high quality material and workmanship.¹³

Steel cables improved the safety of the Allegheny Portage Railroad. The hemp ropes which originally raised and lowered rail cars over the inclines proved susceptible to quick wear and often snapped. The renowned engineer John Roebling remedied the situation by providing wire ropes for the Portage. First employed

¹² William H. Shank, ed. Sylvester Welch's Report on the Allegheny Portage Railroad (York, Pennsylvania: American Canal and Transportation Center, 1975), p. 3.

¹³ Ronald G. Wilson, Staple Bend Tunnel National Register of Historic Places Inventory - Nomination Form (Not published, 1973); Staple Bend Tunnel Briefing Statement (Not published, August 1982).

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on Incline 3 in 1842, by 1849 these cables replaced all hemp ropes.¹⁴ Roebling later went on to mastermind such feats as suspension bridges in Pittsburgh, Cincinnati, and, ultimately, Brooklyn, but he first demonstrated his engineering talents on the Allegheny Portage Railroad.¹⁵

The third innovation introduced on the Allegheny Portage Railroad was container shipping. Sectional canal boats appeared on the Allegheny Portage Railroad during the 1830's, with John Dougherty of Hollidaysburg claimed credit for inventing the boats in a circular published in 1839.¹⁶ These vessels consisted of separate sections that could be dismantled and assembled by removing or inserting a pin which held together the sections. Upon arrival in Hollidaysburg or Johnstown, the sections were carried over the summit, thereby streamlining the transportation of goods. The introduction of the sectional canal boats further increased the Main Line Canal's popularity and brought it some trade that had previously been diverted through the Erie or C&O Canals.¹⁷

Concurrently, railroad cars with detachable bodies were also employed, enabling cargo to be packed in Philadelphia, floated through the canals, transferred on to rail cars, and back to canal boats without having to be opened and repacked for the various legs of the journey. Both the removable bodies and the sectional canal boats simplified the movement of goods. According to literature from the Pennsylvania Railroad, "These practices on the Public Works undoubtedly constituted the first application on a large scale in this country of the container car principle."¹⁸

¹⁴ Allegheny Portage Railroad, Its Place in the Main Line of Public Works of Pennsylvania, Forerunner of the Pennsylvania Railroad (February 1930), p. 19.

¹⁵ Dr. Hubertis Cummings, "The Allegheny Portage Railroad," Historic Pennsylvania Leaflet, no. 19 (1974), pp. 3-4.

¹⁶ Allegheny Portage Railroad, Its Place in the Main Line of Public Works of Pennsylvania, pp. 23-24.

¹⁷ Wilson, p. 71.

¹⁸ Allegheny Portage Railroad, Its Place in the Main Line of Public Works of Pennsylvania, p. 24.

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The Allegheny Portage Railroad caused much excitement, especially during its early days. Many diarists commented upon this awesome journey. In 1842, Charles Dickens enjoyed the trip:

Occasionally the rails are laid upon the extreme verge of a giddy precipice; and looking from the carriage window, the traveller gazes sheer down, without a stone or scrap of fence between, into the mountain in a keen wind, to look down into a valley full of light and softness; catching glimpses through the tree tops, of scattered cabins; children running...families sitting out in their rude gardens...and we riding onward, high above them, like a whirlwind.¹⁹

The excitement was not limited to the railroad's transient users. Existing towns and businesses along the Allegheny Portage route thrived because the railroad's competitive rates attracted much business. When the canal opened for business on March 18, 1834, private transportation companies conveyed goods and passengers across the state. The Commonwealth entered its own vessels in the Main Line System in 1843. By charging less than private groups, the Commonwealth hoped to stimulate trade by allowing even persons of small means to use the railroad.²⁰ The Allegheny Portage shipped items from Hollidaysburg to Blairsville for \$4 a ton, as opposed to the rate of \$12 or \$16 a ton over the turnpike.

The railroad proved to be a boon to businesses located along the route. Mills predating the railroad, such as Lilly's, Litzinger's, and Croyle's, evolved into the communities of Lilly, Jefferson (Wilmore), and Summerhill, respectively. Such villages prospered during the days of the Allegheny Portage. Other communities along its path supported taverns and inns. The town of Portage was particularly important as the half-way point, and its Half-Way House was a logical place to stop for a meal. Johnstown

¹⁹ Harry A. Jacobs, The Juniata Canal and Old Portage Railroad (Hollidaysburg, Pennsylvania: the Blair County Historical Society, 1941, 1969), p. 19.

²⁰ Wilson, pp. 55, 69.

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and Hollidaysburg boomed because they served as junctures between the canal and the railroad.

The Summit contained both Denlinger's House at the intersection of the turnpike and the railroad, and Samuel Lemon's Federal-style tavern, which still stands as testament to the thriving days of the Allegheny Portage Railroad. This prominent home and inn was constructed of the same abundant sandstone that was used for sleepers and other actual railroad members. Prior to constructing this large edifice in 1834, Lemon operated a smaller, log tavern within the vicinity of the new structure. Lemon built the present structure when he heard of the coming of the Portage. He capitalized on the situation, virtually holding a monopoly on supplying coal, shelter, water, and sustenance to the railroad users.

The Lemon House vividly calls to mind the age of the Allegheny Portage. Yet the 36.6 mile route of the railroad is also rich in archeological resources that merit equal preservation. These artifacts yield essential information about the railroad's unique engineering elements. Much archeological work has been done on the railroad trace, with fruitful results. Remains of engines houses, Samuel Lemon's coal mine entrance and shipping wharf, actual railroad parts, and related resources have been revealed because of this work. For example, archeology has revealed the location of the component parts of Engine House 6, which suggests important information on the mechanics of the cables and steam engines that raised and lowered the cars over the inclines. Archeology at Staple Bend Tunnel has exposed labor-intensive, decorative stone carving on the monumental portals, which relays the importance attributed to the first railroad tunnel in the United States. Though not always visible, the archeology of the Allegheny Portage Railroad is a resource worthy of preservation. The knowledge to be gained from sites of determined archeological value cannot be overstated. Without archeology, much of what is currently known about the Allegheny Portage Railroad would have remained a mystery.

Despite the Allegheny Portage's astounding engineering and transportation advances, inherent shortcomings and further technological progress guaranteed its demise. Maintenance and repair became troublesome almost immediately. Every winter, freezing disrupted the placement of sleepers and other parts of the railroad. The dismantling of the inclines became a major topic almost from the start of the railroad, their safety never being

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completely assured.²¹ Cars often ran off the tracks, ropes snapped, and steam engines exploded. Engineers soon began working on alternatives to the inclines.

In addition to these maintenance and repair problems, the Canal Commissioners faced competition from private sector efforts to construct a continuous rail line across the state. In response, the Commissioners passed a resolution in 1836, just two years after completion, calling for an alternative portage route that by-passed the inclines. But in 1846, before the new portage route could be completed, the Pennsylvania Railroad Company was incorporated. This private company made a cross-state railroad from Philadelphia to Pittsburgh a reality in 1852 by using the Philadelphia and Columbia Railroad and the Portage routes in conjunction with new tracks that replaced the canals.²² The New Portage successfully eliminated Inclines 1, 2, and 3 by 1853, but in 1854 the Pennsylvania Railroad completed its innovative Horseshoe Curve, bypassing both the old and new Allegheny Portage Railroad.²³

The New Portage Railroad was finally completed in 1855, replacing the remaining outdated inclines of the Old Portage with wide, sweeping curves. But the canal system and portage railroad which serviced it was clearly obsolete in the face of continuous, cross-state rail service. By the mid-1850's, the Allegheny Portage Railroad and the Pennsylvania Main Line Canal were in financial shambles due to the superior service offered by the Pennsylvania Railroad. The Commonwealth could not sustain this public works project, and in 1857, the entire Main Line route was sold to the Pennsylvania Railroad, thus ending the reign of the Allegheny Portage Railroad.

Although quickly surpassed by superior technology, the Allegheny Portage Railroad, with its ten inclines, provided 36.6 miles of rail service when railroads were a rarity in the United States. It accelerated transportation to the American west, and served with distinction until the start of a new phase of railroading took its place. The Allegheny Portage Railroad is an important part in the nation's transportation story. The

²¹ Wilson, p. 73.

²² Timothy Jacobs, The History of the Pennsylvania Railroad (Greenwich, Connecticut: Bison Book Corp., 1988), p. 25.

²³ Wilson, p. 78.

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preservation of its remaining vestiges is necessary to commemorate its contributions to nineteenth century advances in transportation and engineering.

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Associated Property Types**I. Name of Property Type.** Linear Segments of the Allegheny Portage Railroad

II. Description. The substantial construction required for the Allegheny Portage Railroad began in 1831. Workers cleared a path through the forested, mountainous land and began construction on the ten inclines, corresponding engine houses and hitching sheds, 70 culverts, 85 drains, four viaducts, one land bridge, and one tunnel necessary for the operation of this engineering feat. The railroad was composed of two tracks, each 4'9" wide, with a space in between of 5'.¹ The total road bed was graded at 25' wide; the right-of-way was 120 feet in width.² Today, extant portions of this 120 foot wide right of way exists in the following forms:

- o railroad right-of-way within forested tracts
- o modern paved roads over right-of-way
- o modern railroads over right-of-way

Forested tracts are those areas where the right-of-way is not covered by a major transportation artery but rather where it has been abandoned and thus preserved through neglect. Within forested areas, the 25' wide trace and/or the 120 foot right-of-way is still visible as a land cut or fill. Often these areas once held minor back roads after the close of the Allegheny Portage era. Now they are covered with natural vegetation and are usually lined with rudimentary footpaths. Because little modern interruption has occurred, the original grade has remained intact. Original stretches of sleepers are often present at various places also. Culverts, small drains, retaining walls, and other archeological

¹ Transcription of Specifications of the Manner of Preparing Materials and Laying the Rails on the Allegheny Portage Rail Road, Reports and Misc. Docs., 1829-43, Box 8, Vol. 1, p. 79, A.P.R.R., Div. Rec., BCC, RG 17, Pa. A., Appendix F, in Anna Coxe Toogood, Historic Resource Study Allegheny Portage Railroad National Historic Site Pennsylvania (Denver: Denver Service Center, Historic Preservation Team, National Park Service, United States Department of the Interior, May 1973), pp. 143-147.

² Allegheny Portage Railroad, Its Place in the Main Line of Public Works of Pennsylvania, Forerunner of the Pennsylvania Railroad (February 1930), p. 16.

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remains as well as larger features from the Allegheny Portage such as the Staple Bend Tunnel and the Skew Arch Bridge are situated within forested areas.

Twenty miles of the right-of-way is covered by modern road surfaces, as determined by archeological work and a comparison of county road records with original plans. The presence of modern road surfaces is most prevalent on the Western Slope where the course was less precipitous and therefore amenable to modern transportation use during a later period. Portions of Legislative Road 11028, New Route 53, The Old Portage Railroad Road, and Old Route 53, all in Cambria County, cover the trace at certain places. These roads are not major highways. They are two lanes and have a width of 22', which is very much in keeping with the original 25' wide Allegheny Portage rail bed or trace. The setting is relatively rural, although small towns and sporadic housing developments line the trace at places. While the original grade has been maintained for the most part, there are places where modern development has disturbed the grade that existed during the time of the Allegheny Portage.

Rail lines now cover approximately the first five miles on either end of the historic right-of-way. The western-most four miles of the Allegheny Portage's path now runs through steel mills and their accompanying residential communities. The Conrail lines that cover the right-of-way on the Eastern Slope from Hollidaysburg toward Incline 10 lie on a deep, 11 foot ballast fill. These most eastern five miles underneath Conrail tracks run parallel to the major transportation route of US 22, and rather dense residential and commercial development.

While the trace is basically accounted for in most places, modern interruptions, most prominently highways, have obliterated it in a few areas.

The following describes the condition of the original Allegheny Portage railroad right-of-way from west to east: construction of Cambria (later Bethlehem) Steel mills and industrial neighborhoods have obliterated approximately the first four miles of the original right-of-way. The first linear segment begins at this point, the foot of Incline 1, and runs perpendicular to active Conrail railroad tracks. The right-of-way in this segment is contained within a forested area, and includes the Incline, Staple Bend Tunnel, and two more miles of right-of-way. The right-of-way is then disrupted for several miles as the 1889 Johnstown Flood,

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Cambria and Blacklick Railroad tracks, road construction, and town developments have obscured any evidence of the original resource. The right-of-way resumes along Route 53 just west of the town of Summerhill. Along the paved surfaces of Old and New Route 53 between Summerhill and Lilly lie five significant Allegheny Portage culverts plus Inclines 2 and 4. The right-of-way and Incline 3 have been lost to new road construction. East of Lilly the right-of-way follows Legislative Route 11028, where a culvert and Incline 5 are found. The Summit Level and a majority of the Eastern Slope are then included in two separate linear segments within forested tracts. The western-most five miles are covered by Conrail tracks, which lead to the site of the canal basin in downtown Hollidaysburg.

III. Significance. The linear segments of the Allegheny Portage Railroad are of national significance under National Historic Landmark Criterion 1 and NHL Themes Transportation/Railroads and Technology (Engineering and Invention)/Transportation, as well as under National Register Criteria A, C, and D.

All linear segments are significant under NHL theme and National Register area of transportation, due to their association with the evolution of rail transportation in the early nineteenth century. The segments preserve the right-of-way and the landscape of the first railroad to overcome the Allegheny Front. The right-of-way, inclines, culverts, Staple Bend Tunnel, Skew Arch Bridge, archeological remains of engine houses and of other resources, plus in-situ sleepers and stringers found within the linear segments preserve the materials, location, feeling, association, and workmanship of this important transportation route. The sense of how the railroad operated, and the terrain through which it passed, is evoked by these linear segments.

Closely related is the significance of the linear segments under the NHL theme of Technology (Engineering and Invention) and the National Register Area of Engineering. The linear segments represent a type or method of construction which made possible the original Allegheny Portage Railroad, a major transportation route and the engineering marvel of its day. In order to overcome the 2,300 foot high Allegheny Front, the railroad's designers and builders had to manipulate the existing topography. Their handiwork is preserved in the linear segments, which include graded level areas; the cut-and-fill inclines; Staple Bend Tunnel, the nation's first railroad tunnel; the stringers, sleepers, and tracks which carried the railroad cars; the culverts and drains which carried water away from the tracks; and the archaeological

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remains of engine houses which made surmounting and descending the steep Allegheny Front possible. The builders pride in their engineering accomplishments is reflected in the materials and workmanship of Staple Bend Tunnel and the well-preserved culverts.

Some linear segments are also significant under National Register Criteria D and the area of archeology. Archeological work within the linear segments has yielded information important in the history of the railroad and is likely to yield more. Archeological investigations have revealed the location of Samuel Lemon's mine entrance and coal wharf, uncovered evidence of a facade on the west side of Staple Bend Tunnel, and have helped to locate the remains of the engine houses and other support buildings at both the Staple Bend Tunnel and the Summit Level. Further investigations could reveal the location of other engine houses and information on the operation of the railroad.

IV. Registration Requirements. This National Historic Landmark Multiple Property Documentation Form includes only those resources of national significance related to the original or "old" Allegheny Portage Railroad. In assessing how much of the original 36.6 miles still exists as well-preserved linear segments, the integrity of each current condition of the right-of-way must be analyzed separately. A portion of the right-of-way constitutes a linear segment of the Allegheny Portage Railroad and is eligible for listing as part of the National Historic Landmark if it maintains significant integrity of location, design, setting, materials, workmanship, feeling, and association. Its location must be determined by historical or archeological research or resources. Its original design, materials, and workmanship must be evident in land cuts, fills, inclines, grades. The setting, feeling, and association of the linear segments must be compatible with the era of the Allegheny Portage Railroad. If a segment contains significant integrity in the above areas, it is eligible for designation as part of the landmark. The following offers a more in-depth discussion of the integrity of each of the present conditions.

- railroad trace within forested tract: The trace is best preserved in areas where it exists in a natural setting with few modern incursions. These areas are historic districts and are eligible for inclusion in the National Historic Landmark within the classification of linear segments. The lack of modern development gives these tracts a very palpable sense of association, feeling and setting of the Allegheny Portage era, when the railroad

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advanced west through this undeveloped area of Pennsylvania. Historical maps and archeological investigations confirm the location of the right-of-way in these areas. The original design, workmanship, and materials are seen in the well-preserved railroad bed that exists as a cut or fill, and in the substantial culverts, drains, and retaining walls as well as the more monumental above-ground resources like the Skew Arch Bridge and Staple Bend Tunnel.

- modern paved road surface over trace: Sections of the trace covered by modern road surfaces can be included in the landmark as linear segments if road records prove that the modern road precisely follows the Allegheny Portage trace and intensive archeology results in the visual confirmation of the trace at these locations. Although the presence of culverts often verifies the location of the trace under paved road surfaces, the existence of modern commercial and residential development here detracts from the segment's integrity of association, setting, and feeling. More road record investigations and archeological proof is necessary to confirm the integrity of areas of the trace with roads over it.

Individual structures such as culverts that exist underneath paved road surfaces and possess significant integrity of design, material, and workmanship meet National Register criteria, but as individual resources. They are included under the second associated property type, culverts.

Some paved road surfaces qualify as linear segments as they contain the length and width of an incline. In these cases, the inclines exist with modern roads paved over their surfaces. But their original width, grade, and Allegheny Portage era setting are maintained. These inclines also exist within the land cuts, or on top of the land fills, originally constructed during the creation of the Allegheny Portage Railroad.

- modern railroad over trace: Historical documentation has confirmed the location of the trace underneath modern railroad tracks at either end of the trace.³ Yet no visual evidence now remains. The trace underneath the modern rail lines on the Western Slope, near Johnstown has been affected by much flooding and

³ See original survey of the Allegheny Portage Railroad, Sylvester Welch, "Plans Showing the Division of the Road into Sections," Record Group 17, Map Book #19k (Harrisburg, Pennsylvania: Pennsylvania Historical and Museum Commission, Division of Archives and Manuscripts, 1831).

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industrial development. On the Eastern Slope, near Hollidaysburg, many Allegheny Portage features may exist within the safety of a deep, 11 foot ballast fill on which the modern rail tracks have been laid. These areas are very industrialized, and maintain little integrity of feeling, setting, and association. Until further archeology takes place, these areas are not eligible for listing as part of the National Historic Landmark.

Linear segments maintain the feeling of the Allegheny Portage era as they contain few modern intrusions. They are a constant 120 feet in width--equivalent to the width of the original right-of-way--except at those places where either natural features or built resources require a wider boundary. Their lengths are sufficient so as to allow for enough of a continuous site line of the railroad trace to evoke a sense of its direction and grade at various points along its route.

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Associated Property Types

I. Name of Property Type Culverts of the Allegheny Portage Railroad

II. Description The Allegheny Portage Railroad was a unique system that advanced the nation's engineering, transportation, and commercial development. As with any system, its component parts are responsible for its operation and significance. The original 68 culverts of the Allegheny Portage aided in its operation by channelling excess water underneath its tracks. Four viaducts and approximately 85 small drains were also built to provide passages for water under the railroad. Although the viaducts were larger and more monumental, they no longer exist. Drains still appear, but they are small and required little design or workmanship and most have been lost. But many culverts still remain and offer much information on the design of utilitarian engineering features of this important transportation system.

Culverts were constructed regularly throughout the length of the right-of-way. The largest, most obvious ones are found bridging creeks and small streams, yet others were constructed wherever excess water was seen as a potential problem. Today, many culverts still exist and help to define the railroad's location at various points while illustrating examples of early nineteenth century engineering design. Many culverts fall within the sections of the trace designated as linear segments. Yet others do not exist within these stretches but still meet National Historic Landmark and National Register standards for significance and integrity. Such culverts are easily recognizable as Allegheny Portage era resources and contribute to the integrity of the railroad. In all, 15 Allegheny Portage culverts have been included in the National Historic Landmark, 9 within linear segments, and 6 individually.

According to the original Allegheny Portage building specifications, the culverts varied in length, or span, from three to twenty five feet. They were built of native hammered sandstone and usually laid in courses with common lime mortar, although a number were built without mortar. The culverts usually had curved, stepped wing walls on either end to retain the earth. The stones comprising the elliptical or semi-circular arched openings did not require mortar, as keystones held them in place. The coping and voussoirs were specified to be of smoothly cut stone, yet individual contractors along the route often used variations of

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stone work, as seen in some remaining culverts that employ natural rocks as voussoirs.¹

III. Significance The Allegheny Portage Railroad is of national significance and its culverts are nominated under National Historic Landmark Criterion 1 and NHL Themes Transportation/Railroads and Technology (Engineering and Invention)/Transportation, as well as National Register criteria A, C, and D. To be included in the National Historic Landmark, the culverts must maintain sufficient integrity of location, design, materials, workmanship, feeling, setting, and association.

The culverts are significant under the National Historic Landmark theme and National Register area of transportation, due to their association with the first railroad to transverse the Allegheny Front. The culverts represent one of the many utilitarian engineering features which made the route possible, diverting water which potentially could cripple operations. They also were one of the components which made possible the transportation of goods and people across the state.

Closely related is the significance of the culverts under the NHL theme of Technology and the National Register area of Engineering. The culverts represent a type or method of construction which made possible the Allegheny Portage Railroad, a major transportation route and the engineering marvel of its day. The artistic merit, and pride of the builders, is reflected in the materials and workmanship of the most well-preserved culverts. The best-preserved examples feature coursed, native hammered sandstone, semi-circular or elliptical arched openings, stone voussoirs, and extending wing-walls to retain earth. Less grand examples sometimes omit the wing-walls, but share the other elements.

The culverts also may be significant under National Register Criteria D, for the information they yield or are likely to yield. The culverts often provide the best evidence for determining or

¹ See transcription of "Report of S. Welch, Engineer," PHJ 1832-33, App. to Vol. 2, pp. 75-76, Appendix E, in Anna Coxe Toogood, Historic Resource Study Allegheny Portage Railroad National Historic Site Pennsylvania (Denver: Denver Service Center, Historic Preservation Team, National Park Service, United States Department of the Interior, May 1973), pp. 141-142; also see Toogood's sample National Register Nomination, Culverts and the Skew Arch Bridge, Toogood, pp. 249-252.

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confirming the original route and grade of the railroad; this is especially true in those areas where the right of way is now covered with paved roads. Comparison of original building specifications with later Pennsylvania Department of Transportation records and visual assessments provide valuable clues concerning the route chosen.

IV. Registration Requirements This National Historic Landmark Multiple Property Documentation Form includes only those resources of national significance related to the original or "old" Allegheny Portage Railroad. Culverts included in the National Historic Landmark are those that maintain integrity of location, design, materials, workmanship, feeling, setting, and association. Defining characteristics include retention of the coursed sandstone construction, arched openings with voussoirs, wing-walls (where historically a feature), and some integrity of setting. Not all features must be present in all cases, but enough elements must remain to evoke integrity of feeling and association. These individual structures maintain sufficient integrity in and of themselves to relate part of the Allegheny Portage Railroad story. Allegheny Portage era culverts cannot be included in the National Historic Landmark as individual structures when they have lost integrity of design, materials, workmanship (e.g., stones replaced with modern material, or changes in culverts that have compromised the voussoirs and thus led to the loss of design and workmanship).

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Summary of Identification and Evaluation Methods

The Allegheny Portage Railroad National Historic Landmark Multiple Property Documentation was initiated by the Pennsylvania Historical and Museum Commission within the context of America's Industrial Heritage Project, an effort to preserve and commemorate southwestern Pennsylvania's contributions to America's industrial development. The aim was to prepare National Historic Landmark Documentation for all remaining resources immediately related to the operation of the original or "old" Allegheny Portage Railroad which retain integrity. While the railroad is a National Historic Landmark, a National Historic Site, and a well-recognized part of American transportation history, until now the National Historic Landmark has lacked adequate National Register documentation, precise boundaries, and a complete inventory.

In 1962, the Allegheny Portage was included on a National Park Service National Survey of Historic Sites and Buildings, and designated as a National Historic Landmark that same year.¹ The Staple Bend Tunnel, Summit area, and Inclines 2, 6, and 8 were singled out as particularly noteworthy, with the tunnel and Summit determined to be "the most suitable for Park development."² The study also mentioned the presence of culverts within the railroad's right-of-way, but it did not specify exact locations. The survey implied that all portions of the railroad between Hollidaysburg and Johnstown which retained sufficient integrity were to be considered a part of the National Historic Landmark.

Another National Survey of Historic Sites and Buildings was conducted in 1963. This study identified the Allegheny Portage Railroad's Lemon House and the Staple Bend Tunnel as particularly significant.³

¹ Catalogue of National Historic Landmarks 1987, the Allegheny Portage Railroad was declared a National Historic Landmark on December 29, 1962.

² Frank Barnes, National Survey of Historic Sites and Buildings, National Park Service, December 3, 1962.

³ Sydney Bradford, National Survey of Historic Sites and Buildings, National Park Service, May 21, 1963.

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In 1964, the Allegheny Portage Railroad was designated a National Historic Site. This allowed for the designation of up to 950 acres of related lands, including Inclines 6, 7, 8, 9, and 10, the levels in between, the Staple Bend Tunnel and the Lemon House, for commemorative use.⁴ Furthermore, the act enabled the federal government to acquire or manage certain lands within tentative Site boundaries. These boundaries were not fixed, a common practice which allows the Park Service to acquire land in excess of what has been originally authorized. The current National Historic Site boundaries include the Staple Bend Tunnel area, the Summit area, and the Eastern Slope from the Summit to the foot of Plane 10, a total of approximately 1300 acres.⁵

The National Historic Site designation prompted much research on the Allegheny Portage. Historian Earl Heydinger conducted the first detailed historical research project on the railroad in 1964. His work is the basis for all studies that followed.

The National Register of Historic Places, established through the National Historic Preservation Act of 1966, provided for the automatic inclusion of all National Historic Landmarks and National Historic Sites into the National Register. Therefore, the Allegheny Portage Railroad became a National Register property in 1966, although no official nomination had been written.

Work on an Allegheny Portage Railroad nomination laid dormant until 1973, when Anna Coxe Toogood of the National Park Service wrote an historic resource study. Expanding on Heydinger's work, Toogood's study has been a major source of information for these nominations. Toogood included short sample National Register nominations for the Lemon House, Inclines 6, 8, and 10 (including the levels in between

⁴ Public Law 88-546, 88th Congress, H.R. 931, August 31, 1964. Sec. 1.

⁵ The original map specifying boundaries for the National Historic Site is not available. For current boundaries, see Index Map, Allegheny Portage Railroad National Historic Site. National Park Service, Division of Land Acquisition, April 1979.

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and their corresponding engine house remains), the Skew Arch Bridge, a Summit area culvert and the culvert under Incline 10.

In the 1970's, short draft National Register nominations for the Staple Bend Tunnel area and the Eastern Slope were written by Park Service personnel. The latest one was submitted to the Department of the Interior in 1977. It was returned for revisions later that year to the Mid-Atlantic Office. No further action was taken after that point.

In 1988, a state-wide bridge survey was conducted through the Pennsylvania Historical and Museum Commission, resulting in the National Register listing of two Allegheny Portage resources, the Lilly and Bens Creek Culverts. Yet the culverts were listed as important bridge types rather than as Allegheny Portage Railroad resources.

In addition to these nomination efforts, archeological investigations have played a major role in gathering information on the Allegheny Portage. Most work has concentrated on the widely-known or monumental features of the Allegheny Portage Railroad, such as the Staple Bend Tunnel, the Lemon House, and the Skew Arch Bridge. The first archeological work along the railroad took place in 1967, involving a reconnaissance survey of park lands such as the head of Incline 1, the Staple Bend Tunnel, the Long Level between Inclines 1 and 2, the Summit area, and Inclines 6, 8, and 10. The first excavation along the Allegheny Portage occurred in 1968 and resulted in the clearing of debris from the heads of Inclines 6 and 8, and from the entrance of the Lemon coal vein. Later investigations detailed the extent of twentieth century impacts on the Skew Arch Bridge and led to the discovery of sleepers on the Summit Level. The Lemon House was the subject of many archeological projects to determine construction details, porch locations, and the age of certain rooms.⁶

Most recently, excavations at the Staple Bend Tunnel have determined the extent of resources remaining within or along the

⁶ For a chronology of archeology conducted along the Allegheny Portage Railroad, see Paula Zitzler, Allegheny Portage Railroad National Historic Site, Eastern Slope, Historic Structure Report Archeological Data Section, Draft, June 1990, pp. 25-28.

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right-of-way, and mitigated damage to these features.⁷ An Eastern Slope archaeological survey was completed in draft form in 1990, and a Western Slope survey is slated for completion by mid-1993. The preliminary work from these surveys has been a great source of information for this multiple property nomination.

In 1991, The Pennsylvania Historical and Museum Commission hired an intern to gather all previous research and writing on the Allegheny Portage Railroad, conduct walk-over surveys in conjunction with AIHP archaeologists, and with this information, prepare a thorough National Register form for as much of the original railroad right-of-way as possible.

Upon inspection, the trace was categorized into current use or condition classifications. These classifications include: trace within forested tract, modern road over trace, and modern railroad over trace. Also identified were sections where the trace has been obliterated due to modern development, or places where archaeology has yet to be completed and therefore the location of the trace is unknown.

Historical maps and documents confirmed the location of the right-of-way where it existed in forested settings, or under road or railroad surfaces. The official Allegheny Portage National Historic Site boundaries were considered as possible boundaries for the NHL, but research determined that Park Service territory changed frequently and often included land for parking lots or buffer zones that were not related to significant areas. The Bureau for Historic Preservation initially planned to define the National Historic Landmark as a linear district with the width set at 25 feet to match the width of the railroad bed. After the first draft of the nomination was reviewed, however, the width was increased to 120 feet, to reflect the original width of the right-of-way and to include most remaining resources. The boundary width increases where significant resources fall outside of the railroad right-of-way, such as at the Summit.

After a site visit by Pennsylvania Historical and Museum Commission personnel in June 1991, it was determined that the sections of the trace overlaid with railroad tracks should not be considered part of the National Historic Landmark at this time due to a lack of

⁷ Interview with Louis Berger Associates archeologist, Karen Orrence, September 27, 1991.

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integrity. The sections of the trace covered by railroad tracks only possess integrity of location; other integrity standards must be met before they can be included as part of the National Historic Landmark. If archaeological investigations later reveals important Allegheny Portage features at these locations, the multiple property format allows for additional nominations to be made.

After the modern railroad segments were eliminated from the tentative district proposal, a discontinuous district was planned. It included four sections of the right-of-way, two set within forested tracts, and two consisting of modern road surfaces over the right-of-way. Both conditions have integrity of location as determined by documentation and physical evidence of railroad resources along the trace. Integrity of design, materials, and workmanship were also seen in land cuts, fills, grades, as well as in structures like culverts and the Staple Bend Tunnel. But along some areas of the right-of-way covered by modern roads, the original grade had been compromised and the integrity of setting, association, and feeling marred by pockets of twentieth century commercial and residential development. During a second site visit, it was decided that these factors compromised integrity too greatly. It was also concluded that more study and archeological investigation could provide a basis for nomination of these questionable areas, but until that occurred, the places where the right-of-way was covered by modern road would not be included in the nomination. Therefore, the idea of a discontinuous district was abandoned and the multiple property model was adopted. This format will facilitate any later additions which may arise.

After all questionable areas were eliminated and the multiple property format was adopted, two major property types were evident: linear segments and culverts. The multiple property submission allows for further associated property types to be added at a later date. If important archeological remains of an engine house, for example, are discovered underneath a road surface, "archeological remains" may be added as a property type.

As a result of this process, it was determined that the following resources would be included in the National Historic Landmark documentation: The Staple Bend Historic District; the Summit Area Historic District; the Eastern Slope Historic District; Incline 2; Incline 4; Incline 5; Bens Creek Culvert; Lilly Culvert; Long Level Culvert; West Jamestown Culvert; East Jamestown Culvert; and Dysertown Culvert.

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The National Historic Landmark documentation of the nationally significant Allegheny Portage Railroad has been a challenging, sometimes difficult, undertaking. Because it is such an expansive resource (36.6 miles) and it now exists in so many forms, it has been virtually impossible to nominate its entire original length. The Multiple Property format, because of its versatility and allowance for later additions, is considered the best way to organize and nominate such a complex yet important resource.

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