

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900A92	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 669 OVER PEQUEST RIVER			FACILITY	CR 669		
TOWNSHIP	ANDOVER BOROUGH						
TYPE	SLAB	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	1	LENGTH	23 ft	WIDTH	24 ft		
CONSTRUCTION DT	1933	ALTERATION DT	1980ca	SOURCE PLANS			
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane road over a small watercourse in a wooded residential area of single-family homes developed in the 1960s.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The single span concrete slab bridge supported on concrete abutments has a standard county-type 2-rail concrete railing on one side. 2-rail guide railing replaced the original railing at the other side, and single-rail guide rails were placed in front of the railings in circa 1980. One of over 10 pre-WW II slab bridges in the county, the span is a short example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1901:1-2 (08/92)

REVISED BY (DATE):

QUAD: Stanhope

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900C17	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	ROSEVILLE ROAD OVER NEW JERSEY CUTOFF			FACILITY	ROSEVILLE ROAD		
TOWNSHIP	BYRAM TOWNSHIP						
TYPE	DECK ARCH	DESIGN	ELLIPTICAL			MATERIAL	Reinforced Concrete
# SPANS	1	LENGTH	66 ft	WIDTH	18 ft		
CONSTRUCTION DT	1911	ALTERATION DT				SOURCE	INSCRIPTION
DESIGNER/PATENT	DL&W OFFICE OF ENGINEERING			BUILDER	DAVID W. FLICKWIR		

SETTING / CONTEXT The bridge carries a 1-lane, 2-way road in a wooded undeveloped area over abandoned Conrail r-o-w, formerly r-o-w of the New Jersey Cutoff of the Delaware Lackawanna & Western Railroad. The NJ Cutoff was constructed to improve transportation of anthracite coal from Pennsylvania to markets east. A significant engineering achievement, the line was constructed with major cuts and fills, and avoided creating any highway railroad grade crossings along its 28.45 mile length.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No

CONSULT STATUS Not Individually Eligible. Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District, Eligible. Contributing.

CONSULT DOCUMENTS SHPO Opinion 3/22/94, Letter 03/12/01.

SUMMARY The elliptical concrete deck arch bridge supported on a concrete substructure has reticulated concrete balustrades. The handsome and unaltered span is one of 7 arch bridges built in the county as part of the 1908-1911 development of the NJ Cutoff by the DL&W RR. Others are in Warren Co. The cutoff is a technologically significant engineering achievement noted for its use of reinforced concrete for bridges and structures and for completely grade separating the railroad and highway crossings. The bridge is not individually eligible for listing in the National Register of Historic Places, but is eligible under Criterion C as a contributing element of the Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District.

INFORMATION
BIBLIOGRAPHY:
 "The New Cut-off Line of the Lackawanna Railroad", Wheaton, F.L., Engineering News, Vol.60, No.7, August 13, 1908.
 Short summary of DL&W Cut-off, Engineering News, Vol.60, No.3, July 16, 1908. pg.72.
 "Some Concrete Culverts and Small Bridges on the Slateford-Hopatcong Cut-off of the Delaware, Lackawanna & Western R.R.", Engineering News, Vol.62, No.14, September 30, 1909.
 Condit, Carl W., American Building Art The Twentieth Century, 1961.
 Taber, Thomas Townsend, The Delaware, Lackawanna & Western Railroad in the Nineteenth Century. 1977.
 Taber, T.T. and Taber, T.T. III, The Delaware, Lackawanna & Western Railroad in the Twentieth Century, Vols. I and II. 1980.
 Lefferts, H. Leedom Jr., and Piefer, David R., Northwest New Jersey: An Inventory and History of Historic Engineering and Industry. 1979.

Physical Description: The reinforced concrete elliptical arch bridge with a high rise is flanked by reticulated concrete balustrades. The arch spans 66', and carries an 18' wide road. The date of construction, 1911, is inscribed on the fascia. The span appears unaltered.

Historical and Technological Significance: The New Jersey Cut-Off, built in 1908-1911, is historically and technologically distinguished in the areas of engineering and transportation (Criteria A, C). The cut-off is an important engineering accomplishment of the early 20th century. The Delaware, Lackawanna & Western RR (DL&W) designed and built the line to improve the efficiency of train travel across the mountainous terrain of northwestern New Jersey in Warren, Sussex, and Morris counties from Slateford, Pennsylvania to the DL&W mainline near Lake Hopatcong. The design and construction of a railroad that rises and falls just eleven feet over its length of 28.45 miles while crossing the mountains and valleys of northwestern New Jersey is remarkable even today. The decision to use reinforced concrete exclusively for all structures along the route was a pioneering action that attracted the attention of the engineering profession. The railroad's use of reinforced concrete did much to prove the material to be as strong and durable as the engineers of the early-20th century had anticipated. The DL&W also made full use of the moldable qualities of the material, designing not just functional structures, but also aesthetically pleasing ones that enhance the beauty of the railroad.

Sixteen structures are included in the NJDOT Historic Bridge Survey, but other structures, including viaducts, tunnels, and stations, were observed within Warren and Sussex counties. The structures not included in this survey appear to have integrity consistent with those bridges and tunnels that are included.

The New Jersey Cutoff is the culmination of over 55 years of efforts by the company to improve its route across New Jersey to New York City. The Delaware, Lackawanna and Western Railroad (DL&W), composed of a network of smaller railroads in Pennsylvania, New York and New Jersey, was formed in 1853 for the purpose of moving anthracite coal from the mining regions of northeastern Pennsylvania to market locations. It started from the merger of the Liggett's Gap RR and the Delaware & Cobbs Gap RR, which had been chartered and developed around 1850 by parties interested in carrying the coal to the Erie RR to the west and to the Delaware River to the east.

As the anthracite coal mining industry grew, so did the desire to increase the access to markets. In reaching to the east the DL&W needed a connection in New Jersey. They incorporated the Warren Railroad in the 1851 to carry trains from the Delaware River at Columbia (Warren County, NJ) to Central Railroad of New Jersey tracks in Hampton (Hunterdon County, NJ). From there the coal could be moved eastward to Elizabethport (near Newark, NJ). Commuters also traveled this route to get to New York City. In the late 1860s the DL&W became dissatisfied with the CNJ connections and sought their own access to the New York markets. In 1868 they leased the Morris & Essex RR, which was developed in the 1830s and 1840s in Morris, Essex and Hudson counties and the 1850s in Warren County. The M&E crossed New Jersey from Hoboken to Phillipsburg on the Delaware River.

Though the DL&W controlled several railroads (like the M&E, Warren, Valley, etc.), each was operated separately until 1899, when new DL&W president William Truesdale centralized control of the company. This move allowed for increased efficiency for the railroad as a whole. In addition to the reorganization, Truesdale undertook an ambitious plan to modernize the routes (All background information



NEW JERSEY HISTORIC BRIDGE DATA

gathered from Taber, 1977).

In seeking a more efficient, less circuitous route to replace the old 1851 Warren Railroad right-of-way, the DL&W considered three plans to build a completely new route (Taber and Taber, 1980:34-36). The plan chosen was a completely new line that would include massive cuts and fills to virtually eliminate grade changes. The existing line was nearly 40 miles long, had 57 curves comprising almost 13 miles of track, and a maximum grade of 60.2 feet per mile with a total rise and fall of 248 feet. The new layout, known as the New Jersey Cut-Off, limited the number and degree of curves and saved over 11 miles of track from the circuitous old line. This was the most expensive choice, costing \$11,065,511.43 when completed (Taber and Taber, 1980:39), but the anticipated benefits for the railroad outweighed the cost.

Beginning in 1908 and under the direction of DL&W Chief Engineer George Ray, layout and design of the cut-off began. The line was to be 28.45 miles long, with a total rise and fall of just 11 feet and less than 5 miles of curved track. The new route would require 73 structures, including two massive viaducts, twelve overhead highway bridges and numerous crossings of roads and minor watercourses. Over 14 million cubic yards of both cut and fill were needed to create the relatively flat crossing of the hills and valleys of northwestern New Jersey (Taber and Taber, 1980:36).

Mr. Ray decided that reinforced concrete would be used for all structures along the route. This was the first time such a decision was made, causing the nickname of the "reinforced concrete railroad" to be used by the engineering profession when discussing the cut-off (Taber and Taber, 1980:36). Reinforced concrete was a state-of-the-art building material with yet unknown ultimate capabilities. It was thought to be as strong and durable as stone, and seemingly more permanent than wood or even steel.

Uncommon methods were used for the construction of the fills along the route. While the traditional method of building a wooden trestle to run dumping trains on was used for most fills, tracking was hung from suspended cables for the fills of greater magnitude. Dumping trains would carry fill onto the suspended tracks and dump the fill material from there. Most of the fill used on the cutoff was taken from the many cuts that were made, but even that was not enough. The DL&W bought 760 acres of farm land from which the contractors could dig additional fill. Five million pounds of dynamite was used to make the cuts. The Pequest Fill (Milepoint 55.85, Green Township, Sussex County) was the largest along the cut-off and in 1908 was claimed to be the "largest railway embankment ever made" (Engineering News, 1908:72). It was over 3 miles long and was up to 140 feet high. Over 6.5 million cubic yards of fill were necessary to reach the proper grade on this fill (Taber and Taber, 1980:36).

The DL&W chose to use similar structures for similar uses along the line. Where highway bridges were needed to cross their tracks, they designed reinforced concrete deck arch bridges, a bridge type that was capable of relatively long spans while providing dynamic and graceful forms. At least eleven deck arches were built in New Jersey, (1900G12, 1900G13, 1900K07, 1900C17, 2153166, 2153165, 2153164, 2153163, 2153162, 2153161, 2153160), all of them single span structures with one of two types of balustrades. Though design adjustments had to be made for roadway alignment and foundation conditions, the deck arch bridges are very similar structures.

Reinforced concrete arch tunnels were constructed where the cut-off crossed over roads or small waterways. These structures often supported high fill embankments as the cut-off crossed a valley. Over 35 of these structures were built along the line, and several of them are included in the Historic Bridge Survey (Wasigan and Simpson roads in Warren County, 2117152, and 1911155 in Sussex County). Slab-roofed tunnels and box culverts were also built to carry the right-of-way over roads and streams (1900C18).

The largest structures along the line were the two multi-span viaducts; the Delaware River Viaduct (2114159) in Knowlton Township and the Paulins Kill Viaduct (Milepoint 70.63, near Hainesburg in Knowlton Township). Both are open spandrel arch bridges that span valleys and larger water courses. The 9-span Delaware River Viaduct crosses the river as well as the highways that parallel it on both sides. It is 1,450 feet long and carries trains 65 feet above the river. The nine span structure has seven open spandrel arches and two deck arch approach spans on the Pennsylvania end. The 7-span Paulins Kill Viaduct in Hainesburg (Warren County) is 1100 feet long, but it is more graceful and magnificent as it rises 115 feet above the valley floor. It passes over the Paulins Kill River, the New York, Susquehanna and Western Railroad and the valley they run through (viaduct not included in the bridge survey because no roadway is associated with it). It was the most impressive structure on the DL&W main line prior to the building of the Tunkhannock Viaduct in Nicholson, Pennsylvania, completed in 1915.

Around the turn of the century, reinforced concrete arches were generally limited to relatively short and often single span bridges. The dead load carried by the arches was reduced with the introduction of open spandrel arches. The lighter structures were capable of longer spans and more aesthetically pleasing large bridges. The Walnut Lane bridge (1906-8) over Wissahickon Creek in Philadelphia was a forerunner of the type, though it used virtually no steel reinforcement in the two ribs (Condit, 1961:198). The use of reinforcement made the possibilities even greater. Under Ray's direction, the length and number of spans increased to create massive structures that dominated the landscape.

The New Jersey Cut-Off was divided into sections for bidding. Seven contractors were each awarded one section of the line, including contractors from as far away as Billings, Montana and Roanoke, Virginia. Each contract included all clearing, grading and masonry construction (Wheaton, 1908).

In addition to its engineering significance, the railroad right-of-way ranks historically as one of the most significant in the state, owing to the impact moving coal across the state had on the development of transportation systems within New Jersey. The Lehigh Valley Railroad played a significant role in the development of transportation and transportation-driven development in the northern half of the state, and the cut-off stands as one of the most ambitious remnants of the coal era in the state.

In summation, the viaducts, tunnels, overpasses, cuts, and fills on the New Jersey Cut-Off (1908-1911) form part of a unified design that was, and still is, one of the most remarkable engineering achievements of the early 20th century in the region. Furthermore, the New Jersey Cut-Off is one of the most visible remnants of the DL&W, and is illustrative of the history of one of the largest movers of coal that contributed to the transportation-driven economic growth of the northern half of the state. The New Jersey Cut-Off is a significant part of the western New Jersey historic landscape and transportation systems.



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Boundary Description and Justification: The significance of the structure is based, in part, on its historic association and physical connection with a right-of-way that is both historically and technologically important. In New Jersey, the potential historic corridor appears to be limited to the railroad right-of-way. The potential historic corridor is approximately 28 miles long stretching from the Delaware River to the eastern junction at Hopatcong, Morris County. The New Jersey Cut-Off's western junction is in Slateford, Pennsylvania on the west bank of the Delaware River. The entire route and all its related structures were not surveyed as part of this project, but those portions of the route that were surveyed or observed as part of the 1991-1993 Historic Bridge Survey have integrity of setting and original design and appear to representative of the overall state of preservation and completeness of the route in Sussex and Warren counties.

PHOTO: 1901:40-42 (08/92)

REVISED BY (DATE):

QUAD: Stanhope

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900C18	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	ROSEVILLE ROAD OVER WOLF LAKE INLET			FACILITY	ROSEVILLE ROAD		
TOWNSHIP	BYRAM TOWNSHIP						
TYPE	CULVERT	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	2	LENGTH	40 ft	WIDTH	30 ft		
CONSTRUCTION DT	1910	ALTERATION DT		SOURCE	NJDOT		
DESIGNER/PATENT	DL&W OFFICE OF ENGINEERING			BUILDER	DAVID W. FLICKWIR		

SETTING / CONTEXT The bridge carries a 2-lane road over a lake inlet in a wooded area. The bridge is beneath a concrete arch span and high fill carrying the New Jersey Cut-Off of the DL&W Railroad across a valley and lake. That arch span was not inventoried, but is pictured. The Cutoff improved the movement of Pennsylvania anthracite coal to markets east. A significant engineering achievement, the lines was constructed with major cuts and fills, and avoided creating any highway railroad grade crossings along its 28.45 mile length.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No

CONSULT STATUS Not Individually Eligible. Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District, Eligible. Contributing.

CONSULT DOCUMENTS SHPO Opinion 3/22/94, Letter 03/12/01.

SUMMARY The 2-span skewed reinforced concrete culvert span with concrete substructure has no railings. An example of a common bridge type, the span is not individually significant, but is an original feature of the 1908-11 NJ Cutoff of the DL&W RR, a significant engineering achievement noted for its use of reinforced concrete for bridges and structures and for completely grade separating the railroad and highway crossings. The culvert accommodates flow on each side of the cutoff, which crosses the lake. The structure is not individually eligible for listing in the National Register of Historic Places, but is eligible as a contributing element of the Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District under Criteria A and C.

INFORMATION
BIBLIOGRAPHY:
"The New Cut-off Line of the Lackawanna Railroad", Wheaton, F.L., Engineering News, Vol.60, No.7, August 13, 1908.
Short summary of DL&W Cut-off, Engineering News, Vol.60, No.3, July 16, 1908. pg.72.
"Some Concrete Culverts and Small Bridges on the Slateford-Hopatcong Cut-off of the Delaware, Lackawanna & Western R.R.", Engineering News, Vol.62, No.14, September 30, 1909.
Condit, Carl W., American Building Art The Twentieth Century, 1961.
Taber, Thomas Townsend, The Delaware, Lackawanna & Western Railroad in the Nineteenth Century. 1977.
Taber, T.T. and Taber, T.T. III, The Delaware, Lackawanna & Western Railroad in the Twentieth Century, Vols. I and II. 1980.
Lefferts, H. Leedom Jr., and Piefer, David R., Northwest New Jersey: An Inventory and History of Historic Engineering and Industry. 1979.

Physical Description: The skewed 2-span reinforced concrete culvert spans carries a road over a lake divided by the fill that carries the now-abandoned right-of-way of a railroad. The wide culvert spans beneath roadway and the railroad embankment. The embankment is carried over the roadway by a concrete arch tunnel. The culvert spans 40' and measures 300' wide along the skew (tunnel not included in the survey; the structure number refers to the 2-cell culvert). No alterations to the span were noted.

Historical and Technological Significance: The 2-cell concrete culvert, constructed in 1910, is not individually distinguished. It is significant because it was built, along with the concrete arch spanning above it to carry the railroad over the roadway, as part of the construction of the New Jersey Cut-Off of the Delaware, Lackawanna & Western RR. The New Jersey Cut-Off, built in 1908-1911, is historically and technologically distinguished in the areas of engineering and transportation (Criteria A, C). The cut-off is an important engineering accomplishment of the early 20th century. The Delaware, Lackawanna & Western RR (DL&W) designed and built the line to improve the efficiency of train travel across the mountainous terrain of northwestern New Jersey in Warren, Sussex, and Morris counties from Slateford, Pennsylvania to the DL&W mainline near Lake Hopatcong. The design and construction of a railroad that rises and falls just eleven feet over its length of 28.45 miles while crossing the mountains and valleys of northwestern New Jersey is remarkable even today. The decision to use reinforced concrete exclusively for all structures along the route was a pioneering action that attracted the attention of the engineering profession. The railroad's use of reinforced concrete did much to prove the material to be as strong and durable as the engineers of the early-20th century had anticipated. The DL&W also made full use of the moldable qualities of the material, designing not just functional structures, but also aesthetically pleasing ones that enhance the beauty of the railroad.

Sixteen structures are included in the NJDOT Historic Bridge Survey, but other structures, including viaducts, tunnels, and stations, were observed within Warren and Sussex counties. The structures not included in this survey appear to have integrity consistent with those bridges and tunnels that are included.

The New Jersey Cutoff is the culmination of over 55 years of efforts by the company to improve its route across New Jersey to New York City. The Delaware, Lackawanna and Western Railroad (DL&W), composed of a network of smaller railroads in Pennsylvania, New York and New Jersey, was formed in 1853 for the purpose of moving anthracite coal from the mining regions of northeastern Pennsylvania to market locations. It started from the merger of the Liggett's Gap RR and the Delaware & Cobbs Gap RR, which had been chartered and developed around 1850 by parties interested in carrying the coal to the Erie RR to the west and to the Delaware River to the east.

As the anthracite coal mining industry grew, so did the desire to increase the access to markets. In reaching to the east the DL&W needed a connection in New Jersey. They incorporated the Warren Railroad in the 1851 to carry trains from the Delaware River at Columbia (Warren County, NJ) to Central Railroad of New Jersey tracks in Hampton (Hunterdon County, NJ). From there the coal could be moved eastward to Elizabethport (near Newark, NJ). Commuters also traveled this route to get to New York City. In the late 1860s the DL&W became dissatisfied with the CNJ connections and sought their own access to the New York markets. In 1868 they leased the Morris & Essex RR, which was developed in the 1830s and 1840s in Morris, Essex and Hudson counties and the 1850s in Warren County. The M&E crossed New Jersey from Hoboken to Phillipsburg on the Delaware River.



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Though the DL&W controlled several railroads (like the M&E, Warren, Valley, etc.), each was operated separately until 1899, when new DL&W president William Truesdale centralized control of the company. This move allowed for increased efficiency for the railroad as a whole. In addition to the reorganization, Truesdale undertook an ambitious plan to modernize the routes (All background information gathered from Taber, 1977).

In seeking a more efficient, less circuitous route to replace the old 1851 Warren Railroad right-of-way, the DL&W considered three plans to build a completely new route (Taber and Taber, 1980:34-36). The plan chosen was a completely new line that would include massive cuts and fills to virtually eliminate grade changes. The existing line was nearly 40 miles long, had 57 curves comprising almost 13 miles of track, and a maximum grade of 60.2 feet per mile with a total rise and fall of 248 feet. The new layout, known as the New Jersey Cut-Off, limited the number and degree of curves and saved over 11 miles of track from the circuitous old line. This was the most expensive choice, costing \$11,065,511.43 when completed (Taber and Taber, 1980:39), but the anticipated benefits for the railroad outweighed the cost.

Beginning in 1908 and under the direction of DL&W Chief Engineer George Ray, layout and design of the cut-off began. The line was to be 28.45 miles long, with a total rise and fall of just 11 feet and less than 5 miles of curved track. The new route would require 73 structures, including two massive viaducts, twelve overhead highway bridges and numerous crossings of roads and minor watercourses. Over 14 million cubic yards of both cut and fill were needed to create the relatively flat crossing of the hills and valleys of northwestern New Jersey (Taber and Taber, 1980:36).

Mr. Ray decided that reinforced concrete would be used for all structures along the route. This was the first time such a decision was made, causing the nickname of the "reinforced concrete railroad" to be used by the engineering profession when discussing the cut-off (Taber and Taber, 1980:36). Reinforced concrete was a state-of-the-art building material with yet unknown ultimate capabilities. It was thought to be as strong and durable as stone, and seemingly more permanent than wood or even steel.

Uncommon methods were used for the construction of the fills along the route. While the traditional method of building a wooden trestle to run dumping trains on was used for most fills, tracking was hung from suspended cables for the fills of greater magnitude. Dumping trains would carry fill onto the suspended tracks and dump the fill material from there. Most of the fill used on the cutoff was taken from the many cuts that were made, but even that was not enough. The DL&W bought 760 acres of farm land from which the contractors could dig additional fill. Five million pounds of dynamite was used to make the cuts. The Pequest Fill (Milepoint 55.85, Green Township, Sussex County) was the largest along the cut-off and in 1908 was claimed to be the "largest railway embankment ever made" (Engineering News, 1908:72). It was over 3 miles long and was up to 140 feet high. Over 6.5 million cubic yards of fill were necessary to reach the proper grade on this fill (Taber and Taber, 1980:36).

The DL&W chose to use similar structures for similar uses along the line. Where highway bridges were needed to cross their tracks, they designed reinforced concrete deck arch bridges, a bridge type that was capable of relatively long spans while providing dynamic and graceful forms. At least eleven deck arches were built in New Jersey, (1900G12, 1900G13, 1900K07, 1900C17, 2153166, 2153165, 2153164, 2153163, 2153162, 2153161, 2153160), all of them single span structures with one of two types of balustrades. Though design adjustments had to be made for roadway alignment and foundation conditions, the deck arch bridges are very similar structures.

Reinforced concrete arch tunnels were constructed where the cut-off crossed over roads or small waterways. These structures often supported high fill embankments as the cut-off crossed a valley. Over 35 of these structures were built along the line, and several of them are included in the Historic Bridge Survey (Wasigan and Simpson roads in Warren County, 2117152, and 1911155 in Sussex County). Slab-roofed tunnels and box culverts were also built to carry the right-of-way over roads and streams (1900C18).

The largest structures along the line were the two multi-span viaducts; the Delaware River Viaduct (2114159) in Knowlton Township and the Paulins Kill Viaduct (Milepoint 70.63, near Hainesburg in Knowlton Township). Both are open spandrel arch bridges that span valleys and larger water courses. The 9-span Delaware River Viaduct crosses the river as well as the highways that parallel it on both sides. It is 1,450 feet long and carries trains 65 feet above the river. The nine span structure has seven open spandrel arches and two deck arch approach spans on the Pennsylvania end. The 7-span Paulins Kill Viaduct in Hainesburg (Warren County) is 1100 feet long, but it is more graceful and magnificent as it rises 115 feet above the valley floor. It passes over the Paulins Kill River, the New York, Susquehanna and Western Railroad and the valley they run through (viaduct not included in the bridge survey because no roadway is associated with it). It was the most impressive structure on the DL&W main line prior to the building of the Tunkhannock Viaduct in Nicholson, Pennsylvania, completed in 1915.

Around the turn of the century, reinforced concrete arches were generally limited to relatively short and often single span bridges. The dead load carried by the arches was reduced with the introduction of open spandrel arches. The lighter structures were capable of longer spans and more aesthetically pleasing large bridges. The Walnut Lane bridge (1906-8) over Wissahickon Creek in Philadelphia was a forerunner of the type, though it used virtually no steel reinforcement in the two ribs (Condit, 1961:198). The use of reinforcement made the possibilities even greater. Under Ray's direction, the length and number of spans increased to create massive structures that dominated the landscape.

The New Jersey Cut-Off was divided into sections for bidding. Seven contractors were each awarded one section of the line, including contractors from as far away as Billings, Montana and Roanoke, Virginia. Each contract included all clearing, grading and masonry construction (Wheaton, 1908).

In addition to its engineering significance, the railroad right-of-way ranks historically as one of the most significant in the state, owing to the impact moving coal across the state had on the development of transportation systems within New Jersey. The Lehigh Valley Railroad played a significant role in the development of transportation and transportation-driven development in the northern half of the state, and the cut-off stands as one of the most ambitious remnants of the coal era in the state.

In summation, the viaducts, tunnels, overpasses, cuts, and fills on the New Jersey Cut-Off (1908-1911) form part of a unified design that was, and still is, one of the most remarkable engineering achievements of the early 20th century in the region. Furthermore, the New



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Jersey Cut-Off is one of the most visible remnants of the DL&W, and is illustrative of the history of one of the largest movers of coal that contributed to the transportation-driven economic growth of the northern half of the state. The New Jersey Cut-Off is a significant part of the western New Jersey historic landscape and transportation systems.

Boundary Description and Justification: The significance of the structure is based, in part, on its historic association and physical connection with a right-of-way that is both historically and technologically important. In New Jersey, the potential historic corridor appears to be limited to the railroad right-of-way. The potential historic corridor is approximately 28 miles long stretching from the Delaware River to the eastern junction at Hopatcong, Morris County. The New Jersey Cut-Off's western junction is in Slateford, Pennsylvania on the west bank of the Delaware River. The entire route and all its related structures were not surveyed as part of this project, but those portions of the route that were surveyed or observed as part of the 1991-1993 Historic Bridge Survey have integrity of setting and original design and appear to representative of the overall state of preservation and completeness of the route in Sussex and Warren counties.

The viaduct is also individually eligible, in and of itself, including superstructure, substructure, and right-of-way over the water feature and highways.

PHOTO: 1908:1-4; 432:2-5 (08/92)

REVISED BY (DATE):

QUAD: Stanhope

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900D07	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0	
NAME & FEATURE INTERSECTED	SMITH HILL ROAD OVER BRANCH OF PAULINS KILL LAKE		FACILITY	SMITH HILL ROAD				
TOWNSHIP	FRANKFORD TOWNSHIP							
TYPE	PNY TRUSS	DESIGN	PRATT				MATERIAL	Metal
# SPANS	1	LENGTH	48 ft	WIDTH	11 ft			
CONSTRUCTION DT	1890ca	ALTERATION DT	Moved: 1994		SOURCE	PLAQUE (REMOVED)		
DESIGNER/PATENT	UNKNOWN		BUILDER	I. P. BARTLEY & CO.				

SETTING / CONTEXT The bridge carries a 1-lane 2-way collector road over a small stream surrounded by wooded undeveloped land. The bridge is about 50' from the intersection with US 206. The structures in the area along US 206 are both residential and commercial, and they date from the late 1800s through the 1970s.

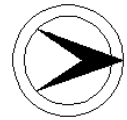
1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Bridge was Individually Eligible.
CONSULT DOCUMENTS SHPO Finding 7/9/90, Letter 6/30/95.

SUMMARY The single-span Pratt pony truss bridge is supported by concrete abutments. The deck is laminated timber, and the curbs are timber. The original metal pipe railings remain along the face of the trusses. The lower chord is dented at one location, and welded spacers were added at the bottom chord. The bridge is significant because it is a well-preserved example of a pony truss constructed by a local contractor. It is scheduled to be removed and placed at the county fairgrounds.

INFORMATION

PHOTO: 1906:36-39 (08/92) REVISIED BY (DATE): QUAD: Branchville

NEW JERSEY DEPARTMENT OF TRANSPORTATION
 BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900E06	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0	
NAME & FEATURE INTERSECTED	CR 631 OVER WALLKILL RIVER			FACILITY	CR 631			
TOWNSHIP	FRANKLIN BOROUGH							
TYPE	STONE ARCH	DESIGN	ELLIPTICAL				MATERIAL	Stone
# SPANS	1	LENGTH	40 ft	WIDTH	38.7 ft			
CONSTRUCTION DT	1875	ALTERATION DT	1932, 1984		SOURCE STYLE			
DESIGNER/PATENT					BUILDER			

SETTING / CONTEXT The bridge carries a 2-lane road with shoulders and a sidewalk over a small stream in a commercial area dating from the 1900s through the 1950s.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The stone arch bridge was widened to both sides with steel stringers on stone and concrete abutments with wingwalls. The north side was widened in 1932 and the south side in 1984. The masonry has been repointed. A 2-rail concrete railing at the north side dates to the 1932 widening. A guide rail flanks the sidewalk at the south side. The span is not distinguished because alterations have compromised the original design integrity of the bridge.

INFORMATION

PHOTO: 1903:17-19 (08/92) REVISD BY (DATE): QUAD: Franklin

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900E07	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 631 OVER WALLKILL RIVER, NY S & W RR			FACILITY	CR 631		
TOWNSHIP	FRANKLIN BOROUGH						
TYPE	THRU GIRDER	DESIGN					
# SPANS	14	LENGTH	498 ft	WIDTH	24 ft	MATERIAL	Steel
CONSTRUCTION DT	1927	ALTERATION DT					
DESIGNER/PATENT				SOURCE	COUNTY RECORDS		
				BUILDER			

SETTING / CONTEXT The bridge carries a 2-lane road and a sidewalk over a small river and Conrail. This line was part of the Lehigh and Hudson River and New York, Susquehanna and Western Railroads before being transferred to Conrail. Just south of the span, the line links with a branch that served the New Jersey Zinc Mine in Ogdensburg, which was an important source of revenue for the L&H. The span is located in a wooded area of homes dating from the 1930s to the 1960s.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The 14-span riveted thru girder with floorbeams viaduct is supported on concrete abutments and riveted steel pier bents. A few pier bents were replaced in kind but have welded connections. The girder web in span 2 has welded repair plates. Metal picket railing flanks the cantilevered sidewalk at the north, and modern 3-rail railing flanks the south side. The viaduct span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

Bibliography:

H. Leedom Lefforts, Jr., and David Peifer. Northwest New Jersey: An Inventory and History of Historic Engineering and Industry. Washington, DC: Heritage Conservation and Recreation Service, 1979.
 Sussex County Engineer. Bridge Files.

Physical Description: The 14-span bridge built on a skew carries a two-lane highway over a single railroad track and the Walkkill River. The bridge consists of from east to west one steel stringer span, one thru girder with floor beams span, three deck girder with floor beams spans, two thru girder with floor beams spans (the first over the railroad track), two stringer spans, and five deck girder with floor beams spans (the first over the river). The bridge is supported by steel pier bents with cross bracing and by concrete spill-thru abutments. The viaduct has a cantilevered sidewalk with metal railing to the north. The structure exhibits no unusual or distinctive construction details.

Historical and Technological Significance: The 14-span viaduct, constructed in 1927, is composed of a combination of thru girder, deck girder, and steel stringer spans, all standard early 20th century bridge types. Although the bridge is a multi-span railroad overpass composed of several very common and well represented bridge types, it is not a technologically distinguished example, and it demonstrates no innovative construction techniques.

The bridge, sometimes referred to as the Franklin Viaduct, is located at the Franklin junction of the former New York, Susquehanna and Western (NYS&W) Railroad's Sussex Branch, the Lehigh and Hudson (L&H) Railroad's main line, and the Delaware, Lackawanna and Western Railroad's Sussex Branch. The railroad right-of-ways were developed from 1860 to 1885 and served to transport through traffic and products of local farms, mines and factories. The bridge was constructed in 1927 to carry an existing county road over the busy rail junction and the river. The setting is undistinguished and does not maintain its historic integrity. Most of the railroad-related structures have been removed, and the rail lines are no longer operable north of Franklin. A short portion of the former L&H and NYS&W tracks are maintained by Conrail as a lightly used branch line.

PHOTO: 1903:20-24 (08/92)

REVISED BY (DATE):

QUAD: Franklin

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900E10	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	SCOTT ROAD OVER WALLKILL RIVER			FACILITY	SCOTT ROAD		
TOWNSHIP	FRANKLIN BOROUGH			DESIGN	PRATT		
TYPE	PNY TRUSS	LENGTH	37 ft	WIDTH	14.2 ft		
# SPANS	1	MATERIAL	Steel				
CONSTRUCTION DT	1890ca	ALTERATION DT					
DESIGNER/PATENT	UNKNOWN			SOURCE STYLE	BUILDER UNKNOWN		

SETTING / CONTEXT The bridge carries a 1-lane, 2-way road over a small stream in a sparsely-developed wooded residential area of single-family homes built in the 1950s. A New York Susquehanna and Western Railroad track crosses the road at grade-level about 50' from the bridge.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Individually Eligible.
CONSULT DOCUMENTS SHPO Finding 8/2/90, Letter 6/30/95.

SUMMARY The pin-connected Pratt with counters pony truss bridge with riveted floorbeams is supported on stone abutments. The deck is asphalt filled metal deck pans. Alterations are limited to repair plates welded at the base of the end inclined members and guide rail added. The alterations to the truss are minor, and the span is distinguished because it is a well-preserved example of an increasing rare but once important bridge type.

INFORMATION

PHOTO: 1903:25-28 (08/92) REVISD BY (DATE): QUAD: Hamburg



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900G02	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.98
NAME & FEATURE INTERSECTED	CR 611 OVER PEQUEST RIVER			FACILITY	CR 611 (SPRINGDALE-TRANQUILITY ROAD)		
TOWNSHIP	GREEN TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED	MATERIAL	Steel		
# SPANS	1	LENGTH	57 ft	WIDTH	24 ft		
CONSTRUCTION DT	1939	ALTERATION DT		SOURCE	PLANS/INSCRIPTION		
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane county road over a small watercourse in a wooded sparsely-developed residential neighborhood of single-family homes dating from the late 1800s through the early 1900s.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on concrete abutments is enclosed by Sussex County standard-design 2-rail concrete railings. The encasement of the fascia stringers is panelled. One of over 25 stringer bridges in the county from the pre-World War II era, this span is a representative example of a common type in the state, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1907:26,27 (07/92) REVISED BY (DATE): QUAD: Tranquility

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1900G06 **CO** SUSSEX **OWNER** COUNTY **MILEPOINT** 2.86
NAME & FEATURE INTERSECTED CR 603 OVER EAST BRANCH OF PEQUEST RIVER **FACILITY** CR 603
TOWNSHIP GREEN TOWNSHIP
TYPE SLAB **DESIGN** **MATERIAL** Reinforced Concrete
SPANS 2 **LENGTH** 34 ft **WIDTH** 23.6 ft
CONSTRUCTION DT 1939 **ALTERATION DT** **SOURCE PLANS**
DESIGNER/PATENT HARVEY SNOOK, CO. ENGINEER **BUILDER** UNKNOWN

SETTING / CONTEXT The bridge carries a 2-lane highway over a small stream in a wooded rural area proximate to farm land.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The 2-span continuous concrete slab bridge supported on concrete abutments and pier has 2-rail concrete railings common to county bridges of this era. Guide rail was added in front of the railings. One of over 10 pre-WW II slab bridges in the county, the span is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1901:43-44 (08/92) REVISED BY (DATE): QUAD: Tranquility

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900G12	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	HENRY ROAD OVER NJ CUTOFF DL&W RR			FACILITY	HENRY ROAD		
TOWNSHIP	GREEN TOWNSHIP						
TYPE	DECK ARCH	DESIGN	ELLIPTICAL			MATERIAL	Reinforced Concrete
# SPANS	1	LENGTH	116 ft	WIDTH	18 ft		
CONSTRUCTION DT	1911	ALTERATION DT				SOURCE	INSCRIPTION
DESIGNER/PATENT	DL&W OFFICE OF ENGINEERING			BUILDER	WALTER H. GAHAGAN		

SETTING / CONTEXT The bridge carries a narrow 2-lane road in a wooded undeveloped area over the abandoned r-o-w for the New Jersey Cutoff of the Delaware Lackawanna & Western Railroad. The Cutoff was constructed to improve transporting anthracite coal from Pennsylvania to markets east. A significant engineering achievement, the line was constructed with major cuts and fills

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No

CONSULT STATUS Not Individually Eligible. Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District, Eligible. Contributing.

CONSULT DOCUMENTS SHPO Opinion 3/22/94, Letter 03/12/01.

SUMMARY The reinforced concrete deck arch bridge supported on a concrete substructure is constructed on a skew. High custom concrete balustrades flank both sides of the span. One of over 17 concrete arch bridges constructed for the NJ portion of the rail line, this span is not individually eligible for listing in the National Register of Historic Places. It is historically and technologically significant as a contributing resource of the DL&W Railroad New Jersey Cutoff Historic District in Sussex and Warren Counties under Criteria A and C. The cutoff is a technologically significant engineering achievement noted for its use of reinforced concrete for bridges and structures and for completely grade separating the railroad and highway crossings

INFORMATION **BIBLIOGRAPHY:**
 "The New Cut-off Line of the Lackawanna Railroad", Wheaton, F.L., Engineering News, Vol.60, No.7, August 13, 1908.
 Short summary of DL&W Cut-off, Engineering News, Vol.60, No.3, July 16, 1908. pg.72.
 "Some Concrete Culverts and Small Bridges on the Slateford-Hopatcong Cut-off of the Delaware, Lackawanna & Western R.R.", Engineering News, Vol.62, No.14, September 30, 1909.
 Condit, Carl W., American Building Art The Twentieth Century, 1961.
 Taber, Thomas Townsend, The Delaware, Lackawanna & Western Railroad in the Nineteenth Century. 1977.
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 Lefferts, H. Leedom Jr., and Piefer, David R., Northwest New Jersey: An Inventory and History of Historic Engineering and Industry. 1979.

Physical Description: The skewed reinforced concrete elliptical deck arch bridge with a high rise is flanked by high concrete balustrades with an oval piercing pattern. The date of construction, 1911, is inscribed in the fascia. The well-proportioned span appears unaltered.

Historical and Technological Significance: The deck arch bridge constructed in 1911, is not individually distinguished, but it is significant because it was built as part of the construction of the New Jersey Cut-Off of the Delaware, Lackawanna & Western RR. The New Jersey Cut-Off, built in 1908-1911, is historically and technologically distinguished in the areas of engineering and transportation (Criteria A, C). The cut-off is an important engineering accomplishment of the early 20th century. The Delaware, Lackawanna & Western RR (DL&W) designed and built the line to improve the efficiency of train travel across the mountainous terrain of northwestern New Jersey. The decision to exclusively use reinforced concrete for all structures along the route was a pioneering action that attracted the attention of the engineering profession. The design and construction of a railroad that rises and falls just eleven feet over its length of 28.45 miles while crossing the mountains and valleys of northwestern New Jersey is remarkable even today. The railroad's use of reinforced concrete for all of the structures built along the road did much to prove the material to be as strong and durable as the engineers of the early-20th century had anticipated. The DL&W also made full use of the moldable qualities of the material, designing not just functional structures, but also aesthetically pleasing ones that enhance the beauty of the railroad. The right-of-way of the New Jersey Cut-Off and the reinforced concrete structures along it are an important part of the history of transportation in northwestern New Jersey.

The Delaware, Lackawanna and Western Railroad (DL&W), composed of a network of smaller railroads in Pennsylvania, New York and New Jersey, was formed in 1853 for the purpose of moving anthracite coal from the mining regions of northeastern Pennsylvania to market locations. It started from the merger of the Liggett's Gap RR and the Delaware & Cobbs Gap RR, which had been chartered and developed around 1850 by parties interested in carrying the coal to the Erie RR to the west and to the Delaware River to the east.

As the anthracite coal mining industry grew, so did the desire to increase the access to markets. The DL&W began to acquire other rail lines like the Syracuse, Binghamton & New York RR and the Utica, Chenango & Susquehanna RR, and thus extending their operations to the north and east. Often these acquisitions required the development of new right-of-ways like the Valley and Greene Railroads to connect newly acquired lines with existing DL&W trackage.

In reaching to the east the DL&W needed a connection in New Jersey. They incorporated the Warren Railroad in the 1851 to carry trains from the Delaware River at Columbia (Warren County, NJ) to Central Railroad of New Jersey tracks in Hampton (Hunterdon County, NJ). From there the coal could be moved eastward to Elizabethport (near Newark, NJ). Commuters also traveled this route to get to New York City. In the late 1860s the DL&W became dissatisfied with the CNJ connections and sought their own access to the New York markets. In 1868 they leased the Morris & Essex RR, which was developed in the 1830s and 1840s in Morris, Essex and Hudson Counties and the 1850s in Warren County. The M&E crossed New Jersey from Hoboken on the Hudson River to Phillipsburg on the Delaware River. Though the DL&W controlled several railroads (like the M&E, Warren, Valley, etc.), each was operated separately until 1899, when new DL&W president William Truesdale centralized control of the company. This move allowed for increased efficiency for the railroad as a whole, though some of the divisions would lose business (All background information gathered from Taber, 1977).



NEW JERSEY HISTORIC BRIDGE DATA

In seeking a more efficient, less circuitous route across western New Jersey to replace the former Warren Railroad right-of-way, the DL&W considered three plans (Taber and Taber, 1980:34-36). The plan chosen was that of what we know as the New Jersey Cut-off, a completely new line that would include massive cuts and fills to virtually eliminate grade changes. The existing line was nearly 40 miles long, had 57 curves comprising almost 13 miles of track, and a maximum grade of 60.2 feet per mile with a total rise and fall of 248 feet. The new layout limited the number and degree of curves and saved over 11 miles of track from the circuitous old line. This was the most expensive choice, costing \$11,065,511.43 when completed (Taber and Taber, 1980:39), but the anticipated benefits for the railroad outweighed the cost.

Under the direction of DL&W Chief Engineer George Ray, layout and design of the cut-off began. The line was to be 28.45 miles long, with a total rise and fall of just 11 feet and less than 5 miles of curved track. The new route would require 73 structures, including two massive viaducts, twelve overhead highway bridges and numerous crossings of roads and minor watercourses. Over 14 million cubic yards of both cut and fill were needed to create the relatively flat crossing of the hills and valleys of northwestern New Jersey (Taber and Taber, 1980:36).

Mr. Ray decided that reinforced concrete would be used for all structures along the route. This was the first time such a decision was made, causing the nickname of the "reinforced concrete railroad" to be used by the engineering profession when discussing the cut-off (Taber and Taber, 1980:36). Reinforced concrete was a state-of-the-art building material with yet unknown ultimate capabilities. It was thought to be as strong and durable as stone, and seemingly more permanent than wood or even steel.

The DL&W chose to use similar structures for similar uses along the line. Where highway bridges were needed to cross their tracks, they designed reinforced concrete deck arch bridges, a bridge type that was capable of relatively long spans while providing dynamic and graceful forms. Eleven deck arches were built in New Jersey, all of them single span structures with one of two types of balustrades. Though design adjustments had to be made for roadway alignment and foundation conditions, the bridges are very similar structures. A three-span deck arch bridge was built in Pennsylvania at Slateford, near the junction of the cut-off with the old line.

Reinforced concrete arch tunnels were constructed where the cut-off crossed over roads or small waterways. These structures often supported high fill embankments as the cut-off crossed a valley. Over 35 of these structures were built along the line. Slab-roofed tunnels and box culverts were also built to carry the right-of-way over roads and streams.

The largest structures along the line were the multi-span viaducts, open spandrel arch bridges that spanned valleys and crossed larger water courses. Around the turn of the century, reinforced concrete arches were generally limited to relatively short and often single span bridges. The dead load carried by the arches was reduced with the introduction of open spandrel arches. The lighter structures were capable of longer spans and more aesthetically pleasing large bridges. The Walnut Lane bridge (1906-8) over Wissahickon Creek in Philadelphia was a forerunner of the type, though it used virtually no steel reinforcement in the two ribs (Condit, 1961:198). The use of reinforcement made the possibilities even greater. The length and number of spans increased to create massive structures that dominated the landscape.

The Delaware River Viaduct at Slateford, Pennsylvania, spans the river as well as the highways following the river on each side. It is 1,450 feet long and carries trains 65 feet above the water. The nine span structure has seven open spandrel arches and two deck arch approach spans on the Pennsylvania end. The longest spans are those which span the river, five of which are 150 feet at the springing line.

The Paulins Kill Viaduct in Hainesburg, New Jersey is slightly shorter than the Delaware River Bridge, being only 1100 feet long, but it is more graceful and magnificent as it rises 115 feet above the valley floor. It passes over the Paulins Kill River, the New York, Susquehanna and Western Railroad and the valley they run through. This seven span structure had five spans of 120 feet and two of 100 feet. It was the most impressive structure on the DL&W main line prior to the building of the Tunkhannock Viaduct in Nicholson, Pennsylvania, built less than five years later on a similar project, the Nicholson Cut-Off.

The New Jersey Cut-Off was divided into sections for bidding. Seven contractors were each awarded one section of the line, including contractors from as far away as Billings, Montana and Roanoke, Virginia. Each contract included all clearing, grading and masonry construction (Wheaton, 1908).

Uncommon methods were used for the construction of the fills along the route. While the traditional method of building a wooden trestle to run dumping trains on was used for most fills, tracking was hung from suspended cables for the fills of greater magnitude. Dumping trains would carry fill onto the suspended tracks and dump the fill material from there. Most of the fill used on the cutoff was taken from the many cuts that were made, but even that was not enough. The DL&W bought 760 acres of farm land from which the contractors could dig additional fill. Five million pounds of dynamite was used to make the cuts. The Pequest Fill was the largest along the cut-off and in 1908 was claimed to be the "largest railway embankment ever made" (Engineering News, 7/16/1908:72). It was over 3 miles long and was up to 140 feet high. Over 6.5 million cubic yards of fill were necessary to reach the proper grade on this fill (Taber and Taber, 1980:36).

In addition to its engineering significance, the right-of-way ranks historically as one of the most significant in the state, owing to the impact moving coal across the state had on the development of transportation systems within New Jersey. The Lehigh Valley Railroad played a significant role in the development of transportation and transportation-driven development in the northern half of the state, and the cut-off stands as one of the most ambitious remnants of the coal era in the state.

Boundary Description and Justification: The significance of this structure is based on its historic association and physical connection with a right-of-way that is both historically and technologically important. The boundary is limited to the 28.5 mile long right-of-way of the DL&W's New Jersey Cut-Off.

PHOTO: 1907:28-29 (07/92)

REVISED BY (DATE):

QUAD: Tranquility

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900G13	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 611 OVER NJ CUTOFF OF DL&W RR			FACILITY	CR 611		
TOWNSHIP	GREEN TOWNSHIP						
TYPE	DECK ARCH	DESIGN	ELLIPTICAL			MATERIAL	Reinforced Concrete
# SPANS	1	LENGTH	103 ft	WIDTH	18 ft		
CONSTRUCTION DT	1911	ALTERATION DT				SOURCE	INSCRIPTION
DESIGNER/PATENT	DL&W OFFICE OF ENGINEERING			BUILDER	WALTER H. GAHAGAN		

SETTING / CONTEXT The bridge carries a narrow 2-lane county road over the abandoned NJ Cutoff r-o-w in a wooded undeveloped area with a residential neighborhood of single-family homes dating from the early 1900s to the 1950s on one side of the span. The abandoned Greendell concrete railroad station is about 150' east of the bridge. The NJ Cutoff was a significant engineering achievement which was constructed with major cuts and fills, and avoided creating any highway railroad grade crossings along its 28.45 mile length.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No

CONSULT STATUS Not Individually Eligible. Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District, Eligible. Contributing.

CONSULT DOCUMENTS SHPO Opinion 3/22/94, Letter 03/12/01.

SUMMARY The skewed single-span concrete arch bridge supported on a concrete substructure is flanked by high concrete balustrades. One of over 17 arch spans on the NJ portion of the route, the bridge is a good example of its type, and is historically significant because it is associated with the construction of the 1908-11 NJ Cutoff of the DL&W RR. The cutoff is a technologically significant engineering achievement noted for its use of reinforced concrete for bridges and structures and for completely grade separating the railroad and highway crossings. The bridge is not individually eligible for listing in the National Register of Historic Places but is eligible as a contributing element of the Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District under Criteria A and C.

INFORMATION
BIBLIOGRAPHY:
 "The New Cut-off Line of the Lackawanna Railroad", Wheaton, F.L., Engineering News, Vol.60, No.7, August 13, 1908.
 Short summary of DL&W Cut-off, Engineering News, Vol.60, No.3, July 16, 1908. pg.72.
 "Some Concrete Culverts and Small Bridges on the Slateford-Hopatcong Cut-off of the Delaware, Lackawanna & Western R.R.", Engineering News, Vol.62, No.14, September 30, 1909.
 Condit, Carl W., American Building Art The Twentieth Century, 1961.
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 Lefferts, H. Leedom Jr., and Piefer, David R., Northwest New Jersey: An Inventory and History of Historic Engineering and Industry. 1979.

Physical Description: The reinforced concrete deck arch bridge spans 103' and carries an 18' road. The abandoned Greendell concrete railroad station (not included in the survey but observed as a potentially historic resource) is located about 150' east of the bridge. No plans for the span were located but it appears unaltered. The fascia is inscribed with the date of construction, 1911.

Historical and Technological Significance: The 1911 deck arch bridge is not individually distinguished, but it is significant because it was built as part of the original construction of the New Jersey Cut-Off of the Delaware, Lackawanna & Western RR. The New Jersey Cut-Off, built in 1908-1911, is historically and technologically distinguished in the areas of engineering and transportation (Criteria A, C). The cut-off is an important engineering accomplishment of the early 20th century. The Delaware, Lackawanna & Western RR (DL&W) designed and built the line to improve the efficiency of train travel across the mountainous terrain of northwestern New Jersey in Warren, Sussex, and Morris counties from Slateford, Pennsylvania to the DL&W mainline near Lake Hopatcong. The design and construction of a railroad that rises and falls just eleven feet over its length of 28.45 miles while crossing the mountains and valleys of northwestern New Jersey is remarkable even today. The decision to use reinforced concrete exclusively for all structures along the route was a pioneering action that attracted the attention of the engineering profession. The railroad's use of reinforced concrete did much to prove the material to be as strong and durable as the engineers of the early-20th century had anticipated. The DL&W also made full use of the moldable qualities of the material, designing not just functional structures, but also aesthetically pleasing ones that enhance the beauty of the railroad.

Sixteen structures are included in the NJDOT Historic Bridge Survey, but other structures, including viaducts, tunnels, and stations, were observed within Warren and Sussex counties. The structures not included in this survey appear to have integrity consistent with those bridges and tunnels that are included.

The New Jersey Cutoff is the culmination of over 55 years of efforts by the company to improve its route across New Jersey to New York City. The Delaware, Lackawanna and Western Railroad (DL&W), composed of a network of smaller railroads in Pennsylvania, New York and New Jersey, was formed in 1853 for the purpose of moving anthracite coal from the mining regions of northeastern Pennsylvania to market locations. It started from the merger of the Liggett's Gap RR and the Delaware & Cobbs Gap RR, which had been chartered and developed around 1850 by parties interested in carrying the coal to the Erie RR to the west and to the Delaware River to the east.

As the anthracite coal mining industry grew, so did the desire to increase the access to markets. In reaching to the east the DL&W needed a connection in New Jersey. They incorporated the Warren Railroad in the 1851 to carry trains from the Delaware River at Columbia (Warren County, NJ) to Central Railroad of New Jersey tracks in Hampton (Hunterdon County, NJ). From there the coal could be moved eastward to Elizabethport (near Newark, NJ). Commuters also traveled this route to get to New York City. In the late 1860s the DL&W became dissatisfied with the CNJ connections and sought their own access to the New York markets. In 1868 they leased the Morris & Essex RR, which was developed in the 1830s and 1840s in Morris, Essex and Hudson counties and the 1850s in Warren County. The M&E crossed New Jersey from Hoboken to Phillipsburg on the Delaware River.

Though the DL&W controlled several railroads (like the M&E, Warren, Valley, etc.), each was operated separately until 1899, when new



NEW JERSEY HISTORIC BRIDGE DATA

DL&W president William Truesdale centralized control of the company. This move allowed for increased efficiency for the railroad as a whole. In addition to the reorganization, Truesdale undertook an ambitious plan to modernize the routes (All background information gathered from Taber, 1977).

In seeking a more efficient, less circuitous route to replace the old 1851 Warren Railroad right-of-way, the DL&W considered three plans to build a completely new route (Taber and Taber, 1980:34-36). The plan chosen was a completely new line that would include massive cuts and fills to virtually eliminate grade changes. The existing line was nearly 40 miles long, had 57 curves comprising almost 13 miles of track, and a maximum grade of 60.2 feet per mile with a total rise and fall of 248 feet. The new layout, known as the New Jersey Cut-Off, limited the number and degree of curves and saved over 11 miles of track from the circuitous old line. This was the most expensive choice, costing \$11,065,511.43 when completed (Taber and Taber, 1980:39), but the anticipated benefits for the railroad outweighed the cost.

Beginning in 1908 and under the direction of DL&W Chief Engineer George Ray, layout and design of the cut-off began. The line was to be 28.45 miles long, with a total rise and fall of just 11 feet and less than 5 miles of curved track. The new route would require 73 structures, including two massive viaducts, twelve overhead highway bridges and numerous crossings of roads and minor watercourses. Over 14 million cubic yards of both cut and fill were needed to create the relatively flat crossing of the hills and valleys of northwestern New Jersey (Taber and Taber, 1980:36).

Mr. Ray decided that reinforced concrete would be used for all structures along the route. This was the first time such a decision was made, causing the nickname of the "reinforced concrete railroad" to be used by the engineering profession when discussing the cut-off (Taber and Taber, 1980:36). Reinforced concrete was a state-of-the-art building material with yet unknown ultimate capabilities. It was thought to be as strong and durable as stone, and seemingly more permanent than wood or even steel.

Uncommon methods were used for the construction of the fills along the route. While the traditional method of building a wooden trestle to run dumping trains on was used for most fills, tracking was hung from suspended cables for the fills of greater magnitude. Dumping trains would carry fill onto the suspended tracks and dump the fill material from there. Most of the fill used on the cutoff was taken from the many cuts that were made, but even that was not enough. The DL&W bought 760 acres of farm land from which the contractors could dig additional fill. Five million pounds of dynamite was used to make the cuts. The Pequest Fill (Milepoint 55.85, Green Township, Sussex County) was the largest along the cut-off and in 1908 was claimed to be the "largest railway embankment ever made" (Engineering News, 1908:72). It was over 3 miles long and was up to 140 feet high. Over 6.5 million cubic yards of fill were necessary to reach the proper grade on this fill (Taber and Taber, 1980:36).

The DL&W chose to use similar structures for similar uses along the line. Where highway bridges were needed to cross their tracks, they designed reinforced concrete deck arch bridges, a bridge type that was capable of relatively long spans while providing dynamic and graceful forms. At least eleven deck arches were built in New Jersey, (1900G12, 1900G13, 1900K07, 1900C17, 2153166, 2153165, 2153164, 2153163, 2153162, 2153161, 2153160), all of them single span structures with one of two types of balustrades. Though design adjustments had to be made for roadway alignment and foundation conditions, the deck arch bridges are very similar structures.

Reinforced concrete arch tunnels were constructed where the cut-off crossed over roads or small waterways. These structures often supported high fill embankments as the cut-off crossed a valley. Over 35 of these structures were built along the line, and several of them are included in the Historic Bridge Survey (Wasigan and Simpson roads in Warren County, 2117152, and 1911155 in Sussex County). Slab-roofed tunnels and box culverts were also built to carry the right-of-way over roads and streams (1900C18).

The largest structures along the line were the two multi-span viaducts; the Delaware River Viaduct (2114159) in Knowlton Township and the Paulins Kill Viaduct (Milepoint 70.63, near Hainesburg in Knowlton Township). Both are open spandrel arch bridges that span valleys and larger water courses. The 9-span Delaware River Viaduct crosses the river as well as the highways that parallel it on both sides. It is 1,450 feet long and carries trains 65 feet above the river. The nine span structure has seven open spandrel arches and two deck arch approach spans on the Pennsylvania end. The 7-span Paulins Kill Viaduct in Hainesburg (Warren County) is 1100 feet long, but it is more graceful and magnificent as it rises 115 feet above the valley floor. It passes over the Paulins Kill River, the New York, Susquehanna and Western Railroad and the valley they run through (viaduct not included in the bridge survey because no roadway is associated with it). It was the most impressive structure on the DL&W main line prior to the building of the Tunkhannock Viaduct in Nicholson, Pennsylvania, completed in 1915.

Around the turn of the century, reinforced concrete arches were generally limited to relatively short and often single span bridges. The dead load carried by the arches was reduced with the introduction of open spandrel arches. The lighter structures were capable of longer spans and more aesthetically pleasing large bridges. The Walnut Lane bridge (1906-8) over Wissahickon Creek in Philadelphia was a forerunner of the type, though it used virtually no steel reinforcement in the two ribs (Condit, 1961:198). The use of reinforcement made the possibilities even greater. Under Ray's direction, the length and number of spans increased to create massive structures that dominated the landscape.

The New Jersey Cut-Off was divided into sections for bidding. Seven contractors were each awarded one section of the line, including contractors from as far away as Billings, Montana and Roanoke, Virginia. Each contract included all clearing, grading and masonry construction (Wheaton, 1908).

In addition to its engineering significance, the railroad right-of-way ranks historically as one of the most significant in the state, owing to the impact moving coal across the state had on the development of transportation systems within New Jersey. The Lehigh Valley Railroad played a significant role in the development of transportation and transportation-driven development in the northern half of the state, and the cut-off stands as one of the most ambitious remnants of the coal era in the state.

In summation, the viaducts, tunnels, overpasses, cuts, and fills on the New Jersey Cut-Off (1908-1911) form part of a unified design that was, and still is, one of the most remarkable engineering achievements of the early 20th century in the region. Furthermore, the New Jersey Cut-Off is one of the most visible remnants of the DL&W, and is illustrative of the history of one of the largest movers of coal that contributed to the transportation-driven economic growth of the northern half of the state. The New Jersey Cut-Off is a significant part of



NEW JERSEY HISTORIC BRIDGE DATA

the western New Jersey historic landscape and transportation systems.

Boundary Description and Justification: The significance of the structure is based, in part, on its historic association and physical connection with a right-of-way that is both historically and technologically important. In New Jersey, the potential historic corridor appears to be limited to the railroad right-of-way. The potential historic corridor is approximately 28 miles long stretching from the Delaware River to the eastern junction at Hopatcong, Morris County. The New Jersey Cut-Off's western junction is in Slateford, Pennsylvania on the west bank of the Delaware River. The entire route and all its related structures were not surveyed as part of this project, but those portions of the route that were surveyed or observed as part of the 1991-1993 Historic Bridge Survey have integrity of setting and original design and appear to representative of the overall state of preservation and completeness of the route in Sussex and Warren counties.

PHOTO: 1907:30-32 (07/92)

REVISED BY (DATE):

QUAD: Tranquility

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900H03	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 622 OVER PAULINS KILL LAKE			FACILITY	CR 622		
TOWNSHIP	HAMPTON TOWNSHIP						
TYPE	THRU GIRDER	DESIGN	PARTIALLY ENCASED	MATERIAL	Steel		
# SPANS	1	LENGTH	77 ft	WIDTH	20.7 ft		
CONSTRUCTION DT	1926	ALTERATION DT		SOURCE PLANS			
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane road over a lake in a wooded area. The lake is bordered by boat ramps and it is a fishing area.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The single-span thru girder with floorbeams bridge is supported on concrete abutments. The floorbeams are encased. No alterations are visible. The span is a representative example of a common type, but it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1901:13-14 (08/92)

REVISED BY (DATE):

QUAD: Newton West

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900H05	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	PARSONS ROAD OVER PAULINS KILL			FACILITY	PARSONS ROAD		
TOWNSHIP	HAMPTON TOWNSHIP						
TYPE	PNY TRUSS	DESIGN	PRATT	MATERIAL	Steel		
# SPANS	1	LENGTH	50 ft	WIDTH	11.8 ft		
CONSTRUCTION DT	1900ca	ALTERATION DT	Demolished	SOURCE STYLE			
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a single-lane, 2-way street over a small stream in a wooded sparsely developed area. An abandoned farm and farmhouse is located at one side of the bridge. The bridge was removed after the 8/92 field inspection.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Bridge was Removed.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The Pratt pin-connected pony truss bridge is supported on repointed stone abutments. Guide rail has been added in front of the trusses. Alterations are limited to welded repairs at the intersection of the counters and welds at the railing. One of 6 Pratt pony truss bridges in the county, the span is a well-preserved example of an uncommon bridge type, and it is distinguished. The span has been removed by the county.

INFORMATION

PHOTO: 1901:15-18 (08/92)

REVISED BY (DATE):

QUAD: Newton West

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900H92	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	GINGERBREAD CASTLE ROAD OVER WALLKILL RIVER			FACILITY	GINGERBREAD CASTLE ROAD		
TOWNSHIP	HAMBURG BOROUGH			DESIGN	ENCASED		
TYPE	STRINGER	LENGTH	33 ft	WIDTH	16.3 ft		
# SPANS	2	DESIGN	ENCASED			MATERIAL	Steel
CONSTRUCTION DT	1920ca	ALTERATION DT				SOURCE	STYLE/COUNTY RECORDS
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 1-lane of a 2-way road over a mill race. The bridge was built as part of the 1921-1931 expansion of the Wheatsworth Co. biscuit factory. Owner F. H. Bennett constructed fanciful medieval concrete factory buildings and the Gingerbread Castle amusement park to attract tourists. The factory ceased operations in the 1970s but portions are still operated as an amusement park. The site, which is well-preserved, appears to be a potential NR historic district.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible. Potential Wheatsworth Historic District. Contributing.
CONSULT DOCUMENTS SHPO Letter 03/12/01

SUMMARY The 2-span encased stringer bridge set on a concrete substructure is flanked on one side with a metal railing with medieval-style posts and on the other side by a concrete balustrade. Original plans for the bridge were not located, but it appears to be stylistically and structurally associated with the 1920s expansion of the Wheatsworth factory. The bridge is not individually eligible, but would be a contributing element to the Wheatsworth Historic District, if it were determined NR eligible under Criteria A and C.

INFORMATION

Bibliography:
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 Sussex County Library. "Gingerbread Castle." Vertical Files.

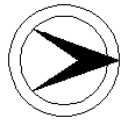
Physical Description: The skewed two-span 33'-long encased stringer bridge rests on concrete abutments and pier. The abutments form part of the retaining walls of the mill tail race. The bridge has two-high pipe railings set between concrete posts with bold paling caps on the downstream side opposite the mill and a simply detailed concrete balustrade with a rectangular pattern on the side adjacent the mill. The structure appears unaltered.

Historical and Technological Significance: The encased stringer bridge is historically associated with a former factory site and amusement park of the Wheatsworth Company. The entire site appears to be a potentially eligible historic site (Criterion A and C). The factory that produced whole-grain flour for biscuits is notable for its masonry and reinforced-concrete construction that includes fanciful medieval-style architectonic features such as asymmetrical windows and doors, balconies, and rounded arches. Adjacent the multi-story factory buildings is a reinforced-concrete construction fairy-tale Gingerbread Castle built by the owners of the mill as an amusement park for children and tourists. The amusement park features several other fanciful masonry and reinforced-concrete buildings and a small lake on the opposite side of Gingerbread Castle Road. The factory and amusement park are technologically significant illustrations of with the moldable qualities of reinforced-concrete in construction of a variety of building types. Gate posts have ceramic tile mosaics illustrating activities that once occurred at the mill. The factory and park appear to constitute a potential National Register historic site, and the bridge because it matches in style and dates to a significant period of the factory's and park's development would be a contributing element. The bridge spans the mill tail race adjacent to the factory building. The span is not individually significant.

In 1921 Wheatsworth Co. owner F. H. Bennett purchased the factory and expanded operations. Industrial activity at the site dated back to the mid-18th century when the Sharp family established an iron forge around which grew the village of Hamburg. In the mid-19th-century the site was used as a distillery and later as a lime kiln. Bennett incorporated a surviving stone mill building in his factory design, but little other physical evidence of earlier industrial activities is visible at the site. The Wheatsworth Company operated the factory from 1921 to 1931 and in the late 1920s began construction of the Gingerbread Castle as a tourist attraction and whimsical tribute to popular children's fairy tales. The amusement's construction coincided with improvements to the State Highway system that were attracting increasing numbers of automobile vacationers to the region. The factory property borders NJ Route 23. In 1931 the factory was sold to the National Biscuit Company, and in 1943 the Plastoid Corporation purchased the facility. Factory operations ceased in 1978, but the amusement park continues to be open to the public. The site retains a high degree of integrity.

Boundary Description and Justification: The bridge is not individually significant, but it is significant for its association with the Wheatsworth Co. factory and Gingerbread Castle amusement park. If the historic site were determined a National Register eligible property, the bridge would be within the boundaries of the eligible property and it would be a contributing resource.

PHOTO: 1903:31-33; 432:9-17 (08/92 JPH (5/96) **REVISED BY (DATE):** **QUAD:** Hamburg



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900J05	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 625 OVER NEW YORK SUSQUEHANNA AND WESTERN RR			FACILITY	CR 625 (SILVER LAKE ROAD)		
TOWNSHIP	HARDYSTON TOWNSHIP						
TYPE	THRU GIRDER	DESIGN	JACK ARCH (CONCRETE)	MATERIAL	Steel		
# SPANS	1	LENGTH	42 ft	WIDTH	17.5 ft		
CONSTRUCTION DT	1905	ALTERATION DT		SOURCE	NJDOT		
DESIGNER/PATENT	NYS & W RR OFFICE OF ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 1-lane of a 2-way county road over a lightly-used track, part of the New York Susquehanna and Western Railroad. NJ 23 is about 1000' from the bridge to the west and a post-WW II residential neighborhood is to the east.

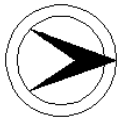
1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Finding 02/24/93

SUMMARY The plate thru girder with floorbeams bridge supported on concrete abutments cut into a ledge has a concrete jack arches between the floorbeams. Guide rails were added atop each girder. The bridge is a representative example of a common type and design. Bridges with concrete jack arches are frequent in the northern half of the state. This span is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1907:42-44 (07/92) REVISED BY (DATE): QUAD: Franklin

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900J06	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 515 OVER PEQUANNOCK RIVER			FACILITY	CR 515		
TOWNSHIP	HARDYSTON TOWNSHIP						
TYPE	SLAB	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	1	LENGTH	23 ft	WIDTH	35.2 ft		
CONSTRUCTION DT	1943	ALTERATION DT	1966	SOURCE PLANS			
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane road with shoulders over a small stream in a wooded undeveloped area.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The reinforced concrete slab bridge is supported on stone abutments from a previous span. They were widened on the west with concrete extensions for prestressed concrete beams in 1966. The original railings were replaced with guide railings. One of over 10 pre-WW II slab bridges in the county, the altered span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1904:6-7 (08/92) REVISED BY (DATE): QUAD: Franklin

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
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NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900K07	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 605 OVER NJ CUTOFF OF DL&W RR			FACILITY	CR 605		
TOWNSHIP	HOPATCONG BOROUGH						
TYPE	DECK ARCH	DESIGN	ELLIPTICAL			MATERIAL	Reinforced Concrete
# SPANS	1	LENGTH	85 ft	WIDTH	17.7 ft		
CONSTRUCTION DT	1911	ALTERATION DT					
DESIGNER/PATENT	DL&W OFFICE OF ENGINEERING			SOURCE	INSCRIPTION		
				BUILDER	TIMONTHY BURKE		

SETTING / CONTEXT The bridge carries a one-lane of a two-directional road in a wooded area over the abandoned New Jersey Cutoff of the Delaware Lackawanna & Western Railroad. The NJ Cutoff was constructed to improve transporting anthracite coal from eastern Pennsylvania to markets east. A significant engineering achievement, the line was constructed with major cuts and fills, and avoided creating any highway railroad grade crossings along its 28.45 mile length.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Individually Eligible. Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District, Eligible. Contributing.
CONSULT DOCUMENTS SHPO Opinion 3/22/94 05/05/94, Letter 03/12/01.

SUMMARY The deck arch bridge supported on scored concrete abutments is flanked by standard design concrete balustrades. Both approaches to the bridge are on a horizontal curve. The bridge is significant because it is one of the original reinforced concrete bridges built as part of the 1908-11 New Jersey Cutoff of the DL&W RR, a technologically significant engineering achievement noted for its use of reinforced concrete for bridges and structures and for completely grade separating the railroad and highway crossings. The bridge is individually eligible for listing in the National Register of Historic Places under Criterion C, and is a contributing element of the Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District under Criteria A and C.

INFORMATION **BIBLIOGRAPHY:**
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 Short summary of DL&W Cut-off, Engineering News, Vol.60, No.3, July 16, 1908. pg.72.
 "Some Concrete Culverts and Small Bridges on the Slateford-Hopatcong Cut-off of the Delaware, Lackawanna & Western R.R.", Engineering News, Vol.62, No.14, September 30, 1909.
 Condit, Carl W., American Building Art The Twentieth Century, 1961.
 Taber, Thomas Townsend, The Delaware, Lackawanna & Western Railroad in the Nineteenth Century. 1977.
 Taber, T.T. and Taber, T.T. III, The Delaware, Lackawanna & Western Railroad in the Twentieth Century, Vols. I and II. 1980.
 Lefferts, H. Leedom Jr., and Piefer, David R., Northwest New Jersey: An Inventory and History of Historic Engineering and Industry. 1979.

Physical Description: The reinforced concrete elliptical arch bridge spans 85' and carries a 17.7' wide county road. The arch with a high rise extends from a scored concrete substructure, and the road is flanked by standard-design concrete balustrades. The span appears unaltered. The date of construction, 1911, is inscribed in the fascia.

Historical and Technological Significance: The elliptical arch bridge, constructed in 1911, is not individually eligible, but it is significant because it was built as part of the construction of the New Jersey Cut-Off of the Delaware, Lackawanna & Western RR.

The New Jersey Cut-Off, built in 1908-1911, is historically and technologically distinguished in the areas of engineering and transportation (Criteria A, C). The cut-off is an important engineering accomplishment of the early 20th century. The Delaware, Lackawanna & Western RR (DL&W) designed and built the line to improve the efficiency of train travel across the mountainous terrain of northwestern New Jersey in Warren, Sussex, and Morris counties from Slateford, Pennsylvania to the DL&W mainline near Lake Hopatcong. The design and construction of a railroad that rises and falls just eleven feet over its length of 28.45 miles while crossing the mountains and valleys of northwestern New Jersey is remarkable even today. The decision to use reinforced concrete exclusively for all structures along the route was a pioneering action that attracted the attention of the engineering profession. The railroad's use of reinforced concrete did much to prove the material to be as strong and durable as the engineers of the early-20th century had anticipated. The DL&W also made full use of the moldable qualities of the material, designing not just functional structures, but also aesthetically pleasing ones that enhance the beauty of the railroad.

Sixteen structures are included in the NJDOT Historic Bridge Survey, but other structures, including viaducts, tunnels, and stations, were observed within Warren and Sussex counties. The structures not included in this survey appear to have integrity consistent with those bridges and tunnels that are included.

The New Jersey Cutoff is the culmination of over 55 years of efforts by the company to improve its route across New Jersey to New York City. The Delaware, Lackawanna and Western Railroad (DL&W), composed of a network of smaller railroads in Pennsylvania, New York and New Jersey, was formed in 1853 for the purpose of moving anthracite coal from the mining regions of northeastern Pennsylvania to market locations. It started from the merger of the Liggett's Gap RR and the Delaware & Cobbs Gap RR, which had been chartered and developed around 1850 by parties interested in carrying the coal to the Erie RR to the west and to the Delaware River to the east.

As the anthracite coal mining industry grew, so did the desire to increase the access to markets. In reaching to the east the DL&W needed a connection in New Jersey. They incorporated the Warren Railroad in the 1851 to carry trains from the Delaware River at Columbia (Warren County, NJ) to Central Railroad of New Jersey tracks in Hampton (Hunterdon County, NJ). From there the coal could be moved eastward to Elizabethport (near Newark, NJ). Commuters also traveled this route to get to New York City. In the late 1860s the DL&W became dissatisfied with the CNJ connections and sought their own access to the New York markets. In 1868 they leased the Morris & Essex RR, which was developed in the 1830s and 1840s in Morris, Essex and Hudson counties and the 1850s in Warren County. The M&E crossed New Jersey from Hoboken to Phillipsburg on the Delaware River.



NEW JERSEY HISTORIC BRIDGE DATA

Though the DL&W controlled several railroads (like the M&E, Warren, Valley, etc.), each was operated separately until 1899, when new DL&W president William Truesdale centralized control of the company. This move allowed for increased efficiency for the railroad as a whole. In addition to the reorganization, Truesdale undertook an ambitious plan to modernize the routes (All background information gathered from Taber, 1977).

In seeking a more efficient, less circuitous route to replace the old 1851 Warren Railroad right-of-way, the DL&W considered three plans to build a completely new route (Taber and Taber, 1980:34-36). The plan chosen was a completely new line that would include massive cuts and fills to virtually eliminate grade changes. The existing line was nearly 40 miles long, had 57 curves comprising almost 13 miles of track, and a maximum grade of 60.2 feet per mile with a total rise and fall of 248 feet. The new layout, known as the New Jersey Cut-Off, limited the number and degree of curves and saved over 11 miles of track from the circuitous old line. This was the most expensive choice, costing \$11,065,511.43 when completed (Taber and Taber, 1980:39), but the anticipated benefits for the railroad outweighed the cost.

Beginning in 1908 and under the direction of DL&W Chief Engineer George Ray, layout and design of the cut-off began. The line was to be 28.45 miles long, with a total rise and fall of just 11 feet and less than 5 miles of curved track. The new route would require 73 structures, including two massive viaducts, twelve overhead highway bridges and numerous crossings of roads and minor watercourses. Over 14 million cubic yards of both cut and fill were needed to create the relatively flat crossing of the hills and valleys of northwestern New Jersey (Taber and Taber, 1980:36).

Mr. Ray decided that reinforced concrete would be used for all structures along the route. This was the first time such a decision was made, causing the nickname of the "reinforced concrete railroad" to be used by the engineering profession when discussing the cut-off (Taber and Taber, 1980:36). Reinforced concrete was a state-of-the-art building material with yet unknown ultimate capabilities. It was thought to be as strong and durable as stone, and seemingly more permanent than wood or even steel.

Uncommon methods were used for the construction of the fills along the route. While the traditional method of building a wooden trestle to run dumping trains on was used for most fills, tracking was hung from suspended cables for the fills of greater magnitude. Dumping trains would carry fill onto the suspended tracks and dump the fill material from there. Most of the fill used on the cutoff was taken from the many cuts that were made, but even that was not enough. The DL&W bought 760 acres of farm land from which the contractors could dig additional fill. Five million pounds of dynamite was used to make the cuts. The Pequest Fill (Milepoint 55.85, Green Township, Sussex County) was the largest along the cut-off and in 1908 was claimed to be the "largest railway embankment ever made" (Engineering News, 1908:72). It was over 3 miles long and was up to 140 feet high. Over 6.5 million cubic yards of fill were necessary to reach the proper grade on this fill (Taber and Taber, 1980:36).

The DL&W chose to use similar structures for similar uses along the line. Where highway bridges were needed to cross their tracks, they designed reinforced concrete deck arch bridges, a bridge type that was capable of relatively long spans while providing dynamic and graceful forms. At least eleven deck arches were built in New Jersey, (1900G12, 1900G13, 1900K07, 1900C17, 2153166, 2153165, 2153164, 2153163, 2153162, 2153161, 2153160), all of them single span structures with one of two types of balustrades. Though design adjustments had to be made for roadway alignment and foundation conditions, the deck arch bridges are very similar structures.

Reinforced concrete arch tunnels were constructed where the cut-off crossed over roads or small waterways. These structures often supported high fill embankments as the cut-off crossed a valley. Over 35 of these structures were built along the line, and several of them are included in the Historic Bridge Survey (Wasigan and Simpson roads in Warren County, 2117152, and 1911155 in Sussex County). Slab-roofed tunnels and box culverts were also built to carry the right-of-way over roads and streams (1900C18).

The largest structures along the line were the two multi-span viaducts; the Delaware River Viaduct (2114159) in Knowlton Township and the Paulins Kill Viaduct (Milepoint 70.63, near Hainesburg in Knowlton Township). Both are open spandrel arch bridges that span valleys and larger water courses. The 9-span Delaware River Viaduct crosses the river as well as the highways that parallel it on both sides. It is 1,450 feet long and carries trains 65 feet above the river. The nine span structure has seven open spandrel arches and two deck arch approach spans on the Pennsylvania end. The 7-span Paulins Kill Viaduct in Hainesburg (Warren County) is 1100 feet long, but it is more graceful and magnificent as it rises 115 feet above the valley floor. It passes over the Paulins Kill River, the New York, Susquehanna and Western Railroad and the valley they run through (viaduct not included in the bridge survey because no roadway is associated with it). It was the most impressive structure on the DL&W main line prior to the building of the Tunkhannock Viaduct in Nicholson, Pennsylvania, completed in 1915.

Around the turn of the century, reinforced concrete arches were generally limited to relatively short and often single span bridges. The dead load carried by the arches was reduced with the introduction of open spandrel arches. The lighter structures were capable of longer spans and more aesthetically pleasing large bridges. The Walnut Lane bridge (1906-8) over Wissahickon Creek in Philadelphia was a forerunner of the type, though it used virtually no steel reinforcement in the two ribs (Condit, 1961:198). The use of reinforcement made the possibilities even greater. Under Ray's direction, the length and number of spans increased to create massive structures that dominated the landscape.

The New Jersey Cut-Off was divided into sections for bidding. Seven contractors were each awarded one section of the line, including contractors from as far away as Billings, Montana and Roanoke, Virginia. Each contract included all clearing, grading and masonry construction (Wheaton, 1908).

In addition to its engineering significance, the railroad right-of-way ranks historically as one of the most significant in the state, owing to the impact moving coal across the state had on the development of transportation systems within New Jersey. The Lehigh Valley Railroad played a significant role in the development of transportation and transportation-driven development in the northern half of the state, and the cut-off stands as one of the most ambitious remnants of the coal era in the state.

In summation, the viaducts, tunnels, overpasses, cuts, and fills on the New Jersey Cut-Off (1908-1911) form part of a unified design that was, and still is, one of the most remarkable engineering achievements of the early 20th century in the region. Furthermore, the New Jersey Cut-Off is one of the most visible remnants of the DL&W, and is illustrative of the history of one of the largest movers of coal that



NEW JERSEY HISTORIC BRIDGE DATA

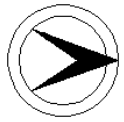
contributed to the transportation-driven economic growth of the northern half of the state. The New Jersey Cut-Off is a significant part of the western New Jersey historic landscape and transportation systems.

Boundary Description and Justification: The significance of the structure is based, in part, on its historic association and physical connection with a right-of-way that is both historically and technologically important. In New Jersey, the potential historic corridor appears to be limited to the railroad right-of-way. The potential historic corridor is approximately 28 miles long stretching from the Delaware River to the eastern junction at Hopatcong, Morris County. The New Jersey Cut-Off's western junction is in Slateford, Pennsylvania on the west bank of the Delaware River. The entire route and all its related structures were not surveyed as part of this project, but those portions of the route that were surveyed or observed as part of the 1991-1993 Historic Bridge Survey have integrity of setting and original design and appear to representative of the overall state of preservation and completeness of the route in Sussex and Warren counties.

PHOTO: 1903:9-10 (08/92 JPH (5/96))

REVISED BY (DATE):

QUAD: Stanhope



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900L07	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.22
NAME & FEATURE INTERSECTED	LAFAYETTE BEAVER RUN ROAD OVER PAULINS KILL		FACILITY	LAFAYETTE BEAVER RUN ROAD			
TOWNSHIP	LAFAYETTE TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED	MATERIAL	Steel		
# SPANS	1	LENGTH	57 ft	WIDTH	24 ft		
CONSTRUCTION DT	1938	ALTERATION DT			SOURCE	PLANS/INSCRIPTION	
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		
SETTING / CONTEXT	The bridge carries a 2-lane collector road over a shallow stream in an area of residential homes and farm land with structures dating from the 1940s through the 1970s.						

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge is supported on scored concrete abutments and constructed on a skew. The fascia stringers have paneled concrete encasement. The span is flanked by standard Sussex County design 2-rail concrete railings with guide rails attached. One of over 25 pre-WW II stringer bridges in the county, the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1906:40-41 (08/92) REVISED BY (DATE): QUAD: Newton East

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900M09	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	MILLVILLE ROAD OVER SHIMERS BROOK			FACILITY	MILLVILLE ROAD		
TOWNSHIP	MONTAGUE TOWNSHIP						
TYPE	STRINGER	DESIGN		MATERIAL	Steel		
# SPANS	1	LENGTH	22 ft	WIDTH	16.1 ft		
CONSTRUCTION DT	1930	ALTERATION DT	1980ca	SOURCE	NJDOT		
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 1-lane of a 2-lane street over a small stream in a wooded undeveloped area. The span is located within the boundaries of the Millville Historic and Archaeological District which is listed in the National Register. The district is significant for its water-powered industry with mills operated during the 18th and 19th century.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible. Listed. Millville Historic and Archaeological District. 01/30/1984. Noncontributing.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The short-span stringer bridge is supported on stone abutments from a previous span with concrete caps. The span has asphalt-filled deck pans, and it is flanked by guide rails which date to circa 1980. The altered span is not historically nor technologically noteworthy. It was built outside the 18th and 19th century period of significance of the historic district. It does not contribute to the district and is rated noncontributing.

INFORMATION

PHOTO: 1905:2,3 (08/92)

REVISED BY (DATE):

QUAD: Milford

NEW JERSEY DEPARTMENT OF TRANSPORTATION
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NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900M24	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	6.12	
NAME & FEATURE INTERSECTED	CR 653 OVER TRIBUTARY OF MILL BROOK			FACILITY	CR 653 (CLOVE ROAD)			
TOWNSHIP	MONTAGUE TOWNSHIP							
TYPE	SLAB	DESIGN					MATERIAL	Reinforced Concrete
# SPANS	2	LENGTH	28 ft	WIDTH	22.2 ft			
CONSTRUCTION DT	1936	ALTERATION DT					SOURCE	PLANS
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER				BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane county road with narrow shoulders over a small stream, and it borders wooded undeveloped land to one side, and a residential area dating from the 1910s to the 1920s to the other.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Finding 8/29/91

SUMMARY The 2-span continuous concrete slab bridge is supported on a concrete pier and stone abutments from a previous span. The bridge is bordered by standard Sussex County design 2-rail concrete railings. One of over 10 pre-1945 slab bridges in the county the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1905:40,41 (08/92) REVISD BY (DATE): QUAD: Port Jervis South



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900M25	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	7.16
NAME & FEATURE INTERSECTED	CR 653 OVER TRIBUTARY OF MILL BROOK			FACILITY	CR 653 (CLOVE ROAD)		
TOWNSHIP	MONTAGUE TOWNSHIP						
TYPE	SLAB	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	1	LENGTH	27 ft	WIDTH	22 ft		
CONSTRUCTION DT	1933	ALTERATION DT	1980ca	SOURCE PLANS			
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane county road over a small stream in a wooded area. A commercial building constructed in the 1930s is contiguous to the span.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Finding 12/05/90

SUMMARY The single-span reinforced concrete slab bridge supported on concrete abutments was constructed on a slight skew. The southwest wingwall was rebuilt, and the substructure and slab have concrete repairs. The bridge is bordered by modern guide rails. One of over 10 pre-1945 slab bridges in the county, the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1905:38,39 (08/92)

REVISED BY (DATE):

QUAD: Port Jervis South

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900007	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0	
NAME & FEATURE INTERSECTED	PASSAIC AVENUE OVER WALLKILL RIVER			FACILITY	PASSAIC AVENUE			
TOWNSHIP	OGDENSBURG BOROUGH							
TYPE	STRINGER	DESIGN	ENCASED				MATERIAL	Steel
# SPANS	1	LENGTH	47 ft	WIDTH	20 ft			
CONSTRUCTION DT	1928	ALTERATION DT	1980ca		SOURCE PLANS			
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER				BUILDER UNKNOWN			

SETTING / CONTEXT The bridge carries a 2-lane road over a stream in a wooded area about 200' east of the entrance to the Sterling Mining Co., now a museum. Sterling Hill was mined from 1877 until 1986. Ogdensburg developed to support the mine which is noted for its ore with brightly fluorescent minerals. The mine is a potential historic district, but this bridge is located outside the boundaries of the mining complex.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The skewed encased stringer bridge is supported on concrete abutments. The original railing was removed and replaced with guide rail in circa 1980. One of over 25 pre-WW II stringer bridges in the county, the altered span is an example of a common type, and it is not technologically innovative. The span was constructed during operation of the Sterling Hill mine, but it is not historically associated with the operations of the mine itself. It is outside the potential historic district.

INFORMATION

PHOTO: 1903:11-12 (08/92) REVISD BY (DATE): QUAD: Franklin

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900O08	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	KENNEDY AVE OVER WALLKILL RIVER			FACILITY	KENNEDY AVENUE		
TOWNSHIP	OGDENSBURG BOROUGH						
TYPE	STRINGER	DESIGN	PARTIALLY ENCASED			MATERIAL	Steel
# SPANS	1	LENGTH	22 ft	WIDTH	15.7 ft		
CONSTRUCTION DT	1920	ALTERATION DT	1980ca		SOURCE	NJDOT	
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		
SETTING / CONTEXT	The bridge carries a 1-lane, 2-way road over a small stream in a wooded, sparsely developed area. A late 19th century house is located contiguous to the bridge.						

1995 SURVEY RECOMMENDATION	Not Eligible	HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)	No
CONSULT STATUS	Not Individually Eligible.		
CONSULT DOCUMENTS	SHPO Letter 6/30/95		

SUMMARY The stringer bridge supported on a concrete substructure is flanked by guide railing placed in circa 1980. The underside of the deck is flush with the stringer bottom flanges so that the stringers are almost entirely encased. Tie rods are anchored through the fascia stringers, which are not encased. The span is neither technologically nor historically distinguished.

INFORMATION

PHOTO: 1903:13-14 (08/92)	REVISED BY (DATE):	QUAD: Franklin
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**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900P01	CO	SUSSEX	OWNER	STATE AGENCY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	BROOK ROAD OVER BIG FLAT BROOK			FACILITY	BROOK ROAD		
TOWNSHIP	SANDYSTON TOWNSHIP			DESIGN	PRATT		
TYPE	PNY TRUSS	LENGTH	46 ft	WIDTH	11.6 ft		
# SPANS	1	ALTERATION DT		SOURCE STYLE			
CONSTRUCTION DT	1890ca	BUILDER	UNKNOWN				
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 1-lane, 2-way street over a shallow stream in a wooded undeveloped area located within the Flat Brook-Roy Wildlife Management Area.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** Yes
CONSULT STATUS Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The pin-connected Pratt pony truss bridge supported on concrete abutments has a laminated timber deck. Alterations are limited to the addition of welded outriggers and steel railings were welded to the truss. The span is distinguished because it is a very well-preserved example of an important early metal truss bridge type. Located within undeveloped parkland, the integrity of the original setting has not been compromised. Date of construction and builder are undocumented.

INFORMATION Bibliography:
Sussex County Engineer's Office. Bridge Files.

Physical Description: The single-span pin-connected half-hip Pratt pony truss bridge supported on concrete abutments, spans 46' and carries an 11'6" wide road. The four-panel truss is composed of standard-design members. Upper chords are back-to-back channels with cover plate on the top and lattice on the bottom of the built-up box member. Bottom chords are pairs of rectangular section eye bar at center bays and circular section bars at end bays. Verticals are back-to-back angles joined by lattice. Diagonal members are pairs of square section bars, and counters are single circular section rods. Outriggers were welded to the truss at each panel point at unknown dates, and a steel channel guide rail has been welded to each inside truss face. The span has a laminated timber deck.

Historical and Technological Significance: The ca. 1890 Pratt pony truss bridge is a very well-preserved example of an increasingly uncommon bridge type (Criterion C). The span, although undocumented to date of construction and builder, is a virtually unaltered example of the most common late-19th century bridge type. It is one of four eligible pony truss spans in Sussex County (1900D07, Smith Mill Road, Frankford Twp.; 1900E10, Scott Road, Franklin Borough; 1900W06, Main Street, Walpack Township). The bridge is located within the undeveloped Flat Brook-Roy Wildlife Management Area, and the integrity of setting has not been compromised.

Through the third quarter of the 19th century, a variety of truss designs were developed and patented, but the one that proved to be the most economical, efficient, and easy to fabricate and erect in the field was the Pratt truss, which has the verticals in compression and the diagonals in tension. The truss was patented by Thomas and Caleb Pratt in 1844, and the earliest examples were a combination of wood (for the compression members) and iron (for tensile members). The Pratt truss went on through the century to become the most common design, and it was not until technological advances made it possible to execute reliable field riveted connections after about 1890 that the Warren truss superseded the pin-connected Pratts on the nations highways and byways.

Boundary Description and Justification: The bridge is rated individually eligible. The boundary is limited to the superstructure and substructure of the bridge itself.

PHOTO: 1902:32-35 (08/92) REVISED BY (DATE): QUAD: Culvers Gap



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900P21	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0		
NAME & FEATURE INTERSECTED	CR 645 (LAYTON ROAD) OVER LITTLE FLAT BROOK		FACILITY	CR 645					
TOWNSHIP	SANDYSTON TOWNSHIP								
TYPE	STRINGER	DESIGN						MATERIAL	Steel
# SPANS	1	LENGTH	33 ft	WIDTH	22.2 ft				
CONSTRUCTION DT	1936	ALTERATION DT	1960ca	SOURCE PLANS					
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN				

SETTING / CONTEXT The bridge carries a 2-lane road over a small stream in a sparsely developed wooded commercial and residential area. A house built in the late 1800s is located near the span, and the remaining structures in the area date from the 1920s to the 1950s.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The stringer bridge is supported on a concrete substructure. The original railings were removed and replaced with guide rails. The superstructure appears to have been replaced. Plans indicate the bridge was originally an encased stringer bridge. The span is an altered example of a common pre-WW II bridge type in the county, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1902:28-29 (08/92)

REVISED BY (DATE):

QUAD: Culvers Gap

NEW JERSEY DEPARTMENT OF TRANSPORTATION
 BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900P28	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0		
NAME & FEATURE INTERSECTED	DEGROAT ROAD OVER LITTLE FLAT BROOK			FACILITY	DEGROAT ROAD				
TOWNSHIP	SANDYSTON TOWNSHIP								
TYPE	STRINGER	DESIGN	ENCASED				MATERIAL	Steel	
# SPANS	1	LENGTH	39 ft	WIDTH	25.7 ft				
CONSTRUCTION DT	1942	ALTERATION DT						SOURCE	PLANS
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER					BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane road over a small stream in a wooded sparsely developed rural area adjacent to horse farms.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The slightly skewed encased stringer bridge supported on scored concrete abutments is flanked by standard design 2-rail concrete railings. The fascia stringers are finished with flat panels. Guide rail was added in front of the railings. Although an attractive and unaltered span, it is a representative example of a common county type and design and is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1902:40-41 (08/92) REVISD BY (DATE): QUAD: Milford

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900Q25	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	WEST MOUNTAIN ROAD OVER NY SUSQUEHANNA & WESTERN RR		FACILITY	WEST MOUNTAIN ROAD			
TOWNSHIP	SPARTA TOWNSHIP						
TYPE	STRINGER	DESIGN					
# SPANS	3	LENGTH	55 ft	WIDTH	14.4 ft	MATERIAL	Wood
CONSTRUCTION DT	1911	ALTERATION DT	1959, 1991		SOURCE	NJDOT	
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 1-lane 2-way street over a track of the New York Susquehanna & Western Railroad. The road provides access to Lake Grinnell, an early-20th century summer resort community of lakeshore cottages located east of the bridge. West of the bridge are a horse farm and post-1950 residences.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Individually Eligible.
CONSULT DOCUMENTS SHPO Finding 7/9/90, Letter 6/30/95.

SUMMARY The 3-span timber stringer bridge is supported on timber pier bents, one high coursed stone gravity abutment, and one concrete abutment. Many timber stringers and substructure members have been replaced (1959,1991) since the span was originally built in 1911. The span carries a plank deck and has 2-rail wood railings. The bridge is an undistinguished example of a common bridge type, but it is one of the few timber bridges in this region. It is technologically undistinguished.

INFORMATION

PHOTO: 432:7-8 (08/92)

REVISED BY (DATE):

QUAD: Newton East

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900S01	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.3
NAME & FEATURE INTERSECTED	CR 610 OVER PAULINS KILL			FACILITY	CR 610 (FREDON-STILLWATER ROAD)		
TOWNSHIP	STILLWATER TOWNSHIP						
TYPE	THRU GIRDER	DESIGN	PARTIALLY ENCASED			MATERIAL	Steel
# SPANS	1	LENGTH	78 ft	WIDTH	20.2 ft		
CONSTRUCTION DT	1926	ALTERATION DT					
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			SOURCE	PLANS/INSCRIPTION		
				BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane road over a small watercourse at the edge of the town center of Stillwater adjacent to an ca. 1800 mill and an 1820s inn. The area is a potential historic district. The span replaced a truss bridge constructed in 1888 by the Berlin Iron Bridge Co. The plaque from the non-extant 1888 bridge is set in the concrete abutment wall.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible. Agreed Potential Historic District. Contributing.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The thru girder with encased floorbeams bridge is supported on concrete abutments. The bridge is an example of a common type, and it is not technologically distinguished. The span is not historically significant, and it post-dates the period of significance of its 19th-century setting. It does not contribute to the character nor is it within the period of significance of the potential Stillwater historic district. It is thus a noncontributing resource.

INFORMATION

PHOTO: 1907:33-35 (07/92)

REVISED BY (DATE):

QUAD: Newton West

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900S15	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	13.88
NAME & FEATURE INTERSECTED	CR 521 OVER TROUT BROOK			FACILITY	CR 521		
TOWNSHIP	STILLWATER TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED	MATERIAL	Steel		
# SPANS	1	LENGTH	29 ft	WIDTH	20.1 ft		
CONSTRUCTION DT	1930	ALTERATION DT	1980ca	SOURCE	PLANS/INSCRIPTION		
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane county road over a small watercourse. It is located in the small 19th-century rural crossroads village of Middleville. Most of the homes have modern alterations, and the village does not appear to possess historic district potential.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on concrete abutments is flanked by guide rails placed in circa 1980. One of over 25 pre-WW II stringer bridges in the county, the span is an example of a common type in the state, and it is not technologically or historically distinguished.

INFORMATION

PHOTO: 1907:38,39 (07/92)

REVISED BY (DATE):

QUAD: Newton West



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900S25	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.13
NAME & FEATURE INTERSECTED	CR 622 OVER INLET TO SWARTSWOOD LAKE			FACILITY	CR 622 (NEWTON SWARTSWOOD ROAD)		
TOWNSHIP	STILLWATER TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED			MATERIAL	Steel
# SPANS	2	LENGTH	80 ft	WIDTH	26.8 ft		
CONSTRUCTION DT	1940	ALTERATION DT				SOURCE	PLANS
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane road with shoulders over a shallow watercourse in a wooded area with residential and commercial buildings dating from the 1940s to the 1950s. A house dating to the late 1800s is located to one side of the span.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The 2-span continuous encased steel stringer bridge supported on a concrete substructure is flanked by standard county design 2-rail concrete railings. Guide rail was added in front of the railings. One of over 25 pre-WW II stringer bridges in the county the span is an example of a common bridge type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1901:19-20 (08/92)

REVISED BY (DATE):

QUAD: Newton West

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900S26	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	17.11		
NAME & FEATURE INTERSECTED	CR 521 OVER INLET TO SWARTSWOOD LAKE			FACILITY	CR 521				
TOWNSHIP	STILLWATER TOWNSHIP								
TYPE	STRINGER	DESIGN	ENCASED			MATERIAL	Steel		
# SPANS	1	LENGTH	48 ft	WIDTH	23.9 ft				
CONSTRUCTION DT	1940	ALTERATION DT						SOURCE	PLANS
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER					BUILDER	UNKNOWN		

SETTING / The bridge carries a 2-lane road with shoulders and a sidewalk over a shallow watercourse in a residential area dating to the 1910s. A
CONTEXT building dating to the 1910s at the south west corner of the bridge appears to have been an old hotel.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on concrete abutments is flanked by standard county design 2-rail concrete railings. Guide rail was added in front of the railings. One of over 25 pre-1945 stringer bridges in the county, the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

**INFOR
MATION**

PHOTO: 1902:20-21 (08/92)

REVISED BY (DATE):

QUAD: Newton West



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1900V26 **CO** SUSSEX **OWNER** COUNTY **MILEPOINT** 0.0
NAME & FEATURE INTERSECTED MAPLE GRANGE ROAD OVER POCHUCK CREEK **FACILITY** MAPLE GRANGE ROAD
TOWNSHIP VERNON TOWNSHIP
TYPE STRINGER **DESIGN** ENCASED **MATERIAL** Steel
SPANS 1 **LENGTH** 40 ft **WIDTH** 24 ft
CONSTRUCTION DT 1934 **ALTERATION DT** **SOURCE** PLANS/INSCRIPTION
DESIGNER/PATENT HARVEY SNOOK, CO. ENGINEER **BUILDER** UNKNOWN

SETTING / CONTEXT The bridge carries a 2-lane road over a small stream in a wooded undeveloped area adjacent to farmland.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on scored concrete abutments is flanked by standard county design 2-rail concrete railings. The concrete encasement on the fascia stringers is finished with flat panels. One of over 25 pre-1945 stringer bridges in the county, the span is a representative example of a common type and is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1904:8-9 (08/92)

REVISED BY (DATE):

QUAD: Wawayanda

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900W06	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0		
NAME & FEATURE INTERSECTED	MAIN STREET OVER BIG FLAT BROOK		FACILITY	MAIN STREET					
TOWNSHIP	WALPACK TOWNSHIP								
TYPE	PONY TRUSS	DESIGN	PRATT				MATERIAL	Metal	
# SPANS	1	LENGTH	70 ft	WIDTH	11.6 ft				
CONSTRUCTION DT	1889	ALTERATION DT						SOURCE	PLAQUE
DESIGNER/PATENT	UNKNOWN					BUILDER	GROTON BRIDGE & MANUF CO		

SETTING / CONTEXT The bridge carries a 1-lane road over a small stream in a wooded area located within the Delaware Water Gap National Recreation Area. The span is within the borders of Walpack Center Historic District, which is significant as a well-preserved example of an early rural service center dating from the mid-1800s to the early 1900s. Located in an isolated valley, the village marketplace, which was supported by local farmers, diminished with the advent of the automobile.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No

CONSULT STATUS Not Individually Eligible. Listed. Walpack Center Historic District. 07/17/1980. Contributing.

CONSULT DOCUMENTS SHPO Letter 3/12/01

SUMMARY The pin-connected Pratt pony truss bridge is supported on ashlar abutments. In 1944 the trusses were strengthened with the addition of welded plates to the vertical, diagonal, and lower chords. Outriggers were added, and channel sections were welded to the floor beams. The span is one of the few documented truss spans in the county, and it was fabricated by a notable company. The bridge was constructed within the period of significance of the district, and it is a contributing element under Criterion C.

INFORMATION Bibliography: Pamela Thurber, "The Groton Iron Bridge Company," Historic Ithaca & Tompkins, NY, Newsletter Fall 1983, New Series Vol. 1,2, pp. 1-4.
Office of New Jersey Heritage. Sussex County, Walpack File.

Physical Description: The pin-connected Pratt pony truss bridge supported on ashlar abutments spans 70' and carries an 11'-6" width roadway. The truss members are standard sections, and they have been strengthened with welded plates. Outriggers were added to the trusses, and channel sections were welded to the floor beams. The deck was replaced with a metal grate deck. The dates of the alterations to the span are not documented. No plans for the bridge were located.

Technological and Historical Significance: The Pratt pony truss bridge, located in the Walpack Center Historic District, was constructed in 1889 by the Groton Bridge & Manufacturing Co., as is documented on a plaque located on top of one of the trusses. The bridge is significant because it is a documented example of an uncommon bridge type constructed by a noted bridge manufacturer. It was built within the period of significance of the district, and it is a contributing element (Criteria A & C).

The Groton Bridge & Manufacturing Company, of Groton, New York, was formed in 1877 under the name of the Groton Iron Bridge Company. The company was formed as the result of a merger between the Groton Iron Works, a blacksmith shop owned by Charles and Lyman Perrigo, and the Groton Separator Works, a manufactory of agricultural equipment owned by Daniel Spencer and Frederick Avery. It became a major bridge manufacturer primarily constructing small Pratt truss bridges in New York State. The firm was run by Ellery Colby and Frederick Avery during its first ten years of operation. Colby was a significant figure in New York State bridge building who later formed the Owego Bridge Company. In 1887, the name of the firm was changed to the Groton Bridge and Manufacturing Company, and it expanded operations. During this period, the company constructed many spans throughout the nation, the largest being an eleven-span bridge in Little Rock, Arkansas in 1896, and a multi-span crossing of the Anacostia River at Pennsylvania Avenue in Washington, D.C. in 1890 (replaced in 1936 by the John Phillip Sousa Bridge). In 1899, the firm became part of the American Bridge Company, and continued operation, primarily in New York State, until it folded in 1920.

The Walpack Center Historic District is an example of one of the first forms of urbanism in the country, the rural service center. Rural service centers thrived from the mid-nineteenth century through the early twentieth century, providing a marketplace for the local agricultural industry. Walpack Center was geographically isolated, located in a valley between two ridges of the Kittatinny Mountains. The geography of the area dictated a need for a local marketplace because travel was difficult. The farmers in the area depended on the local market to sell their goods, and the local people depended on it to obtain goods. With the advent of the automobile, travel became easier and this interdependence no longer existed. The town did not expand with increased transportation, as other service centers did, because of its isolated location. Building in the town came to almost a complete end in the early 1900s, and the town retains much of its late 18th century character. The architecture is not sophisticated, but rather ordinary, reflecting the lifestyle of the rural town during its peak. The bridge is located at the edge of town within the historic district, and it was constructed in 1889, during the period of significance.

Boundary Description and Justification: The bridge is an eligible contributing resource to the National Register-listed Walpack Center Historic District (1980). The bridge is completely within the boundaries of the historic district delineated in the nomination (refer to NR Sussex Co. File at HPO). The eligible resource includes the bridge as well as its surroundings.

PHOTO: 1902:36-39 (08/92)

REVISED BY (DATE):

QUAD: Lake Maskenozha

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900X01	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	ROY ROAD OVER PAPA KATING CREEK		FACILITY	ROY ROAD			
TOWNSHIP	WANTAGE TOWNSHIP						
TYPE	SLAB	DESIGN					
# SPANS	2	LENGTH	45 ft	WIDTH	22 ft	MATERIAL	Reinforced Concrete
CONSTRUCTION DT	1939	ALTERATION DT					
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			SOURCE PLANS			
				BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane collector road over a small stream set in farm land.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The 2-span continuous slab bridge supported on a concrete substructure is flanked by standard county-design 2-rail concrete railings. The waterway opening at the west side is blocked off by vegetation. One of over 25 pre-1945 slab bridges in the county, the span is a representative example of a common bridge type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1905:24-26 (08/92) REVISED BY (DATE): QUAD: Branchville

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900X10	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	7.14
NAME & FEATURE INTERSECTED	CR 565 OVER WEST BRANCH OF PAPAKATING CREEK			FACILITY	CR 565		
TOWNSHIP	WANTAGE TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED	MATERIAL	Steel		
# SPANS	2	LENGTH	42 ft	WIDTH	30.8 ft		
CONSTRUCTION DT	1923	ALTERATION DT	Unknown	SOURCE PLANS			
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane county road with narrow shoulders over a small stream in a wooded undeveloped area. Several commercial buildings dating from the 1940s through the 1970s are located about 1000' south of the bridge.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on concrete abutments and a steel pile bent is flanked by standard county-design 2-rail concrete railings. The encased beams are spalling, and the span is not well-preserved. A modern bent with rolled I-section posts and cap beam was added at an unknown date making the bridge a 2-span structure. The bridge is an altered example of a common type. It is neither technologically nor historically distinguished.

INFORMATION

PHOTO: 1904:27-28 (08/92)

REVISED BY (DATE):

QUAD: Branchville



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900X17	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 519 OVER WEST BRANCH OF PAPA KATING CREEK			FACILITY	CR 519		
TOWNSHIP	WANTAGE TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED	MATERIAL	Steel		
# SPANS	1	LENGTH	37 ft	WIDTH	24 ft		
CONSTRUCTION DT	1940	ALTERATION DT		SOURCE	PLANS/INSCRIPTION		
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		
SETTING / CONTEXT	The bridge carries a 2-lane county road over a small stream through farmland with single-family farm houses dating from the late 1800s to the early 1900s.						

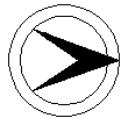
1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The skewed encased stringer bridge supported on concrete abutments is flanked by standard county-design 2-rail concrete railings. One of over 25 pre-1945 stringer bridges in the county, the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1904:21-22 (08/92) REVISED BY (DATE): QUAD: Branchville

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1900X50	CO	SUSSEX	OWNER	COUNTY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	CR 651 OVER BRANCH CLOVE BROOK			FACILITY	CR 651		
TOWNSHIP	WANTAGE TOWNSHIP						
TYPE	SLAB	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	1	LENGTH	23 ft	WIDTH	25 ft		
CONSTRUCTION DT	1934	ALTERATION DT	1980ca	SOURCE PLANS			
DESIGNER/PATENT	HARVEY SNOOK, CO. ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries a 2-lane county road over a small stream in a wooded undeveloped area surrounded by farmland.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The single-span reinforced concrete slab bridge supported on concrete abutments is flanked by modern guide rails. The short-span was constructed on a slight skew. One of over 10 pre-1945 slab bridges in the county, the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1905:34,35 (08/92)

REVISED BY (DATE):

QUAD: Port Jervis South

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1903152	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	30.14
NAME & FEATURE INTERSECTED	NJ 23 OVER BRANCH PACOCK BROOK & DELWARE-OSTG MAINLINE			FACILITY	NJ 23		
TOWNSHIP	HARDYSTON TOWNSHIP						
TYPE	DECK GIRDER	DESIGN	JACK ARCH (CONCRETE)			MATERIAL	Steel
# SPANS	4	LENGTH	213 ft	WIDTH	30 ft		
CONSTRUCTION DT	1931	ALTERATION DT			SOURCE	INSCRIPTION/PLANS	
DESIGNER/PATENT	ERIE RR OFFICE OF ENGINEER			BUILDER	UNKNOWN		

SETTING / CONTEXT The bridge carries NJ 23, a 2-lane highway with shoulders and 1 sidewalk, over a small stream and a track of the New York Susquehanna and Western Railroad. Set in a wooded undeveloped area, buildings used for light industry built in the 1940s are located to one side of the bridge.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The skewed deck girder with floorbeams bridge is supported by concrete abutments and steel pier bents. The main span of the bridge is concrete encased, and the span has a concrete jack arch deck. Railroads used concrete jack arches longer than highway bridge designers. The bridge is finished with standard-design concrete balustrades. The span is a late example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1903:38-40 (08/92) REVISED BY (DATE): QUAD: Franklin

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1903154	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	31.84
NAME & FEATURE INTERSECTED	NJ 23 OVER BRANCH FRANKLIN LAKE			FACILITY	NJ 23		
TOWNSHIP	FRANKLIN BOROUGH						
TYPE	MULTI GIRDER	DESIGN	ENCASED	MATERIAL	Steel		
# SPANS	1	LENGTH	40 ft	WIDTH	30 ft		
CONSTRUCTION DT	1928	ALTERATION DT		SOURCE	INSCRIPTION		
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV			BUILDER			

SETTING / CONTEXT The bridge carries NJ 23, a 2-lane highway, over a small stream in a predominantly commercial area. A few early 1900s homes are located along NJ 23 near the bridge, and the local businesses were developed in the 1950s and 1960s.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The skewed encased multi-girder bridge supported on concrete abutments is flanked by standard design concrete balustrades. Guide rail was added in front of the balustrades. The bridge is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1903:15-16 (08/92)

REVISED BY (DATE):

QUAD: Franklin

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1903158	CO	SUSSEX	OWNER	RAILROAD	MILEPOINT	33.52
NAME & FEATURE INTERSECTED	HUDSON BRANCH OVER NJ 23			FACILITY	HUDSON BRANCH		
TOWNSHIP	HAMBURG BOROUGH						
TYPE	THRU GIRDER	DESIGN		MATERIAL	Steel		
# SPANS	1	LENGTH	76 ft	WIDTH	14.3 ft		
CONSTRUCTION DT	1908	ALTERATION DT		SOURCE	INSCRIPTION		
DESIGNER/PATENT				BUILDER			

SETTING / CONTEXT The bridge carries a track of the Lehigh and Hudson River Railroad over NJ 23, a 2-lane highway with shoulders. The bridge is set in a wooded area, and commercial businesses along NJ 23 date to the 1980s. The L&H River RR was originally part of the New York Susquehanna & Western RR.

1995 SURVEY RECOMMENDATION	Not Eligible	HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)	No
CONSULT STATUS	Not Individually Eligible.		
CONSULT DOCUMENTS	SHPO Letter 6/30/95		

SUMMARY The skewed riveted steel thru girder with floorbeams bridge is supported on concrete abutments that are wide enough to accommodate another span beside it. The ends of the concrete wingwalls are stepped. The span exhibits no unusual construction details and is a representative example of a common type in New Jersey. It is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1903:29-30 (08/92)	REVISED BY (DATE):	QUAD: Hamburg
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NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1904154	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	39.34	
NAME & FEATURE INTERSECTED	NJ 23 OVER PAPAKATING CREEK, LEHIGH & NORTHEAST RR		FACILITY	NJ 23				
TOWNSHIP	WANTAGE TOWNSHIP							
TYPE	MULTI GIRDER	DESIGN	ENCASED			MATERIAL	Steel	
# SPANS	4	LENGTH	280 ft	WIDTH	54 ft			
CONSTRUCTION DT	1941	ALTERATION DT					SOURCE	INSCRIPTION
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV			BUILDER				

SETTING / CONTEXT The bridge carries NJ 23, a 2-lane divided highway with a grass median, shoulders, and sidewalks, over a shallow watercourse and the abandoned r-o-w of the Lehigh and Northeastern Railroad. The span is located in a wooded area interspersed with commercial buildings dating from the 1950s to the 1970s.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The 4-span skewed encased multi-girder bridge is supported on concrete stub abutments and pier bents. The girders that span over the water are deeper than the girders at the other spans. The spans are of unequal length. Standard design concrete balustrades finish the bridge. Exhibiting no distinctive construction details, the span is an example of a common bridge type, and it is neither technologically nor historically noteworthy.

INFORMATION

PHOTO: 1904:16-18 (08/92) REVISED BY (DATE): QUAD: Hamburg

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1907152	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	3.03
NAME & FEATURE INTERSECTED	NJ 284 OVER BRANCH OF WALLKILL RIVER			FACILITY	NJ 284		
TOWNSHIP	WANTAGE TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED		MATERIAL	Steel	
# SPANS	1	LENGTH	38 ft	WIDTH	30.3 ft		
CONSTRUCTION DT	1921	ALTERATION DT			SOURCE	INSCRIPTION	
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV			BUILDER			

SETTING / CONTEXT The bridge carries NJ 284, a state road formerly designated NJ 8, over a small stream in a farming and residential area. A late 1800s farm house and a house constructed in the 1950s are contiguous to the span.

1995 SURVEY RECOMMENDATION	Not Eligible	HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)	No
CONSULT STATUS	Not Individually Eligible.		
CONSULT DOCUMENTS	SHPO Letter 6/30/95		

SUMMARY The skewed encased stringer bridge supported on concrete abutments is flanked by concrete parapets. Guide rails were added in front of the parapets. One of over 25 pre-1945 stringer bridges in the county, the span is an example of a common bridge type, and it is neither technologically nor historically distinguished.

INFORMATION

PHOTO: 432:18-19 (08/92)

REVISED BY (DATE):

QUAD: Hamburg

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1911151 **CO** SUSSEX **OWNER** NJDOT **MILEPOINT** 98.81
NAME & FEATURE INTERSECTED US 206 OVER LUBBERS RUN **FACILITY** US 206
TOWNSHIP BYRAM TOWNSHIP
TYPE STRINGER **DESIGN** ENCASED **MATERIAL** Steel
SPANS 1 **LENGTH** 25 ft **WIDTH** 40 ft
CONSTRUCTION DT 1928 **ALTERATION DT** **SOURCE** INSCRIPTION
DESIGNER/PATENT NJ STATE HWY DEPT BRIDGE DIV **BUILDER**

SETTING / CONTEXT The bridge carries US 206, a 2-lane highway with shoulders that was formerly designated NJ 31, over a small stream in a wooded area. The buildings in the area along the highway are commercial and date from the 1960s to the present. A house dating to the 1910s located to one side of the bridge was converted for commercial use.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on a concrete substructure has standard design concrete balustrades. The fasciae are paneled. One of over 25 pre-1945 stringer bridges in the county, the span is an short example of a common type. It is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1901:35-36 (08/92)

REVISED BY (DATE):

QUAD: Stanhope

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1911154	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	103
NAME & FEATURE INTERSECTED	US 206 OVER BRANCH PEQUEST RIVER			FACILITY	US 206		
TOWNSHIP	ANDOVER BOROUGH						
TYPE	CULVERT	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	2	LENGTH	33 ft	WIDTH	33 ft		
CONSTRUCTION DT	1910	ALTERATION DT		SOURCE	INSCRIPTION		
DESIGNER/PATENT	DL&W OFFICE OF ENGINEERING			BUILDER	DAVID W. FLICKWIR		

SETTING / CONTEXT The bridge carries a 2-lane highway with shoulders over a small stream in a wooded residential area dating from the early 1900s to the 1920s. The bridge is skewed beneath a concrete arch tunnel, 1911155, built at the same time to carry the r-o-w of the DL&W RR NJ Cutoff (abandoned) at the Pequest Fill. The cutoff is a significant engineering achievement noted for its concrete structures, large cuts and fills, and avoided creating any highway railroad grade crossings along its 28.45 mile length.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** Yes

CONSULT STATUS Not Individually Eligible. Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District, Eligible. Contributing.

CONSULT DOCUMENTS SHPO Opinion 3/22/94, Letter 03/12/01.

SUMMARY The 2-span concrete culvert supported on a concrete substructure is part of a 2-tier structure, and it spans on a skew beneath the concrete arch tunnel (1911155) that was constructed at the same time. Individually the culvert is not distinguished, however, it is one of the original concrete structures built as part of the 1908-1911 NJ Cutoff, a technologically significant engineering achievement noted for its use of reinforced concrete for bridges and structures and for completely grade separating the railroad and highway crossings. The structure is not individually eligible for listing in the National Register of Historic Places but is eligible as a contributing element of the Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District under Criteria A and C.

INFORMATION **BIBLIOGRAPHY:**
 "The New Cut-off Line of the Lackawanna Railroad", Wheaton, F.L., Engineering News, Vol.60, No.7, August 13, 1908.
 Short summary of DL&W Cut-off, Engineering News, Vol.60, No.3, July 16, 1908. pg.72.
 "Some Concrete Culverts and Small Bridges on the Slateford-Hopatcong Cut-off of the Delaware, Lackawanna & Western R.R.", Engineering News, Vol.62, No.14, September 30, 1909.
 Condit, Carl W., American Building Art The Twentieth Century, 1961.
 Taber, Thomas Townsend, The Delaware, Lackawanna & Western Railroad in the Nineteenth Century. 1977.
 Taber, T.T. and Taber, T.T. III, The Delaware, Lackawanna & Western Railroad in the Twentieth Century, Vols. I and II. 1980.
 Lefferts, H. Leedom Jr., and Piefer, David R., Northwest New Jersey: An Inventory and History of Historic Engineering and Industry. 1979.

Physical Description: The 2-span reinforced concrete culvert spans beneath a concrete arch tunnel (1911155) that carries abandoned RR r-o-w over the road. The culvert is inscribed with the date of construction, 1910, on the fascia. The span exhibits typical construction and appears unaltered.

Historical and Technological Significance: The concrete culvert, constructed in 1910, is not individually distinguished, but it is significant because it was built, along with the concrete arch tunnel that spans above it, as part of the construction of the New Jersey Cut-Off of the Delaware, Lackawanna, & Western RR. The New Jersey Cut-Off, built in 1908-1911, is historically and technologically distinguished in the areas of engineering and transportation (Criteria A, C). The cut-off is an important engineering accomplishment of the early 20th century. The Delaware, Lackawanna & Western RR (DL&W) designed and built the line to improve the efficiency of train travel across the mountainous terrain of northwestern New Jersey in Warren, Sussex, and Morris counties from Slateford, Pennsylvania to the DL&W mainline near Lake Hopatcong. The design and construction of a railroad that rises and falls just eleven feet over its length of 28.45 miles while crossing the mountains and valleys of northwestern New Jersey is remarkable even today. The decision to use reinforced concrete exclusively for all structures along the route was a pioneering action that attracted the attention of the engineering profession. The railroad's use of reinforced concrete did much to prove the material to be as strong and durable as the engineers of the early-20th century had anticipated. The DL&W also made full use of the moldable qualities of the material, designing not just functional structures, but also aesthetically pleasing ones that enhance the beauty of the railroad.

Sixteen structures are included in the NJDOT Historic Bridge Survey, but other structures, including viaducts, tunnels, and stations, were observed within Warren and Sussex counties. The structures not included in this survey appear to have integrity consistent with those bridges and tunnels that are included.

The New Jersey Cutoff is the culmination of over 55 years of efforts by the company to improve its route across New Jersey to New York City. The Delaware, Lackawanna and Western Railroad (DL&W), composed of a network of smaller railroads in Pennsylvania, New York and New Jersey, was formed in 1853 for the purpose of moving anthracite coal from the mining regions of northeastern Pennsylvania to market locations. It started from the merger of the Liggett's Gap RR and the Delaware & Cobbs Gap RR, which had been chartered and developed around 1850 by parties interested in carrying the coal to the Erie RR to the west and to the Delaware River to the east.

As the anthracite coal mining industry grew, so did the desire to increase the access to markets. In reaching to the east the DL&W needed a connection in New Jersey. They incorporated the Warren Railroad in the 1851 to carry trains from the Delaware River at Columbia (Warren County, NJ) to Central Railroad of New Jersey tracks in Hampton (Hunterdon County, NJ). From there the coal could be moved eastward to Elizabethport (near Newark, NJ). Commuters also traveled this route to get to New York City. In the late 1860s the DL&W became dissatisfied with the CNJ connections and sought their own access to the New York markets. In 1868 they leased the Morris & Essex RR, which was developed in the 1830s and 1840s in Morris, Essex and Hudson counties and the 1850s in Warren County. The M&E crossed New Jersey from Hoboken to Phillipsburg on the Delaware River.



NEW JERSEY HISTORIC BRIDGE DATA

Though the DL&W controlled several railroads (like the M&E, Warren, Valley, etc.), each was operated separately until 1899, when new DL&W president William Truesdale centralized control of the company. This move allowed for increased efficiency for the railroad as a whole. In addition to the reorganization, Truesdale undertook an ambitious plan to modernize the routes (All background information gathered from Taber, 1977).

In seeking a more efficient, less circuitous route to replace the old 1851 Warren Railroad right-of-way, the DL&W considered three plans to build a completely new route (Taber and Taber, 1980:34-36). The plan chosen was a completely new line that would include massive cuts and fills to virtually eliminate grade changes. The existing line was nearly 40 miles long, had 57 curves comprising almost 13 miles of track, and a maximum grade of 60.2 feet per mile with a total rise and fall of 248 feet. The new layout, known as the New Jersey Cut-Off, limited the number and degree of curves and saved over 11 miles of track from the circuitous old line. This was the most expensive choice, costing \$11,065,511.43 when completed (Taber and Taber, 1980:39), but the anticipated benefits for the railroad outweighed the cost.

Beginning in 1908 and under the direction of DL&W Chief Engineer George Ray, layout and design of the cut-off began. The line was to be 28.45 miles long, with a total rise and fall of just 11 feet and less than 5 miles of curved track. The new route would require 73 structures, including two massive viaducts, twelve overhead highway bridges and numerous crossings of roads and minor watercourses. Over 14 million cubic yards of both cut and fill were needed to create the relatively flat crossing of the hills and valleys of northwestern New Jersey (Taber and Taber, 1980:36).

Mr. Ray decided that reinforced concrete would be used for all structures along the route. This was the first time such a decision was made, causing the nickname of the "reinforced concrete railroad" to be used by the engineering profession when discussing the cut-off (Taber and Taber, 1980:36). Reinforced concrete was a state-of-the-art building material with yet unknown ultimate capabilities. It was thought to be as strong and durable as stone, and seemingly more permanent than wood or even steel.

Uncommon methods were used for the construction of the fills along the route. While the traditional method of building a wooden trestle to run dumping trains on was used for most fills, tracking was hung from suspended cables for the fills of greater magnitude. Dumping trains would carry fill onto the suspended tracks and dump the fill material from there. Most of the fill used on the cutoff was taken from the many cuts that were made, but even that was not enough. The DL&W bought 760 acres of farm land from which the contractors could dig additional fill. Five million pounds of dynamite was used to make the cuts. The Pequest Fill (Milepoint 55.85, Green Township, Sussex County) was the largest along the cut-off and in 1908 was claimed to be the "largest railway embankment ever made" (Engineering News, 1908:72). It was over 3 miles long and was up to 140 feet high. Over 6.5 million cubic yards of fill were necessary to reach the proper grade on this fill (Taber and Taber, 1980:36).

The DL&W chose to use similar structures for similar uses along the line. Where highway bridges were needed to cross their tracks, they designed reinforced concrete deck arch bridges, a bridge type that was capable of relatively long spans while providing dynamic and graceful forms. At least eleven deck arches were built in New Jersey, (1900G12, 1900G13, 1900K07, 1900C17, 2153166, 2153165, 2153164, 2153163, 2153162, 2153161, 2153160), all of them single span structures with one of two types of balustrades. Though design adjustments had to be made for roadway alignment and foundation conditions, the deck arch bridges are very similar structures.

Reinforced concrete arch tunnels were constructed where the cut-off crossed over roads or small waterways. These structures often supported high fill embankments as the cut-off crossed a valley. Over 35 of these structures were built along the line, and several of them are included in the Historic Bridge Survey (Wasigan and Simpson roads in Warren County, 2117152, and 1911155 in Sussex County). Slab-roofed tunnels and box culverts were also built to carry the right-of-way over roads and streams (1900C18).

The largest structures along the line were the two multi-span viaducts; the Delaware River Viaduct (2114159) in Knowlton Township and the Paulins Kill Viaduct (Milepoint 70.63, near Hainesburg in Knowlton Township). Both are open spandrel arch bridges that span valleys and larger water courses. The 9-span Delaware River Viaduct crosses the river as well as the highways that parallel it on both sides. It is 1,450 feet long and carries trains 65 feet above the river. The nine span structure has seven open spandrel arches and two deck arch approach spans on the Pennsylvania end. The 7-span Paulins Kill Viaduct in Hainesburg (Warren County) is 1100 feet long, but it is more graceful and magnificent as it rises 115 feet above the valley floor. It passes over the Paulins Kill River, the New York, Susquehanna and Western Railroad and the valley they run through (viaduct not included in the bridge survey because no roadway is associated with it). It was the most impressive structure on the DL&W main line prior to the building of the Tunkhannock Viaduct in Nicholson, Pennsylvania, completed in 1915.

Around the turn of the century, reinforced concrete arches were generally limited to relatively short and often single span bridges. The dead load carried by the arches was reduced with the introduction of open spandrel arches. The lighter structures were capable of longer spans and more aesthetically pleasing large bridges. The Walnut Lane bridge (1906-8) over Wissahickon Creek in Philadelphia was a forerunner of the type, though it used virtually no steel reinforcement in the two ribs (Condit, 1961:198). The use of reinforcement made the possibilities even greater. Under Ray's direction, the length and number of spans increased to create massive structures that dominated the landscape.

The New Jersey Cut-Off was divided into sections for bidding. Seven contractors were each awarded one section of the line, including contractors from as far away as Billings, Montana and Roanoke, Virginia. Each contract included all clearing, grading and masonry construction (Wheaton, 1908).

In addition to its engineering significance, the railroad right-of-way ranks historically as one of the most significant in the state, owing to the impact moving coal across the state had on the development of transportation systems within New Jersey. The Lehigh Valley Railroad played a significant role in the development of transportation and transportation-driven development in the northern half of the state, and the cut-off stands as one of the most ambitious remnants of the coal era in the state.

In summation, the viaducts, tunnels, overpasses, cuts, and fills on the New Jersey Cut-Off (1908-1911) form part of a unified design that was, and still is, one of the most remarkable engineering achievements of the early 20th century in the region. Furthermore, the New Jersey Cut-Off is one of the most visible remnants of the DL&W, and is illustrative of the history of one of the largest movers of coal that



NEW JERSEY HISTORIC BRIDGE DATA

contributed to the transportation-driven economic growth of the northern half of the state. The New Jersey Cut-Off is a significant part of the western New Jersey historic landscape and transportation systems.

Boundary Description and Justification: The significance of the structure is based, in part, on its historic association and physical connection with a right-of-way that is both historically and technologically important. In New Jersey, the potential historic corridor appears to be limited to the railroad right-of-way. The potential historic corridor is approximately 28 miles long stretching from the Delaware River to the eastern junction at Hopatcong, Morris County. The New Jersey Cut-Off's western junction is in Slateford, Pennsylvania on the west bank of the Delaware River. The entire route and all its related structures were not surveyed as part of this project, but those portions of the route that were surveyed or observed as part of the 1991-1993 Historic Bridge Survey have integrity of setting and original design and appear to representative of the overall state of preservation and completeness of the route in Sussex and Warren counties.

PHOTO: 1901:5-7 (08/92)

REVISED BY (DATE):

QUAD: Stanhope

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1911155 **CO** SUSSEX **OWNER** RAILROAD **MILEPOINT** 53.44
NAME & FEATURE INTERSECTED NJ CUTOFF OVER US 206 **FACILITY** NJ CUTOFF OF DL&W RR
TOWNSHIP ANDOVER BOROUGH
TYPE TUNNEL **DESIGN** **MATERIAL** Reinforced Concrete
SPANS 1 **LENGTH** 32 ft **WIDTH** 43 ft
CONSTRUCTION DT 1910 **ALTERATION DT** **SOURCE** INSCRIPTION
DESIGNER/PATENT DL&W OFFICE OF ENGINEERING **BUILDER** DAVID W. FLICKWIR

SETTING / CONTEXT The bridge carries the abandoned DL&W RR NJ Cutoff over US 206 and a minor stream in a wooded residential area dating from the early 1900s to the 1920s. It is part of a 2-tier arrangement with the highway crossing the stream on 1911154. The Cutoff is an historically important route that was constructed to improve moving anthracite coal from Pennsylvania to markets east. Also a significant engineering achievement, the line was constructed with major cuts and fills, and avoided creating any highway railroad grade crossings along its 28.45 mile length.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No

CONSULT STATUS Not Individually Eligible. Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District, Eligible. Contributing.

CONSULT DOCUMENTS SHPO Opinion 3/22/94, Letter 03/12/01.

SUMMARY The concrete arch tunnel supported on a concrete substructure spans over 1911154. The high embankment over the tunnel was originally part of the Pequest Fill. Guide rail has been placed at the approaches. The span, 1 of 7 in the county built as part of the 1908-1911 NJ Cutoff. It is a technologically significant engineering achievement noted for its use of reinforced concrete for bridges and structures and for completely grade separating the railroad and highway crossings. The structure is not individually eligible for listing in the National Register of Historic Places but is eligible as a contributing element of the Delaware, Lackawanna & Western Railroad New Jersey Cutoff Historic District under Criteria A and C.

INFORMATION

PHOTO: 1901:3-4 (08/92)

REVISED BY (DATE):

QUAD: Stanhope

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1911159	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	105.87		
NAME & FEATURE INTERSECTED	US 206 OVER PEQUEST RIVER			FACILITY	US 206				
TOWNSHIP	ANDOVER TOWNSHIP								
TYPE	STRINGER	DESIGN	ENCASED			MATERIAL	Steel		
# SPANS	1	LENGTH	29 ft	WIDTH	40 ft				
CONSTRUCTION DT	1931	ALTERATION DT						SOURCE	INSCRIPTION
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV					BUILDER			

SETTING / CONTEXT The bridge carries US 206, a 2-lane highway with shoulders formerly designated as NJ 31, over a small stream in a sparsely developed commercial area. A strawberry farm is located at one side of the bridge and a kennel is at the other side.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on a concrete substructure has standard design concrete balustrades. Guide rails were added in front of the balustrades. One of over 25 pre-1945 stringer bridges in the county, the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1901:8-10 (08/92)

REVISED BY (DATE):

QUAD: Newton West



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1911160	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	106.1
NAME & FEATURE INTERSECTED	US 206 OVER BRANCH OF PEQUEST RIVER			FACILITY	US 206		
TOWNSHIP	ANDOVER TOWNSHIP						
TYPE	SLAB	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	1	LENGTH	23 ft	WIDTH	40 ft		
CONSTRUCTION DT	1931	ALTERATION DT		SOURCE	INSCRIPTION		
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV			BUILDER			

SETTING / CONTEXT The bridge carries US 206, a 2-lane highway with shoulders formerly designated NJ 31, over a small watercourse. The bridge is set in a commercial area developed in the 1960s.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The single-span concrete slab bridge supported on a concrete substructure has standard design concrete balustrades. Guide rails were added to the face of the balustrades. The short span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1901:11-12 (08/92) REVISED BY (DATE): QUAD: Newton West

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1912150	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	116.28		
NAME & FEATURE INTERSECTED	US 206 OVER DRY BROOK & CONRAIL (ABANDONED)			FACILITY	US 206				
TOWNSHIP	BRANCHVILLE BOROUGH								
TYPE	MULTI GIRDER	DESIGN	ENCASED				MATERIAL	Steel	
# SPANS	4	LENGTH	245 ft	WIDTH	54 ft				
CONSTRUCTION DT	1940	ALTERATION DT						SOURCE	INSCRIPTION
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV				BUILDER				

SETTING / CONTEXT The bridge carries US 206, a 2-lane median-divided state highway with wide shoulders and sidewalks, over a small stream and Conrail r-o-w that was originally the location of the Sussex Railroad, the first railroad built in Sussex County. The r-o-w was part of the DL&W RR when the span was constructed. The highway was formerly designated NJ S31, and the span is set in a wooded undeveloped area.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 03/12/01

SUMMARY The 4-span skewed encased multi girder bridge supported by a concrete substructure has concrete sidewalks flanked by standard design concrete balustrades. Guide rails were added along each curbline. The bridge is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1906:28-31 (08/92 JPH (5/96)) REVISD BY (DATE): QUAD: Branchville



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1912151	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	117.43
NAME & FEATURE INTERSECTED	US 206 OVER CULVERS BROOK			FACILITY	US 206		
TOWNSHIP	BRANCHVILLE BOROUGH						
TYPE	CULVERT	DESIGN		MATERIAL	Reinforced Concrete		
# SPANS	1	LENGTH	34 ft	WIDTH	60 ft		
CONSTRUCTION DT	1939	ALTERATION DT		SOURCE	INSCRIPTION		
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV			BUILDER			

SETTING / CONTEXT The bridge carries US 206, a 4-lane median-divided highway with grass-covered sidewalks that was formerly designated NJ S-31, over a small stream in a wooded undeveloped area.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The skewed concrete culvert with concrete wingwalls is flanked by guide rails. It appears to be unaltered. The short-span bridge is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1906:32,33 (08/92)

REVISED BY (DATE):

QUAD: Culvers Gap

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1912158 **CO** SUSSEX **OWNER** NJDOT **MILEPOINT** 122.46
NAME & FEATURE INTERSECTED US 206 OVER BRANCH OF BIG FLAT BROOK **FACILITY** US 206
TOWNSHIP SANDYSTON TOWNSHIP
TYPE SLAB **DESIGN** **MATERIAL** Reinforced Concrete
SPANS 1 **LENGTH** 21 ft **WIDTH** 38 ft
CONSTRUCTION DT 1929 **ALTERATION DT** **SOURCE** INSCRIPTION
DESIGNER/PATENT NJ STATE HWY DEPT BRIDGE DIV **BUILDER**

SETTING / CONTEXT The bridge carries US 206, a 2-lane highway with wide shoulders that was formerly designated NJ S-31, over a small watercourse in a wooded undeveloped area.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The short-span concrete slab bridge supported on concrete abutments was constructed on a skew. Guide rails flank either side of the roadway. One of over 10 pre-1945 slab bridges in the county, the span is an example of a common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1907:1-2 (07/92) REVISED BY (DATE): QUAD: Culvers Gap



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1912160	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	122.83
NAME & FEATURE INTERSECTED	US 206 OVER BIG FLAT BROOK			FACILITY	US 206		
TOWNSHIP	SANDYSTON TOWNSHIP						
TYPE	STRINGER	DESIGN	ENCASED			MATERIAL	Steel
# SPANS	2	LENGTH	93 ft	WIDTH	40 ft		
CONSTRUCTION DT	1929	ALTERATION DT				SOURCE	INSCRIPTION
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV			BUILDER			
SETTING / CONTEXT	The bridge carries a 2-lane highway with shoulders over a shallow stream in a wooded undeveloped area. US 206 was formerly designated NJ S-31.						

1995 SURVEY RECOMMENDATION	Not Eligible	HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)	No
CONSULT STATUS	Not Individually Eligible.		
CONSULT DOCUMENTS	SHPO Letter 6/30/95		

SUMMARY The 2-span encased stringer bridge supported on a concrete substructure is flanked by standard design concrete balustrades. Guide rail was added in front of the balustrades. The abutments and piers have scoring. One of over 25 pre-1945 stringer bridges in the county, the span is an example of a common type in the state, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO:	1902:24-25 (08/92)	REVISED BY (DATE):	QUAD: Culvers Gap
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NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1912163	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	125.08
NAME & FEATURE INTERSECTED	US 206 OVER LITTLE FLAT BROOK			FACILITY	US 206		
TOWNSHIP	SANDYSTON TOWNSHIP						
TYPE	STRINGER			DESIGN	ENCASED	MATERIAL	Steel
# SPANS	1	LENGTH	37 ft	WIDTH	40 ft		
CONSTRUCTION DT	1929	ALTERATION DT		SOURCE	INSCRIPTION		
DESIGNER/PATENT	NJ STATE HWY DEPT BRIDGE DIV			BUILDER			

SETTING / CONTEXT The bridge carries US 206, a 2-lane highway with shoulders formerly designated as NJ S-31, over a small stream in a sparsely developed wooded area. The structures along the road in the area are commercial and date to the post-WW II era.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased stringer bridge supported on a concrete substructure is flanked by standard design concrete balustrades. Guide rails were added in front of the balustrades. One of over 25 pre-1945 stringer bridges in the county, the span is an example of a very common type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1902:26-27 (08/92)

REVISED BY (DATE):

QUAD: Culvers Gap

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
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NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	1922150	CO	SUSSEX	OWNER	NJDOT	MILEPOINT	17.64
NAME & FEATURE INTERSECTED	NJ 15 OVER BEAVER RUN			FACILITY	NJ 15		
TOWNSHIP	LAFAYETTE TOWNSHIP						
TYPE	STONE ARCH	DESIGN	ELLIPTICAL	MATERIAL	Stone		
# SPANS	1	LENGTH	22 ft	WIDTH	30 ft		
CONSTRUCTION DT	1915	ALTERATION DT	Unknown	SOURCE	NJDOT		
DESIGNER/PATENT	UNKNOWN			BUILDER	UNKNOWN		
SETTING / CONTEXT	The bridge carries a 2-lane state road and sidewalks over a small stream in a mixed commercial and residential area dating from the early 1900s through the 1920s. A town park with a pool is located to one side of the span.						

1995 SURVEY RECOMMENDATION	Not Eligible	HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)	No
CONSULT STATUS	Not Individually Eligible.		
CONSULT DOCUMENTS	SHPO Letter 6/30/95		

SUMMARY The single-span stone arch bridge has been widened at an unknown dates by 9'-8" to the south with a corrugated metal pipe, and by 8' to the north with concrete T beams. Concrete wingwalls, sidewalks and 2-rail concrete railings date to the widening. The span is not well-preserved, and alterations have compromised its visual integrity. The bridge is not distinguished.

INFORMATION

PHOTO: 1906:42-44 (08/92) REVISED BY (DATE): QUAD: Newton East

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1923150 **CO** SUSSEX **OWNER** NJDOT **MILEPOINT** 35.21
NAME & FEATURE INTERSECTED NJ 94 OVER WALLKILL RIVER **FACILITY** NJ 94
TOWNSHIP HAMBURG BOROUGH
TYPE THRU GIRDER **DESIGN** ENCASED **MATERIAL** Steel
SPANS 1 **LENGTH** 86 ft **WIDTH** 40 ft
CONSTRUCTION DT 1929 **ALTERATION DT** **SOURCE** INSCRIPTION
DESIGNER/PATENT NJ STATE HWY DEPT BRIDGE DIV **BUILDER**

SETTING / CONTEXT The bridge carries NJ 94, a 2-lane highway with shoulders that was formerly designated NJ 31, over a shallow watercourse in a wooded setting. The Sussex County Municipal Utility Authority and other light industrial buildings constructed in the 1950s are contiguous to the bridge.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The encased thru girder bridge supported on concrete abutments was built on a large skew. The abutments and wingwalls have horizontal linear scoring. Guide rail was added in front of the thru girders, and a chain-link fence was placed on top of the east girder. One of over 6 thru girder spans in the county, the bridge is an example of a common statewide type, and it is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1903:35-36 (08/92)

REVISED BY (DATE):

QUAD: Hamburg

NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE # 1923151 **CO** SUSSEX **OWNER** NJDOT **MILEPOINT** 35.26
NAME & FEATURE INTERSECTED NJ 94 OVER ABANDONED HANFORD BRANCH **FACILITY** NJ 94
TOWNSHIP HAMBURG BOROUGH
TYPE STRINGER **DESIGN** ENCASED **MATERIAL** Steel
SPANS 1 **LENGTH** 43 ft **WIDTH** 40 ft
CONSTRUCTION DT 1934 **ALTERATION DT** **SOURCE** INSCRIPTION
DESIGNER/PATENT NJ STATE HWY DEPT BRIDGE DIV **BUILDER**

SETTING / CONTEXT The bridge carries NJ 94, a 2-lane highway with sidewalks that was formerly designated NJ 31, over the abandoned r-o-w of the Hanford Branch of the New York Susquehanna and Western Railroad. The bridge is set in a wooded area with light industrial buildings dating from the 1950s to the present.

1995 SURVEY RECOMMENDATION Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Not Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The slightly skewed encased stringer bridge supported on scored concrete abutments is flanked by standard design concrete balustrades. Guide rails were added at the sidewalks along the curblin. The span is not well-preserved, and it is a representative example of a common type in the state. One of over 25 pre-1945 stringer bridges in the county, the span is neither technologically innovative nor historically distinguished.

INFORMATION

PHOTO: 1903:34,37 (08/92)

REVISED BY (DATE):

QUAD: Hamburg

NEW JERSEY DEPARTMENT OF TRANSPORTATION
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NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	3461150	CO	SUSSEX	OWNER	STATE AGENCY	MILEPOINT	0.0
NAME & FEATURE INTERSECTED	SKELLENGER ROAD OVER BIG FLAT BROOK			FACILITY	SKELLENGER ROAD		
TOWNSHIP	SANDYSTON TOWNSHIP						
TYPE	DECK ARCH	DESIGN	ELLIPTICAL			MATERIAL	Steel
# SPANS	2	LENGTH	40 ft	WIDTH	20 ft		
CONSTRUCTION DT	1942	ALTERATION DT					
DESIGNER/PATENT	UNKNOWN			SOURCE	PLANS		
				BUILDER	CIVILIAN CONSERVATION CORPS		

SETTING / CONTEXT The bridge carries a 2-lane park road over a shallow stream, and it is located within the Stokes State Forest. Camp sites are located nearby.

1995 SURVEY RECOMMENDATION Not Eligible

HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED) No

CONSULT STATUS Not Individually Eligible.

CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The 2-span deck arch bridge is lined with corrugated metal and has stone spandrel walls and a concrete substructure. The parapets are stone masonry. A utility pipe is supported along the east fascia. Constructed with stone work to be compatible with the park setting, the metal arch bridge is a late example of an arch span, and it is not technologically or historically distinguished.

INFORMATION

PHOTO: 1902:42-43 (08/92)

REVISED BY (DATE):

QUAD: Culvers Gap

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
BUREAU OF ENVIRONMENTAL SERVICES**



NEW JERSEY HISTORIC BRIDGE DATA

STRUCTURE #	4100001	CO	SUSSEX	OWNER	PRIVATE	MILEPOINT	0.0	
NAME & FEATURE INTERSECTED	DINGMANS FERRY BRIDGE OVER DELAWARE RIVER			FACILITY	CR 521			
TOWNSHIP	SANDYSTON TOWNSHIP							
TYPE	THRU TRUSS	DESIGN	BALTIMORE				MATERIAL	Wrought Iron
# SPANS	3	LENGTH	547 ft	WIDTH	17.3 ft			
CONSTRUCTION DT	1890ca	ALTERATION DT	1900		SOURCE	OWNERS RECORDS		
DESIGNER/PATENT					BUILDER			

SETTING / CONTEXT The privately-owned bridge carries a 1-lane 2-way collector road over a major river forming the border between New Jersey and Pennsylvania. The area was settled by Andrew Dingman in 1735, and he operated a ferry here until the first bridge was constructed by the Dingman's Choice and Delaware Bridge Company, chartered in 1834. According to company sources, the present truss bridge was originally erected at Laceyville, PA (c.1890) and moved to the site in 1900.

1995 SURVEY RECOMMENDATION Eligible **HISTORIC BRIDGE MANAGEMENT PLAN (EVALUATED)** No
CONSULT STATUS Individually Eligible.
CONSULT DOCUMENTS SHPO Letter 6/30/95

SUMMARY The 3-span Baltimore thru truss bridge supported on a masonry substructure has 2-rail metal railings. The bridge has minor alterations to the truss diagonal members. The span is technologically significant because it is a well-preserved example of an unusual truss design and for its use of patented Phoenix columns and connecting pieces. The span is located at an important crossing in an area settled in 1735. It is privately owned is operated under the original bridge company charter of 1834.

INFORMATION

PHOTO: 1905:4-7,1906:20-27 (08/92) REVISED BY (DATE): QUAD: Culvers Gap