

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



**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	0500006	<b>CO</b>	CAPE MAY	<b>OWNER</b>	COUNTY	<b>MILEPOINT</b>	0.0
<b>NAME &amp; FEATURE INTERSECTED</b>	STONE HARBOR BOULEVARD OVER GREAT CHANNEL		<b>FACILITY</b>	STONE HARBOR BOULEVARD			
<b>TOWNSHIP</b>	STONE HARBOR BOROUGH						
<b>TYPE</b>	DOUBLE LEAF BASCULE	<b>DESIGN</b>	RALL			<b>MATERIAL</b>	Steel
<b># SPANS</b>	11	<b>LENGTH</b>	905 ft	<b>WIDTH</b>	22.3 ft		
<b>CONSTRUCTION DT</b>	1930	<b>ALTERATION DT</b>	1984	<b>SOURCE</b>	COUNTY ENGINEER		
<b>DESIGNER/PATENT</b>	STROBEL STEEL BRIDGE COMPANY			<b>BUILDER</b>			

**SETTING / CONTEXT** The bridge carries 2-lanes of traffic and a single sidewalk over Great Channel. To the east is downtown Stone Harbor with a mixture of modern and early 20th-century residential and commercial buildings. To the west are a motel, restaurant, marina and housing development. The bridge is part of the causeway that connects Stone Harbor with the mainland. Great Channel is a part of the Intercoastal Waterway.

**1995 SURVEY RECOMMENDATION** Eligible **HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )** No  
**CONSULT STATUS** Individually Eligible.  
**CONSULT DOCUMENTS** SHPO Finding 03/08/83, Letter 6/30/95.

**SUMMARY** The bridge is a 1930 Rall double-leaf bascule with ten prestressed concrete box beam approach spans (1984). It is New Jersey's only known example of a Rall-type bascule, a rare and technologically distinguished movable bridge type. The bascule moves both vertically and horizontally by means of pinions that engage pivoted racks, trunnions nested in rollers, and pinned swing struts. The bascule retains its integrity, and in 1983 was found eligible for its technological significance.

**INFORMATION**

PHOTO: 189:22-27 (10/04/92) REVISED BY (DATE): QUAD: Stone Harbor

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

<b>STRUCTURE #</b>	0500007	<b>CO</b>	CAPE MAY	<b>OWNER</b>	COUNTY	<b>MILEPOINT</b>	1.3
<b>NAME &amp; FEATURE INTERSECTED</b>	LAFAYETTE STREET (NJ 109) OVER CAPE ISLAND CREEK			<b>FACILITY</b>	LAFAYETTE STREET (NJ 109)		
<b>TOWNSHIP</b>	CAPE MAY CITY						
<b>TYPE</b>	DECK GIRDER	<b>DESIGN</b>		<b>MATERIAL</b>	Steel		
<b># SPANS</b>	1	<b>LENGTH</b>	107 ft	<b>WIDTH</b>	27 ft		
<b>CONSTRUCTION DT</b>	1927	<b>ALTERATION DT</b>	1974	<b>SOURCE</b>	COUNTY ENGINEER		
<b>DESIGNER/PATENT</b>				<b>BUILDER</b>			

**SETTING / CONTEXT** The bridge carries 2 lanes of traffic and 2 sidewalks over Cape Island Creek. The creek forms the northern boundary of the Cape May Historic District, a Victorian era residential and resort community. No historic structures are adjacent the bridge. To the south are condominiums and a gas station. To the northeast is a marina. The bridge was built outside the period of significance of the historic district.

**1995 SURVEY RECOMMENDATION** Not Eligible

**HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )** No

**CONSULT STATUS** Not Individually Eligible.

**CONSULT DOCUMENTS** SHPO Finding 11/29/90

**SUMMARY** In 1927 the bridge was originally constructed as a double-leaf trunnion bascule with haunched deck girder superstructure and concrete substructure. In 1974 the bascule was fixed in the closed position with welded plates, and the operating machinery and houses were removed. Sidewalks with metal railings were added, and the approaches rebuilt. The altered bridge is not a contributing resource to the historic district, and is not historically or technologically distinguished.

**INFORMATION**

PHOTO: 189:17-18 (10/04/92)

REVISED BY (DATE):

QUAD: Cape May





NEW JERSEY HISTORIC BRIDGE DATA

<b>STRUCTURE #</b>	0500017	<b>CO</b>	CAPE MAY	<b>OWNER</b>	COUNTY	<b>MILEPOINT</b>	0.0	
<b>NAME &amp; FEATURE INTERSECTED</b>	STONE HARBOR BOULEVARD OVER SCOTCH BONNET			<b>FACILITY</b>	STONE HARBOR BOULEVARD			
<b>TOWNSHIP</b>	MIDDLE TOWNSHIP							
<b>TYPE</b>	STRINGER	<b>DESIGN</b>					<b>MATERIAL</b>	Steel
<b># SPANS</b>	26	<b>LENGTH</b>	324 ft	<b>WIDTH</b>	22.3 ft			
<b>CONSTRUCTION DT</b>	1930	<b>ALTERATION DT</b>					<b>SOURCE</b>	COUNTY ENGINEER
<b>DESIGNER/PATENT</b>					<b>BUILDER</b>	ATLANTIC CONSTRUCTION CO		
<b>SETTING / CONTEXT</b>	The bridge carries two lanes of traffic over Scotch Bonnet, a tidal estuary. Running along the north side, parallel to, but not abutting the bridge, is a timber stringer pedestrian bridge. The pedestrian walkway is built on the substructure of the former Stone Harbor Terminal Railroad bridge originally constructed in 1912. On either side of the bridge are undistinguished twentieth-century summer homes.							
<b>1995 SURVEY RECOMMENDATION</b>	Not Eligible			<b>HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )</b>	No			
<b>CONSULT STATUS</b>	Not Individually Eligible.							
<b>CONSULT DOCUMENTS</b>	SHPO Finding 7/9/90							

**SUMMARY** The 26-span bridge has a single 25'-long steel stringer span at mid-bridge, and 25 timber stringer spans, 12 to the west and 13 to the east. The steel stringer spans a shallow navigable waterway. The bridge has braced timber piles with timber cap beam bents, sheet pile abutments, a timber deck with an asphalt wearing surface, and pipe railings. Beam guide rails have been added. The bridge is a common type, and is not historically or technologically distinguished.

**INFORMATION**

PHOTO: 189:19-21 (10/04/92)                      REVISED BY (DATE):                      QUAD: Stone Harbor

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

<b>STRUCTURE #</b>	0500019	<b>CO</b>	CAPE MAY	<b>OWNER</b>	COUNTY	<b>MILEPOINT</b>	0.0	
<b>NAME &amp; FEATURE INTERSECTED</b>	MARSHALLVILLE ROAD OVER MILL CREEK			<b>FACILITY</b>	MARSHALLVILLE ROAD			
<b>TOWNSHIP</b>	UPPER TOWNSHIP							
<b>TYPE</b>	PNY TRUSS	<b>DESIGN</b>	WARREN				<b>MATERIAL</b>	Steel
<b># SPANS</b>	1	<b>LENGTH</b>	33 ft	<b>WIDTH</b>	14.8 ft			
<b>CONSTRUCTION DT</b>	1901	<b>ALTERATION DT</b>	1990ca		<b>SOURCE</b>	COUNTY ENGINEER		
<b>DESIGNER/PATENT</b>	UNKNOWN			<b>BUILDER</b>	UNKNOWN			

**SETTING / CONTEXT** The bridge carries a single-lane of traffic over Mill Creek near the creek's confluence with the Tuckahoe River. The bridge is located within the boundaries of the Marshallville Historic District, a nineteenth and early-twentieth century community. Well-preserved brick and wood-frame residential structures line Marshallville Road on both sides of the bridge.

**1995 SURVEY RECOMMENDATION** Eligible **HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )** No  
**CONSULT STATUS** Individually Eligible. Listed. Marshallville Historic District. 11/28/1989. Contributing.  
**CONSULT DOCUMENTS** SHPO Letter 03/12/01

**SUMMARY** The 1-span bridge is a three-panel, rivet-connected Warren pony truss composed of standard steel sections. The bridge has masonry abutments and wingwalls, pipe railings, and a plank deck. Minor alterations include reinforcing the bearings and lower chords with bolted plates and angles (c.1990), steel stringers paired with timber stringers, concrete toe walls, and beam guide rails. The truss bridge is the only example of its type in the county. Thus the bridge is individually eligible for listing in the National Register of Historic Places under Criterion C and is a contributing element of the Marshallville Historic District under Criteria A.

**INFORMATION**

PHOTO: 428:30a-34a (01/19/93 JPH (5/96))      REVISED BY (DATE):      QUAD: Tuckahoe



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



**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	0500028	<b>CO</b>	CAPE MAY	<b>OWNER</b>	PRIVATE	<b>MILEPOINT</b>	0.0
<b>NAME &amp; FEATURE INTERSECTED</b>	OCEAN HIGHWAY OVER GREAT CHANNEL			<b>FACILITY</b>	OCEAN HIGHWAY		
<b>TOWNSHIP</b>	STONE HARBOR BOROUGH			<b>DESIGN</b>	TRUNNION		
<b>TYPE</b>	SINGLE LEAF BASCULE	<b>LENGTH</b>	1535 ft	<b>WIDTH</b>	19.7 ft		
<b># SPANS</b>	32	<b>DESIGN</b>	TRUNNION			<b>MATERIAL</b>	Steel
<b>CONSTRUCTION DT</b>	1939	<b>ALTERATION DT</b>				<b>SOURCE</b>	PLAQUE
<b>DESIGNER/PATENT</b>	ASH, HOWARD, NEEDLES & TAMMEN			<b>BUILDER</b>	BETHLEHEM STEEL COMPANY		

**SETTING / CONTEXT** The bridge carries two lanes of traffic and two sidewalks over a navigable channel south of Stone Harbor. North of the bridge are late-20th century summer residences. South of the bridge is a small undeveloped island and salt marshes. The bridge is privately-operated by the Cape May County Bridge Commission.

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

**SUMMARY** The 32 span bridge has a 57' single-leaf haunched deck girder trunnion bascule main span and 31 deck girder and stringer approach spans. The bridge is finished with metal railings. It is one of 4 well preserved Ash Howard Needles & Tammen-designed bascule bridges built 1938-1940 on the Ocean Highway for the Cape May County Bridge Comm. with WPA funding. The group represents a major civic improvement, and all the bridges are historically and technologically distinguished.

**INFORMATION**

**Bibliography:**  
 Brown, Kathi Ann. Design By Diversity. Kansas City, Missouri: The Lowell Press, 1989.  
 Cape May County Bridge Commission. Minutes 1934-1940.  
 New Jersey Laws, Session of 1910.  
 Seely, Bruce. Building the American Highway System. Philadelphia: Temple University Press, 1989.

**Physical Description:** The main span of the 32-span bridge is a 57'-long haunched deck girder with floor beams single-leaf trunnion bascule with a steel grid deck. The concrete counterweight is affixed to the underside of the tail end of the movable span. The approach spans are stringers and built-up deck girders supported on concrete pier bents with concrete cap beams for the stringers and braced concrete columns for the girders and movable leaf. A metal railing and safety sidewalks flank the roadway of the entire span. The cantilevered flat-roofed concrete Moderne-style operator's house on the inland side of the movable leaf is matched by a corresponding lookout with a bench on the ocean side. The bridge opens seasonally.

With the exception of the operator's control panel, which was placed in 1991, The operating mechanisms are primarily original or in kind replacements. The bridge operates by means of a pinion that engages a rack fixed to the outside of the girder near the trunnion. The enclosed primary and open secondary reducers and open drive gear sets are original as are the trunnions and supporting columns. The bridge is powered by an electrical motor. The machinery brake is original.

**Historical and Technological Significance:** The bridge over Great Channel is one of four nearly identical trunnion movable bridges designed by Ash Howard Needles & Tammen that were built under one contract for the Cape May County Bridge Commission in 1938-1940. The bridges were opened to the traveling public June 1940. The span is a well preserved representative example of what is the most common movable bridge type in the Jersey Shore region. Technologically it represents mid-1920s refinements in the important trunnion bascule bridge design developed in the early years of the 20th century. It is one of over a dozen of the same patented design built in the area between 1928 and 1940. Another was built on the Ocean Highway over Corsons Inlet for the Cape May Bridge Commission in 1947-48. Historically the bridges are monuments to the effectiveness of Depression-era New Deal programs to improve America's infrastructure (criteria A, C).

The Cape May County Bridge Commission was established by the county in 1934 for the purpose of having a means to apply for Federal Emergency Administration of Public Works funds to build movable bridges over navigable channels and two fixed bridges on the Ocean Highway in the county. A quasi-public commission, the original members were George N. Smith from Wildwood Crest, Luther C. Ogden, a former county Freeholder, of Cape May City, and G. W. Bergner, mayor of Avalon. The purpose of the commission was to "finance, construct, maintain, and operate self-liquidating toll bridges within the county." Having the private commission meant that the bridges could be constructed without cost to the county. Improving vehicular access to the Shore resort communities was viewed as a means of balancing the decline of train service to the tourist and seasonal-resident oriented area.

Ocean Highway was a route designation enacted by the 1910 New Jersey Senate and General Assembly (Chapter 220). The highway was to stretch from Atlantic Highlands in Monmouth County to Cape May City in Cape May County along, "as far as possible," improved existing roads near the ocean. The Commissioner of Public Roads was authorized to make route improvements where necessary with a \$50,000. appropriation from the vehicle license fund. The improvements were made to the roadway over the next four years, but bridges were not a part of that work.

Ocean Highway was an element in the promotion of the Jersey Shore as a tourist and seasonal residence area. The route, which incorporates local and county streets, does not possess the integrity of setting nor technological significance to be evaluated as a potential historic district. It is merely a route designation that in Cape May County was promoted as the shortest route from Atlantic City to Cape May City.

The consulting engineer firm of Ash Howard Needles & Tammen (AHNT) from New York City played a pivotal role in the history of the bridge commission. By 1934, the firm, founded in Kansas City, Missouri in 1914 as the successor to one started by J.A.L. Waddell, had



NEW JERSEY HISTORIC BRIDGE DATA

established itself nationally as one of the leading designers of movable bridges, especially vertical lift bridges. Waddell was associated with the firm until he and John Harrington went their separate ways in 1914. The company opened its New City office in 1922 under the leadership of Harrington, Howard, and Ash. Work-relief program funded projects were an important source of work for AHNT, as it was for most engineering firms during the Depression, and the Cape May Ocean Highway bridges were a sustaining project for the New York office. The AHNT patent associated with the design of this particular bridge relates to the trunnion tower, and it was granted in 1926.

It was reported at the May 22, 1935 annual meeting of the Cape May County Bridge Commission that AHNT attended the meeting, and that they had prepared, on behalf of the commission, the actual application, complete with plans and specifications, to the Federal Administration of Public Works for \$1,650,000 to build the Ocean Highway bridges. The application was not approved until June 14, 1938, at which time \$744,545 was a grant and \$910,000 was a loan. Work on the bridges began immediately.

The funding from the Federal Administration of Public Works met several objectives of various federal programs. It provided work for the unemployed. It was anticipated that between 350 and 500 local men would be put to work in addition to many "outside men," (CMCBC Minutes, 7/1/38). The bridges would improve traffic and focus on efficiency, as defined in engineering terms, which was a goal of the Bureau of Public Roads. Work relief-funded projects like the Cape May County Ocean Highway bridges kept the golden age of highway development alive during the Depression, when the lack of state and local funds would otherwise have stopped the effort (Seely, p. 88-91).

The four AHNT-designed movable bridges built on the Ocean Highway (3100003, 0500028, 3100005, 3100006) are all evaluated as significant because all are in a nearly complete state of preservation. The fact that they were built with funds made available through the federal government in an effort to create work is not sufficiently significant enough to meet National Register criteria because so many public works projects during the mid- to late-1930s were funded exactly the same way. The bridges were also not built with federally funded work crews such as the Civilian Conservation Corps (CCC).

Boundary Description and Justification: The bridge is evaluated as individually distinguished. While its immediate setting remains unchanged, the route of which it is a part does not possess the integrity or historical significance to be a potential historic district. Therefore, the bridge including the approach spans and structures related to its operation are evaluated as the limit of the historic resource. It is one of four movable bridges of similar design and date built under one contract for the Cape May County Bridge Commission.

PHOTO: 427:28-34 (10/04/93)

REVISED BY (DATE):

QUAD: Stone Harbor







NEW JERSEY DEPARTMENT OF TRANSPORTATION  
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NEW JERSEY HISTORIC BRIDGE DATA

**STRUCTURE #** 0507153      **CO** CAPE MAY      **OWNER** NJDOT      **MILEPOINT** 15.94  
**NAME & FEATURE INTERSECTED** NJ 47 OVER SLUICE CREEK      **FACILITY** NJ 47  
**TOWNSHIP** DENNIS TOWNSHIP  
**TYPE** STRINGER      **DESIGN** ENCASED      **MATERIAL** Steel  
**# SPANS** 1      **LENGTH** 35 ft      **WIDTH** 40 ft  
**CONSTRUCTION DT** 1935      **ALTERATION DT**      **SOURCE** INSCRIPTION  
**DESIGNER/PATENT** NJ STATE HWY DEPT BRIDGE DIV      **BUILDER**

**SETTING / CONTEXT** The bridge carries two lanes with shoulders over a tidal creek. Next to the bridge is an undeveloped salt meadow. The surrounding area is rural with fields, forests, and scattered 18th, 19th, and 20th century residences.

**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 bridge is an encased steel stringer structure with concrete balustrades and substructure. Beam guide rails have been added. In 1935 the bridge was constructed as part of the New Jersey Route South 49 improvements. The route was later designated New Jersey Route 47. The bridge is a common New Jersey State Highway Department bridge type and design. It is not historically or technologically distinguished.

**INFORMATION**

PHOTO: 428:9a-10a (10/04/92)

REVISED BY (DATE):

QUAD: Woodbine



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

<b>STRUCTURE #</b>	0508151	<b>CO</b>	CAPE MAY	<b>OWNER</b>	NJDOT	<b>MILEPOINT</b>	18.44
<b>NAME &amp; FEATURE INTERSECTED</b>	NJ 47 OVER BRANCH OF DENNIS CREEK			<b>FACILITY</b>	NJ 47		
<b>TOWNSHIP</b>	DENNIS TOWNSHIP						
<b>TYPE</b>	SLAB	<b>DESIGN</b>		<b>MATERIAL</b>	Reinforced Concrete		
<b># SPANS</b>	1	<b>LENGTH</b>	22 ft	<b>WIDTH</b>	30.1 ft		
<b>CONSTRUCTION DT</b>	1928	<b>ALTERATION DT</b>		<b>SOURCE</b>	INSCRIPTION		
<b>DESIGNER/PATENT</b>	NJ STATE HWY DEPT BRIDGE DIV			<b>BUILDER</b>			

**SETTING / CONTEXT** The 2-lane bridge spans the spillway from Johnson's Mill Pond. Extending between the bridge's downstream abutments is the spillway's 2-bay wood gate frame with wood gates. The bridge is within the boundaries of the Dennisville Historic District, a 18th- and 19th-century maritime related village. The main block of the historic village is located 300' northeast of the bridge. No historic structures are immediately adjacent to the bridge.

**1995 SURVEY RECOMMENDATION** Not Eligible **HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )** No  
**CONSULT STATUS** Not Individually Eligible. Listed. Dennisville Historic District. 11/24/1987. Noncontributing.  
**CONSULT DOCUMENTS** SHPO Letter 6/30/95

**SUMMARY** The single-span reinforced-concrete slab bridge has concrete balustrades and substructure. Beam guide rails have been added. In 1928 the bridge was constructed as part of the New Jersey Route 49 improvements. It is a representative example of a common NJ State Highway Department bridge type. It is not within the period of significance of the Dennisville Historic District, and does not contribute to the district. It is not historically or technologically distinguished.

**INFORMATION**

PHOTO: 185:1,44 (10/03/92)

REVISED BY (DATE):

QUAD: Woodbine

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

**STRUCTURE #** 0508154      **CO** CAPE MAY      **OWNER** NJDOT      **MILEPOINT** 24.45  
**NAME & FEATURE INTERSECTED** NJ 47 OVER WEST CREEK      **FACILITY** NJ 47  
**TOWNSHIP** DENNIS TOWNSHIP  
**TYPE** STRINGER      **DESIGN** ENCASED      **MATERIAL** Steel  
**# SPANS** 1      **LENGTH** 37 ft      **WIDTH** 30 ft  
**CONSTRUCTION DT** 1925      **ALTERATION DT** Demolished      **SOURCE** INSCRIPTION  
**DESIGNER/PATENT** NJ STATE HWY DEPT BRIDGE DIV      **BUILDER**

**SETTING / CONTEXT** The two-lane bridge spans West Creek, which forms the border between Cape May and Cumberland Counties. The creek meanders through a salt meadow. The surrounding area borders the Delaware Bay, and is undeveloped with woods and wetlands.

**1995 SURVEY RECOMMENDATION** Not Eligible      **HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )** No  
**CONSULT STATUS** Bridge was Not Individually Eligible.  
**CONSULT DOCUMENTS** SHPO Finding 6/6/91

**SUMMARY** The single-span encased steel stringer bridge has concrete balustrades on the clear span and paneled parapets on the approaches. The concrete abutments are scored. The encasement has been removed from the fascia stringers. In 1925 the bridge was constructed as part of improvement to NJ Route 15, later redesignated NJ Route 47. It is a representative example of a common NJ State Highway Department bridge type and design, and it is not historically or technologically distinguished.

**INFORMATION**

PHOTO: 185:41-43 (10/03/92)

REVISED BY (DATE):

QUAD: Heislerville

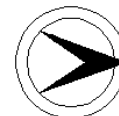








**NEW JERSEY DEPARTMENT OF TRANSPORTATION  
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**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	0510152	<b>CO</b>	CAPE MAY	<b>OWNER</b>	NJDOT	<b>MILEPOINT</b>	6.9	
<b>NAME &amp; FEATURE INTERSECTED</b>	NJ 50 OVER TUCKAHOE RIVER			<b>FACILITY</b>	NJ 50			
<b>TOWNSHIP</b>	UPPER TOWNSHIP			<b>DESIGN</b>	STRAUSS UNDERNEATH		<b>MATERIAL</b>	Steel
<b>TYPE</b>	SINGLE LEAF BASCULE		<b>LENGTH</b>	160 ft	<b>WIDTH</b>	30 ft		
<b># SPANS</b>	3	<b>CONSTRUCTION DT</b>	1926	<b>ALTERATION DT</b>	1961	<b>SOURCE</b>	PLANS	
<b>DESIGNER/PATENT</b>	STRAUSS BASCULE BRIDGE COMPANY			<b>BUILDER</b>	S. S. THOMPSON, RED BANK			

**SETTING / CONTEXT** The bridge carries two lanes of traffic over the Tuckahoe River, the border between Cape May and Atlantic Counties. The village of Tuckahoe, located south of the bridge on NJ 50, has several well-preserved buildings but has too many modern intrusions to merit historic district status. To the north are wetlands with a scattering of late-20th century residential development. The river's southern bank is lined with boat docks. The bridge opens to navigation with 24 hours notice.

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

**SUMMARY** The main span of the 3 span bridge is a single-leaf Strauss underneath articulated counterweight deck girder movable span flanked by encased deck girder approach spans. The bridge appears to survive in a good state of preservation with its original gear sets, gasoline engine, operator's house, locks, and safety gates. A steel grid deck was added in 1961. The bridge is a complete example of a historically and technologically significant patented movable bridge type.

**INFORMATION** Bibliography:  
Hool & Kinne. Movable and Long Span Bridges. 1943. "J.B. Strauss Dies at Los Angeles." Engineering News-Record. 120 (May 19,1938).  
NJDOT: Bridge File: 0510152. Waddell, J.A.L. Bridge Engineering. 1925.

**Physical Description:** The main span of the 3-span 160'-long bridge is a single-leaf deck girder Strauss articulated underneath counterweight movable span. The approach spans are built-up deck girders. The substructure is concrete. With the exception of the replacement of the original gasoline engine with an electric motor (gasoline engine is the current auxiliary power source) and the steel grid deck placed in 1961, the bridge appears to survive in a nearly complete state of preservation. Both the movable leaf and the approach spans are enclosed by metal railings. The operator's house is located on a braced metal frame on the upstream outside of the movable leaf. It is a simple galvanized-metal clad gable-roofed structure. The interior was not inspected. The safety gates are original as are the manually activated toe locks.

The shafting, open gear sets, and racks and pinions appear to be original as does the gearing for manual operation. Because of the need to protect the electrical from water damage, the reduction of torque is accomplished through a series of shafts and bevel gear sets rather than straight shafts. This design is not uncommon when field conditions mandate that the power source be elevated to protect it. The trunnions are supported by built-up trunnion columns that bear on a concrete pier.

**Historical and Technological Significance:** The 1926 Strauss articulated underneath counterweight bridge over the Tuckahoe River is a complete example of the patented design that represents a milestone in the development of movable spans technology (criterion C). Although built near the end of the period of popularity of the design, the bridge documents the design that made J.B. Strauss (1869-1937) the most prominent engineer of movable span bridges in the early 20th century.

Strauss's patented bascule bridges were based upon an innovation on traditional bascule bridge construction. He reasoned if, unlike earlier bascule bridge designs that used a fixed counterweight and operated like a seesaw, he designed a bascule where the entire weight of the counterweight was concentrated at the tail end of the movable leaf, it would then be possible to use a lighter counterweight. Strauss was able to achieve this end through a linkage, or arms, that ensured that the counterweight moved in a series of parallel positions at all times when the span was in operation, and thus constantly maintained the position of the weight at the tail end of the leaf. Variations on the linkage could place the counterweight either overhead or underneath of the leaf. The design also held the advantage that less power was needed to start or stop the bascule's motion and the tail end was shorter thus reducing or eliminating the counterweight pit. In 1905 the first of Strauss's bridges was built in Cleveland, and in the same year he applied for a patent (995,813), granted in 1911. Strauss designed and marketed the immensely successful bridge through the Strauss Bascule Bridge Company of Chicago. Mainly through the efforts of Strauss, the bascule replaced the swing span bridge as the most popular movable span highway bridge type. In spite of the many movable bridges in this country for which Strauss was responsible, he is more often remembered as the chief engineer of the Golden Gate Bridge (1937) in San Francisco, California.

The technological significance of the NJ 50 over Tuckahoe River bridge is enhanced by its state of preservation and nearly complete original operating mechanical systems. It was built in 1926 on New Jersey Route 14, one of the original 15 state highway routes, and replaced a preexisting swing span bridge. The general contractor of the span was S. S. Thompson of Red Bank, Monmouth County, a company that was active in the construction of bridges throughout the state. When the electric motor was installed to replace the original gasoline engine is unknown. In 1961 a steel grid deck replaced original timber flooring. The bridge opens on 24 hours notice. In New Jersey there are at least eight other examples of Strauss bascule highway bridges including in Cape May County NJ 147 over Grassy Sound (0517151, Middle Township), a double leaf bascule with underneath counterweight constructed in 1922.

**Boundary Description and Justification:** The bridge is evaluated as individually significant. The boundary is limited to the span itself, superstructure and substructure. The surrounding area does not have historic district potential.

PHOTO: 427:10-21 (01/19/93) REVISED BY (DATE): QUAD: Tuckahoe

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

**STRUCTURE #** 0511150      **CO** CAPE MAY      **OWNER** NJDOT      **MILEPOINT** 0.13  
**NAME & FEATURE INTERSECTED** NJ 52 OVER BEACH THOROFARE      **FACILITY** NJ 52  
**TOWNSHIP** OCEAN CITY  
**TYPE** SINGLE LEAF BASCULE      **DESIGN** TRUNNION      **MATERIAL** Steel  
**# SPANS** 37      **LENGTH** 1025 ft      **WIDTH** 40 ft  
**CONSTRUCTION DT** 1933      **ALTERATION DT** 1988      **SOURCE PLANS**  
**DESIGNER/PATENT** ASH, HOWARD, NEEDLES & TAMMEN      **BUILDER** MERRITT, CHAPMAN & SCOTT

**SETTING / CONTEXT** The 4-lane wide bridge with one safety sidewalk spans Beach Thorofare, a navigable channel at the mouth of the Great Egg Harbor. The bridge is the southernmost span that is part of a causeway with 4 bridges (2 movable, 2 fixed) spanning between Somers Point on the north and Ocean City to the south. South of the bridge is a densely developed late-twentieth century summer residential community with marina.

**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 35-span bridge is composed of a single-leaf trunnion bascule main span and 32 reinforced-concrete T-beam approach spans. The 70'-long haunched deck girder with floor beams movable span has a fixed counterweight and metal railing. It was rehabilitated in 1988 with new enclosed primary reducer gears, electrical systems, controls, and a third story added to the operator's house. The bridge is an altered example of a locally common type, and the alterations reduce its technological significance.

**INFORMATION**

**PHOTO:** 188:36-44, 1-3 (10/03/92)

**REVISED BY (DATE):**

**QUAD:** Ocean City

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

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<b>STRUCTURE #</b>	0511151	<b>CO</b>	CAPE MAY	<b>OWNER</b>	NJDOT	<b>MILEPOINT</b>	0.76	
<b>NAME &amp; FEATURE INTERSECTED</b>	NJ 52 OVER RAINBOW THOROFARE			<b>FACILITY</b>	NJ 52			
<b>TOWNSHIP</b>	OCEAN CITY							
<b>TYPE</b>	T BEAM	<b>DESIGN</b>					<b>MATERIAL</b>	Reinforced Concrete
<b># SPANS</b>	91	<b>LENGTH</b>	1820 ft	<b>WIDTH</b>	40 ft			
<b>CONSTRUCTION DT</b>	1933	<b>ALTERATION DT</b>				<b>SOURCE</b>	NJDOT	
<b>DESIGNER/PATENT</b>	NJ STATE HWY DEPT BRIDGE DIV			<b>BUILDER</b>	EASTERN ENGINEERING CO.			

**SETTING / CONTEXT** The bridge carries four lanes of traffic over Rainbow Thorofare, a channel at the mouth of the Great Egg Harbor River. The bridge is the second from the south of a 4-bridge causeway (2 movable, 2 fixed) spanning between Somers Point and Ocean City to the south. The manmade island to the north of the Rainbow Thorofare bridge is undeveloped. The island to the south has a trailer that houses a tourist information center.

**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 91-span reinforced-concrete T-beam bridge has concrete abutments, concrete pile bents with cap beams, and concrete railings. Beam guide rails have been added. In 1933 the bridge and causeway were constructed as part of a NJ State Highway Department improvement project that replaced a previous bridge. The Rainbow Thorofare bridge is a multi-span example of a common 20th-century bridge type, and is not historically or technologically distinguished.

**INFORMATION**

PHOTO: 185:23-27 (10/03/92)

REVISED BY (DATE):

QUAD: Ocean City

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
BUREAU OF ENVIRONMENTAL SERVICES



NEW JERSEY HISTORIC BRIDGE DATA

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<b>STRUCTURE #</b>	0511152	<b>CO</b>	CAPE MAY	<b>OWNER</b>	NJDOT	<b>MILEPOINT</b>	1.53
<b>NAME &amp; FEATURE INTERSECTED</b>	NJ 52 OVER ELBOW THOROFARE			<b>FACILITY</b>	NJ 52		
<b>TOWNSHIP</b>	OCEAN CITY						
<b>TYPE</b>	T BEAM	<b>DESIGN</b>		<b>MATERIAL</b>	Reinforced Concrete		
<b># SPANS</b>	22	<b>LENGTH</b>	440 ft	<b>WIDTH</b>	40 ft		
<b>CONSTRUCTION DT</b>	1933	<b>ALTERATION DT</b>		<b>SOURCE</b>	NJDOT		
<b>DESIGNER/PATENT</b>	NJ STATE HWY DEPT BRIDGE DIV			<b>BUILDER</b>	EASTERN ENGINEERING CO.		

**SETTING / CONTEXT** The four-lane bridge spans Elbow Thorofare, a channel at the mouth of the Great Egg Harbor River. The bridge is the second from the north of a causeway with 4 bridges (2 movable, 2 fixed) spanning between Somers Point to the north and Ocean City to the south. The Elbow Thorofare bridge spans the channel between two undeveloped manmade islands.

**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 22-span reinforced-concrete T-beam bridge has concrete abutments with wingwalls, concrete pile bents with concrete caps, and concrete railings. Beam guide rails have been added. In 1933 the bridge and causeway were constructed as part of a NJ State Highway Department improvement project that replaced a previous bridge. It is a multi-span example of a common 20th-century bridge type, and is not historically or technologically distinguished.

**INFORMATION**

PHOTO: 185:20-22 (10/03/92)

REVISED BY (DATE):

QUAD: Ocean City



NEW JERSEY HISTORIC BRIDGE DATA

<b>STRUCTURE #</b>	0511153	<b>CO</b>	CAPE MAY	<b>OWNER</b>	NJDOT	<b>MILEPOINT</b>	1.91
<b>NAME &amp; FEATURE INTERSECTED</b>	NJ 52 OVER SHIP CHANNEL			<b>FACILITY</b>	NJ 52		
<b>TOWNSHIP</b>	OCEAN CITY			<b>DESIGN</b>	TRUNNION		
<b>TYPE</b>	SINGLE LEAF BASCULE		<b>LENGTH</b>	1442 ft	<b>WIDTH</b>	40.3 ft	
<b># SPANS</b>	47	<b>ALTERATION DT</b>	1988	<b>SOURCE</b>	PLANS		
<b>CONSTRUCTION DT</b>	1933	<b>DESIGNER/PATENT</b>	ASH, HOWARD, NEEDLES & TAMMEN		<b>BUILDER</b>	EASTERN ENGINEERING CO	

**SETTING / CONTEXT** The 4-lane bridge with one safety sidewalk spans Ship Channel, a navigable channel at the mouth of the Great Egg Harbor River. The bridge is the northernmost of 4 bridges (2 movable, 2 fixed) that are part of a causeway between Ocean City to the south and Somers Point to the north. North of the Ship Channel bridge is the Somers Point traffic circle, and south of the bridge is an undeveloped island. The traffic circle is surrounded by modern commercial development.

**1995 SURVEY RECOMMENDATION** Eligible **HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )** No  
**CONSULT STATUS** Individually Eligible. Potential Somers Point Traffic Signal Historic District. May contribute.  
**CONSULT DOCUMENTS** SHPO Letter 03/12/01

**SUMMARY** The 47-span bridge has a 50' single-leaf trunnion bascule main span, 8 deck girder spans, and 38 reinforced-concrete T-beam approach spans. The bascule is a haunched deck girder with floor beams and a fixed counterweight. The span was rehabilitated in 1988 with new electric systems and controls and a third story added to the concrete operator's house. Despite the updated equipment, the span retains most of its original fabric and is a technologically significant example of the bridge type. It is individually eligible for listing in the National Register of Historic Places under Criterion C. It may also be a contributing element of a Somers Point traffic circle historic district should such a district be identified in the future.

**INFORMATION**

**Bibliography:**  
Brown, Kathi Ann. Design by Diversity. Kansas City, Missouri: The Lowell Press, 1989; NJDOT. Bridge File: 0511153.

**Physical Description:** The main span of the 1442'-long bridge with a vertical profile is a single-leaf trunnion bascule with a clear span of 50'. There are 46 approach spans. The span immediately south of the bascule leaf is a haunched deck girder with floor beams that visually matches and balances the movable span. The other seven deck girder approach spans are composed of three deck girders with truss lateral bracing that are supported on braced concrete columns. The other approach spans are reinforced concrete T beams on concrete pile bents with cap beams. The entire bridge is enclosed by 2-rail high concrete railings except on the movable leaf which is finished with a metal balustrade-type railing. Concrete pylons inscribed with the date and route mark the approaches to the long bridge. Any original luminaries affixed to the pylons have been replaced by modern lighting.

The movable leaf is a haunched deck girder with floor beams and an open steel grid deck. It is a simple trunnion with a concrete counterweight set underneath the tail end. There is no counterweight pit. The span is operated by means of a rack and pinion drive activated by a series of reduction gears that transform the high rpm torque generated by the electric motors to the low rpm needed to lift the leaf. The open gear sets and other operating machinery appears to be original or in kind replacement. The electrical systems and controls, however, are modern, and were placed in 1988. At that time a third level was added to the operators house to improve visibility of the channel. The addition was designed to match the original styling of the structure. The windows and doors were also replaced in 1988. The signals and crash and safety barriers are new as well.

**Historical and Technological Significance:** NJ 52 over Ships Channel is one of six Ash Howard Needles & Tammen-designed standard or simple trunnion bridges in Cape May County, and it is technologically significant as a fairly well preserved example of its type. It still operates as originally designed, and it survives with its original or in kind replacement open sets of reduction gears, rack-and-pinion drives, and built-up deck girder leaf. As such, it is a good example of late-1920s and 1930s movable bridge technology (Criterion C).

The bridge design was successfully marketed by Ash Howard Needles & Tammen to counties, private bridge commissions, and the state after 1927, when members of the firm were issued a patent for an improved span support to resist the various stresses when the bridge is in operation as well as when it was at rest (#1,633,565). The standard trunnion bascule bridge had been in use since the early days of the 20th century, but the AHNT design came to the fore in New Jersey for locations on high piers or with a low water level after 1927. The need to cross active navigable bodies of water coupled with the boon in road improvement programs in the southern part of the state in response to increased traffic volume resulted in over a dozen of AHNT's movable bridges being erected in the four county Jersey Shore region between 1928 and 1948. Some of the popularity of the design may be attributable to the success of the firm's New York City office that was opened in 1922. Movable bridges that retain their original machinery arrangement are evaluated as significant because they are technologically distinguished engineering solutions to a complex problem.

Despite the 1988 modifications to the structure, such as the addition of a third floor to the operator's house and the removal of the original doors and windows, the span retains enough of its original fabric to maintain the integrity of original design.

Ash Howard Needles and Tammen, as the firm of Howard Needles Tammen and Bergendoff was styled in 1933, in large part made its early reputation as a nationally recognized consulting engineer firm through its movable span bridges, especially the vertical lift bridge. The firm's history goes back to 1892 when the noted engineer and author J.A.L. Waddell established his own consulting engineer firm at Kansas City, Missouri. Waddell was well known as the engineer of the 1893 South Halsted Street Bridge in Chicago, the first large-scale, high clearance vertical lift bridge in the country. Waddell was associated with several partners until 1914, when he and John Harrington dissolved the firm, divided the projects, many of which were vertical lift spans, and went their separate ways. Harrington took on new partners, and the firm was styled Harrington, Howard, and Ash. Henry C. Tammen was made a principal in 1928 as was Enoch R. Needles. The patent represented by the NJ 52 bridge was granted to Louis Ash, Henry Tammen, and Harry G. Hunter. The work of the firm is well represented throughout the country, and today it is one of the leading transportation planning concerns in the nation.



NEW JERSEY HISTORIC BRIDGE DATA

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Boundary Description and Justification: The bridge, including the approach spans and substructure, is evaluated as individually significant. The boundary is thus limited to the right-of-way of the span itself.

PHOTO: 185:9-19 (10/03/92)

REVISED BY (DATE):

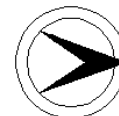
QUAD: Ocean City







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



**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	0517151	<b>CO</b>	CAPE MAY	<b>OWNER</b>	NJDOT	<b>MILEPOINT</b>	2.5
<b>NAME &amp; FEATURE INTERSECTED</b>	NJ 147 OVER GRASSY SOUND			<b>FACILITY</b>	NJ 147		
<b>TOWNSHIP</b>	MIDDLE TOWNSHIP						
<b>TYPE</b>	DOUBLE LEAF BASCULE	<b>DESIGN</b>	STRAUSS UNDERNEATH			<b>MATERIAL</b>	Steel
<b># SPANS</b>	54	<b>LENGTH</b>	712 ft	<b>WIDTH</b>	22 ft		
<b>CONSTRUCTION DT</b>	1922	<b>ALTERATION DT</b>	Demolished: 1995		<b>SOURCE</b>	NJDOT	
<b>DESIGNER/PATENT</b>	STRAUSS BASCULE BRIDGE COMPANY			<b>BUILDER</b>	UNKNOWN		

**SETTING / CONTEXT** The bridge carries two lanes of traffic over Grassy Sound, a part of the Intercoastal Waterway. The area is a salt marsh and meadow with numerous seasonal homes on timber piles lining the highway. South of the bridge is a small marina and seafood restaurant. A new fixed high-rise bridge is being built approximately 500 feet south of the current movable bridge.

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

**SUMMARY** The bridge is a haunched deck girder double-leaf Strauss bascule with 53 timber stringer approach spans. The 1922 bascule articulated underneath counterweights is the earliest surviving example of its type in the county, but it has some alterations. Much of the original fabric remains, including the operating equipment, but it is worn. The west leaf is a 1972 welded replacement of the original lost in an accident. It still remains a noteworthy example of an important and increasingly rare type.

**INFORMATION** Bibliography:  
Hool & Kinne. Movable and Long Span Bridges. 1943; "J.B. Strauss Dies at Los Angeles." Engineering News-Record. 120 (May 19, 1938); NJDOT: Bridge File: 0517151; Waddell, J.A.L. Bridge Engineering. 1925.

Physical Description: The main span of the 54-span 712'-long bridge is a 50'-span double-leaf haunched deck girder Strauss articulated underneath counterweight movable span. The trunnions are supported by built-up trunnion columns that bear on concrete piers. The approach spans, 38 to the east and 15 to the west of the main span, are timber stringers supported on timber pile bents. Both the movable leaves and the approach spans are enclosed by metal pipe railings. The operator's house is located on a braced metal frame on the northwesterly outside of the moveable leaf. It is a simple frame gable-roofed structure with composition siding. The shafting, open gear sets, racks and drive pinions, coffee grinder-type winched manual operation, and electric motors and controls appear to be original. Many elements are worn, and the concrete counterweight is deteriorating. There are no toe locks in use.

The bridge survives in a nearly complete state of preservation with the exception that in 1972 the original western built-up girder leaf with timber deck was replaced with one of welded construction with steel grid deck. The western leaf was lost in an accident when it opened beyond its limits. Other alterations include an extension to the operator's shanty and in 1979 the rebuilding of the eastern timber approach spans after fire damage.

Historical and Technological Significance: The 1922 Strauss articulated underneath counterweight bridge over Grassy Sound is a complete example of the patented design that represents a milestone in the development of movable spans technology (criterion C). Although built near the end of the period of popularity of the design, the bridge documents the design that made J.B. Strauss (1869-1937) the most prominent engineer of movable span bridges in the early 20th century.

Strauss's patented bascule bridges were based upon an innovation on traditional bascule bridge construction. He reasoned if, unlike earlier bascule bridge designs that used a fixed counterweight and operated like a seesaw, he designed a bascule where the entire weight of the counterweight was concentrated at the tail end of the movable leaf, it would then be possible to use a lighter counterweight. Strauss was able to achieve this end through a linkage, or arms, that ensured that the counterweight moved in a series of parallel positions at all times when the span was in operation, and thus constantly maintained the position of the weight at the tail end of the leaf. Variations on the linkage could place the counterweight either overhead or underneath of the leaf. The design also held the advantage that less power was needed to start or stop the bascule's motion and the tail end was shorter thus reducing or eliminating the counterweight pit. In 1905 the first of Strauss's bridges was built in Cleveland, and in the same year he applied for a patent (995,813), granted in 1911. Strauss designed and marketed the immensely successful bridge through the Strauss Bascule Bridge Company of Chicago. Mainly through the efforts of Strauss, the bascule replaced the swing span bridge as the most popular movable span highway bridge type. In spite of the many movable bridges in this country for which Strauss was responsible, he is more often remembered as the chief engineer of the Golden Gate Bridge (1937) in San Francisco, California.

The technological significance of the NJ 147 over Grassy Sound bridge is enhanced by its state of preservation and nearly complete original operating mechanical systems. It was built in 1922 for the county, and jurisdiction was transferred to the state in 1970 when the road became part of the state highway system. In New Jersey there are at least eight other examples of Strauss bascule highway bridges including in Cape May County NJ 50 over the Tuckahoe River (0510152, Upper Township), a single leaf bascule with underneath counterweight constructed in 1926.

Boundary Description and Justification: The bridge is evaluated as individually significant. The boundary is limited to the span itself, superstructure and substructure. Upstream from the bridge is the HPO's identified potential historic district of Grassy Sound that developed along the old railroad right-of-way. The potential district has not been finalized.

PHOTO: 429:2a-13a (10/04/92) REVISED BY (DATE): QUAD: Stone Harbor





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



**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	0564151	<b>CO</b>	CAPE MAY	<b>OWNER</b>	STATE AGENCY	<b>MILEPOINT</b>	60.91
<b>NAME &amp; FEATURE INTERSECTED</b>	OCEAN CITY BRANCH RR OVER EDWARDS CREEK			<b>FACILITY</b>	OCEAN CITY BRANCH RAILROAD		
<b>TOWNSHIP</b>	UPPER TOWNSHIP						
<b>TYPE</b>	STRINGER	<b>DESIGN</b>		<b>MATERIAL</b>	Wood		
<b># SPANS</b>	19	<b>LENGTH</b>	219 ft	<b>WIDTH</b>	4.7 ft		
<b>CONSTRUCTION DT</b>	20th Century	<b>ALTERATION DT</b>		<b>SOURCE</b>	NJDOT		
<b>DESIGNER/PATENT</b>				<b>BUILDER</b>			

**SETTING / CONTEXT** The bridge carries an abandoned single railroad track over an estuary in the broad salt meadows west of Ocean City and east of the Garden State Parkway. The railroad right-of-way was originally developed in 1896-97 by the Ocean City Railroad Company. In 1898 the Philadelphia and Reading Railroad's Atlantic City Railroad Company acquired the line as a competitor to the Pennsylvania Railroad. In 1981 the last passenger train traveled the line.

**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 19-span open-deck timber stringer bridge burned. The remains rests on timber pile bents with timber caps, timber crossbeams, and sheet pile backwalls. The 10 easternmost spans are the most heavily damaged. The bridge has lost its structural integrity and function. Records were not located, however the bridge timbers appear relatively new, suggesting inkind reconstruction within the past 20 years. The bridge was a common type. It is no longer historically or technologically distinguished.

**INFORMATION**

PHOTO: 427:25-27 (01/17/93)

REVISED BY (DATE):

QUAD: Sea Isle City





NEW JERSEY HISTORIC BRIDGE DATA

<b>STRUCTURE #</b>	3100001	<b>CO</b>	CAPE MAY	<b>OWNER</b>	PRIVATE	<b>MILEPOINT</b>	0.0
<b>NAME &amp; FEATURE INTERSECTED</b>	OCEAN HIGHWAY OVER GREAT EGG HARBOR		<b>FACILITY</b>	OCEAN HIGHWAY			
<b>TOWNSHIP</b>	OCEAN CITY						
<b>TYPE</b>	DOUBLE LEAF BASCULE	<b>DESIGN</b>	TRUNNION			<b>MATERIAL</b>	Steel
<b># SPANS</b>	85	<b>LENGTH</b>	3437 ft	<b>WIDTH</b>	21.8 ft		
<b>CONSTRUCTION DT</b>	1928	<b>ALTERATION DT</b>	1977, 1993		<b>SOURCE</b>	PLAQUE	
<b>DESIGNER/PATENT</b>	HARRINGTON, HOWARD & ASH			<b>BUILDER</b>	PHOENIX BRIDGE COMPANY		

**SETTING / CONTEXT** The bridge carries two lanes of traffic and a single sidewalk over the Great Egg Harbor north of Ocean City. South of the bridge is a late 20th-century summer residential community bordering the beach. To the north is a salt marsh and causeway. The bridge is the northernmost of five movable span bridges on Cape May County's Ocean Highway. It is privately owned and operated by the Ocean City Coastal Hwy Bridge Co. It is currently posted for 3 tons.

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

**SUMMARY** The 1928 bridge consists of a double leaf bascule span, 5 deck girder spans, and 79 steel stringer approach spans. The bascule has a two story concrete operators house; original open gearing, electric motors, haunched deck girder superstructure, concrete counterweights, and concrete substructure. The bridge is one of the earliest examples of a movable Harrington, Howard & Ash design in NJ. It is historically distinguished, and a very complete example of its type.

**INFORMATION** Bibliography:  
 Cape May County Bridge Commission. HNTB. "Engineering Report to Cape May County Bridge Commission on Existing Ocean Highway Toll Bridge Cape May County New Jersey," July 1, 1965.  
 Cape May County Bridge Commission. Minutes 1934-1940. Brown, Kathi Ann. Design By Diversity. Kansas City, Missouri: The Lowell Press, 1989. New Jersey Laws, Session of 1910.

Physical Description: The main span of the 3437'-long bridge is a 122'-long double-leaf trunnion haunched deck-girder span with a steel grid deck. The multi-girder approach spans are supported on concrete pile and cap beam bents, and the whole bridge is enclosed by a 3-rail high metal railing installed in 1947-48. Opposing corners of the movable leafs are set with 2-story, flat-roofed concrete operators houses supported on bracketed cantilevers from the concrete piers. The other corners have one-story machinery houses that also serve as lookouts off the safety walks.

Although there have been some changes to the bridge as a result of maintenance and improvements, overall the structure and operating mechanism are complete. The bridge appears and operates as originally designed with the leafs pivoting on the original trunnions. A counterweight is affixed to the tail end of each leaf. The operating machinery, with open gear sets and shafts, appears to be largely original or in kind replacements. The electrical and control systems also appear to be largely original, but the trolley-like control panel and dead men were replaced with a modern panel and wiring in 1993. The safety gates are modern, and the original signals were removed in 1993. The one-story, hip-roofed structure at the south end of the bridge is the original office for the bridge company. It has a modern overhead garage door on the south elevation and an exterior coating added in 1993, but otherwise it complete and contributes to the historical significance of the span. It is now used as a day room.

The original toll booth was replaced by the present one in 1977. There have been repairs to several approach span bents, and the bridge is currently posted for 3 tons.

Historical and Technological Significance: The double-leaf trunnion bridge was built by the Ocean City Coastal Highway Bridge Company and its subsidiary Ocean City Longport Automobile Bridge Company in 1927-1928. The company was chartered by the state legislature in 1927, and they contracted with Harrington, Howard & Ash (later Ash, Howard, Needles & Tammen) of Kansas City, Missouri and New York for the design. The span is the earliest of the bridges between the barrier islands in Cape May and Atlantic counties, and it is the second of the Ash, Howard, Needles & Tammen-design movable spans that would become extremely popular in the region (the earliest is 0406158, US 30 over Cooper River built in 1927). The bridge is significant as an early and remarkably complete example of its type and design, with most of its original operating machinery, and for its historical significance with the practice of being erected by a private-sector organization (criteria A. C.). Technologically it represents mid-1920s refinements in the important trunnion bascule bridge design developed in Chicago in the last years of the 19th and early years of the 20th century. The Ocean City-Longport bridge is one of over a dozen of the same patented design built in the region between 1928 and 1940. Another of the same design was built on the Ocean Highway over Corsons Inlet for the Cape May Bridge Commission in 1947-48 (not included in the survey because of its date of construction).

The Ocean City-Longport bridge company was not financially successful, and the owners filed for bankruptcy in August, 1934. In 1946, the Cape May County Bridge Commission, which owned and operated 6 other bridges further south on the Ocean Highway, refinanced its indebtedness in order to be able to purchase and rehabilitate the bankrupt Ocean City-Longport bridge. They paid \$720,000 for it. The bridge had suffered from deferred maintenance during the 1930s and war years. Starting in 1947, the commission rehabilitated it by reconditioning the deck of the approach spans. The original concrete deck was completely removed, supporting girders and floor beams were realigned and repaired where needed, it was redecked with concrete, and new metal railings were installed. The roadway and sidewalk were reconfigured with two safety walks flanking the 23'-wide cartway instead of the original arrangement of one 5'-wide sidewalk. Repairs were also made to the electrical equipment and the operators houses. New doors and windows were installed on the operators houses in 1955, and the steel grid deck was also installed on the movable leafs then.



NEW JERSEY HISTORIC BRIDGE DATA

The Cape May County Bridge Commission, owners of the bridge since 1946, was established by the county in 1934 for the purpose of having a means to apply for Federal Emergency Administration of Public Works funds to build movable bridges over navigable channels and two fixed bridges on the Ocean Highway in the county. A quasi-public commission, the original members were George N. Smith from Wildwood Crest, Luther C. Ogden, a former county freeholder, of Cape May City, and G. W. Bergner, mayor of Avalon. The purpose of the commission was to "finance, construct, maintain, and operate self-liquidating toll bridges within the county." Having the private commission meant that the bridges could be constructed without cost to the county. Improving vehicular access to the Shore resort communities was viewed as a means of balancing the decline of train service to the tourist and seasonal-resident oriented area.

Ocean Highway was a route designation enacted by the 1910 New Jersey Senate and General Assembly (Chapter 220). The highway was to stretch from Atlantic Highlands in Monmouth County to Cape May City in Cape May County along, "as far as possible," improved existing roads near the ocean. The Commissioner of Public Roads was authorized to make route improvements where necessary with a \$50,000. appropriation from the vehicle license fund. The improvements were made to the roadway over the next four years, but bridges were not a part of that work.

Ocean Highway was an element in the promotion of the Jersey Shore as a tourist and seasonal residence area. The route, which incorporates local and county streets, does not possess the integrity of setting nor technological significance to be evaluated as a potential historic district. It is merely a route designation that in Cape May County was promoted as the shortest route from Atlantic City to Cape May City.

The consulting engineer firm of Harrington, Ash & Howard (reorganized in 1928 as Ash, Howard, Needles & Tammen) from New York City played a pivotal role in the history of private bridge commissions in the region. By 1928, the firm, founded in Kansas City, Missouri in 1914 as the successor to one started by J.A.L. Waddell, had established itself nationally as one of the leading designers of movable bridges, especially vertical lift bridges. Waddell was associated with the firm until he and John Harrington went their separate ways in 1914. The company opened its New City office in 1922 under the leadership of John L. Harrington who had taken on new partners. The patent associated with the design of this particular bridge relates to the trunnion tower, and it was granted in 1926.

Boundary Description and Justification: The bridge is evaluated as individually significant because of its technology, its completeness, and its historic background. It is not located within a potential historic district nor along a potentially eligible historic route. Therefore, the significant boundary is limited to the substructure and superstructure of the entire span.

PHOTO: 188:4-13 (10/03/92 JPH (5/96))

REVISED BY (DATE):

QUAD: Ocean City



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



**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	3100003	<b>CO</b>	CAPE MAY	<b>OWNER</b>	PRIVATE	<b>MILEPOINT</b>	0.0
<b>NAME &amp; FEATURE INTERSECTED</b>	OCEAN HIGHWAY OVER TOWNSENDS INLET		<b>FACILITY</b>	OCEAN HIGHWAY			
<b>TOWNSHIP</b>	AVALON BOROUGH			<b>DESIGN</b>	TRUNNION		
<b>TYPE</b>	SINGLE LEAF BASCULE	<b>LENGTH</b>	1373 ft	<b>WIDTH</b>	19.7 ft		
<b># SPANS</b>	27	<b>DESIGN</b>	TRUNNION		<b>MATERIAL</b>	Steel	
<b>CONSTRUCTION DT</b>	1939	<b>ALTERATION DT</b>			<b>SOURCE</b>	PLAQUE	
<b>DESIGNER/PATENT</b>	ASH HOWARD NEEDLES & TAMMEN			<b>BUILDER</b>	BETHLEHEM STEEL COMPANY		

**SETTING / CONTEXT** The toll bridge carries two lanes of traffic and two sidewalks over a navigable channel between Sea Isle City and Avalon. North of the bridge is Townsend's Inlet municipal park with beach and parking lot. The area on both sides of the inlet is developed with late-20th century summer residences. The toll bridge is privately operated by the Cape May County Bridge Commission.

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

**SUMMARY** The 27 span bridge has a single-leaf bascule span and 26 deck girder and rolled stringer approach spans. The 57' tapered deck girder with floor beams trunnion bascule is well preserved with its original or inkind replacement gear sets, electrical systems, controls, and concrete operator's and mechanical houses. The bridge is 1 of 4 similar bridges built 1938-1940 for the Cape May County Bridge Comm. with funding from the WPA. All are historically and technologically significant.

**INFORMATION**

**Bibliography:**  
 Brown, Kathi Ann. Design By Diversity. Kansas City, Missouri: The Lowell Press, 1989.  
 Cape May County Bridge Commission. Minutes 1934-1940.  
 New Jersey Laws, Session of 1910.  
 Seely, Bruce. Building the American Highway System. Philadelphia: Temple University Press, 1989.

**Physical Description:** The main span of the 27-span bridge is a 57'-long haunched deck girder with floor beams single-leaf trunnion bascule with a steel grid deck. The concrete counterweight is affixed to the underside of the tail end of the movable span. The approach spans are stringers and built-up deck girders supported on concrete pier bents with concrete cap beams for the stringers and braced concrete columns for the girders and movable leaf. A metal railing and safety sidewalks flank the roadway of the entire span. The cantilevered flat-roofed concrete Moderne-style operator's house on the inland side of the movable leaf is matched by a corresponding lookout with a bench on the ocean side. The toll booth is also a flat-roofed concrete structure, and it is located in the center of bridge adjacent to the movable leaf. The toll taker also serves as the bridge operator. Safety gates and signals are activated from the toll booth, but all other controls for operating the span are in the nearby operator's house.

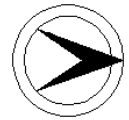
The operating mechanisms are primarily original or in kind replacements. The bridge operates by means of a pinion that engages a rack fixed to the outside of the girder near the trunnion. The enclosed primary and open secondary reducers and open drive gear sets are original as are the trunnions and supporting columns. The control panel and electrical panel also appear to be original. The bridge is powered by an electrical motor.

**Historical and Technological Significance:** The bridge over Townsends Inlet is one of four nearly identical trunnion movable bridges designed by Ash Howard Needles & Tammen that were built under one contract for the Cape May County Bridge Commission in 1938-1940. The bridges were opened to the traveling public June 1940. The span is a well preserved representative example of what is the most common movable bridge type in the Jersey Shore region. Technologically it represents mid-1920s refinements in the important trunnion bascule bridge design developed in the early years of the 20th century. It is one of over a dozen of the same patented design built in the area between 1928 and 1940. Another was built on the Ocean Highway over Corsons Inlet for the Cape May Bridge Commission in 1947-48. Historically the bridges are monuments to the effectiveness of Depression-era New Deal programs to improve America's infrastructure (criteria A. C.).

The Cape May County Bridge Commission was established by the county in 1934 for the purpose of having a means to apply for Federal Emergency Administration of Public Works funds to build movable bridges over navigable channels and two fixed bridges on the Ocean Highway in the county. A quasi-public commission, the original members were George N. Smith from Wildwood Crest, Luther C. Ogden, a former county Freeholder, of Cape May City, and G. W. Bergner, mayor of Avalon. The purpose of the commission was to "finance, construct, maintain, and operate self-liquidating toll bridges within the county." Having the private commission meant that the bridges could be constructed without cost to the county. Improving vehicular access to the Shore resort communities was viewed as a means of balancing the decline of train service to the tourist and seasonal-resident oriented area.

Ocean Highway was a route designation enacted by the 1910 New Jersey Senate and General Assembly (Chapter 220). The highway was to stretch from Atlantic Highlands in Monmouth County to Cape May City in Cape May County along, "as far as possible," improved existing roads near the ocean. The Commissioner of Public Roads was authorized to make route improvements where necessary with a \$50,000. appropriation from the vehicle license fund. The improvements were made to the roadway over the next four years, but bridges were not a part of that work.

Ocean Highway was an element in the promotion of the Jersey Shore as a tourist and seasonal residence area. The route, which incorporates local and county streets, does not possess the integrity of setting nor technological significance to be evaluated as a potential historic district. It is merely a route designation that in Cape May County was promoted as the shortest route from Atlantic City to Cape May City.



NEW JERSEY HISTORIC BRIDGE DATA

The consulting engineer firm of Ash Howard Needles & Tammen (AHNT) from New York City played a pivotal role in the history of the bridge commission. By 1934, the firm, founded in Kansas City, Missouri in 1914 as the successor to one started by J.A.L. Waddell, had established itself nationally as one of the leading designers of movable bridges, especially vertical lift bridges. Waddell was associated with the firm until he and John Harrington went their separate ways in 1914. The company opened its New City office in 1922 under the leadership of Harrington, Howard and Ash. Work-relief program funded projects were an important source of work for AHNT, as it was for most engineering firms during the Depression, and the Cape May Ocean Highway bridges were a sustaining project for the New York office. The AHNT patent associated with the design of this particular bridge relates to the trunnion tower, and it was granted in 1926.

It was reported at the May 22, 1935 annual meeting of the Cape May County Bridge Commission that AHNT attended the meeting, and that they had prepared, on behalf of the commission, the actual application, complete with plans and specifications, to the Federal Administration of Public Works for \$1,650,000 to build the Ocean Highway bridges. The application was not approved until June 14, 1938, at which time \$744,545 was a grant and \$910,000 was a loan. Work on the bridges began immediately.

The funding from the Federal Administration of Public Works met several objectives of various federal programs. It provided work for the unemployed. It was anticipated that between 350 and 500 local men would be put to work in addition to many "outside men," (CMCBC Minutes, 7/1/38). The bridges would improve traffic and focus on efficiency, as defined in engineering terms, which was a goal of the Bureau of Public Roads. Work relief-funded projects like the Cape May County Ocean Highway bridges kept the golden age of highway development alive during the Depression, when the lack of state and local funds would otherwise have stopped the effort (Seely, p. 88-91).

The four AHNT-designed movable bridges built on the Ocean Highway (3100003, 0500028, 3100005, 3100006) are all evaluated as significant because all are in a nearly complete state of preservation. The fact that they were built with funds made available through the federal government in an effort to create work is not sufficiently significant enough to meet National Register criteria because so many public works projects during the mid- to late-1930s were funded exactly the same way. The bridges were also not built with federally funded work crews such as the Civilian Conservation Corps (CCC).

Boundary Description and Justification: The bridge is evaluated as individually distinguished. While its immediate setting remains unchanged, the route of which it is a part does not possess the integrity or historical significance to be a potential historic district. Therefore, the bridge including the approach spans and structures related to its operation are evaluated as the limit of the historic resource.

PHOTO: 189:1,37-44 (10/03/92)

REVISED BY (DATE):

QUAD: Avalon



NEW JERSEY HISTORIC BRIDGE DATA

<b>STRUCTURE #</b>	3100005	<b>CO</b>	CAPE MAY	<b>OWNER</b>	PRIVATE	<b>MILEPOINT</b>	0.0
<b>NAME &amp; FEATURE INTERSECTED</b>	OCEAN HIGHWAY OVER GRASSY SOUND			<b>FACILITY</b>	OCEAN HIGHWAY		
<b>TOWNSHIP</b>	MIDDLE TOWNSHIP			<b>DESIGN</b>	TRUNNION		
<b>TYPE</b>	SINGLE LEAF BASCULE		<b>LENGTH</b>	1073 ft	<b>WIDTH</b>	19.7 ft	
<b># SPANS</b>	23	<b>ALTERATION DT</b>		<b>SOURCE</b>	PLAQUE		
<b>CONSTRUCTION DT</b>	1939	<b>BUILDER</b>	BETHLEHEM STEEL COMPANY				
<b>DESIGNER/PATENT</b>	ASH, HOWARD, NEEDLES & TAMMEN						

**SETTING / CONTEXT** The toll bridge carries two lanes of traffic and two sidewalks over navigable Grassy Sound north of North Wildwood. North of the bridge is an undeveloped island and salt meadows. To the south are salt meadows with some 20th-century residential development and a small marina. The toll bridge is privately operated by the Cape May County Bridge Commission.

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

**SUMMARY** The 23 span bridge has a 57' single-leaf trunnion bascule main span and 22 deck girder and stringer approach spans. The substructure is concrete. The bridge and operating equipment, including gears and operators house, are well preserved. The span is one of 4 similar bridges built 1938-40 on the Ocean Highway by the Cape May County Bridge Comm. with WPA funding. The group represents a major civic improvement, and all bridges are historically and technologically distinguished.

**INFORMATION**

**Bibliography:**  
 Brown, Kathi Ann. Design By Diversity. Kansas City, Missouri: The Lowell Press, 1989.  
 Cape May County Bridge Commission. Minutes 1934-1940.  
 New Jersey Laws, Session of 1910.  
 Seely, Bruce. Building the American Highway System. Philadelphia: Temple University Press, 1989.

**Physical Description:** The main span of the 23-span bridge is a 57'-long haunched deck girder with floor beams single-leaf trunnion bascule with a steel grid deck. The concrete counterweight is affixed to the underside of the tail end of the movable span. The approach spans are stringers and built-up deck girders supported on concrete pier bents with concrete cap beams for the stringers and braced concrete columns for the girders and movable leaf. A metal railing and safety sidewalks flank the roadway of the entire span. The cantilevered flat-roofed concrete Moderne-style operator's house on the ocean side of the movable leaf is matched by a corresponding lookout with a bench on the inland side. The toll booth is also a flat-roofed concrete structure, and it is located in the center of the bridge adjacent to the movable leaf. The toll taker also serves as the bridge operator. Safety gates and signals are activated from the toll booth, but all other controls for operating the span are in the nearby operator's house.

The operating mechanisms are primarily original or in kind replacements. The bridge operates by means of a pinion that engages a rack fixed to the outside of the girder near the trunnion. The enclosed primary and open secondary reducers and open drive gear sets are original as are the trunnions and supporting columns. The control panel and electrical panel also appear to be original. The bridge is powered by an electrical motor. The machinery brake is original.

**Historical and Technological Significance:** The bridge over Grassy Sound is one of four nearly identical trunnion movable bridges designed by Ash Howard Needles & Tammen that were built under one contract for the Cape May County Bridge Commission in 1938-1940. The bridges were opened to the traveling public June 1940. The span is a well preserved representative example of what is the most common movable bridge type in the Jersey Shore region. Technologically it represents mid-1920s refinements in the important trunnion bascule bridge design developed in the early years of the 20th century. It is one of over a dozen of the same patented design built in the area between 1928 and 1940. Another was built on the Ocean Highway over Corsons Inlet for the Cape May Bridge Commission in 1947-48. Historically the bridges are monuments to the effectiveness of Depression-era New Deal programs to improve America's infrastructure (criteria A. C.).

The Cape May County Bridge Commission was established by the county in 1934 for the purpose of having a means to apply for Federal Emergency Administration of Public Works funds to build movable bridges over navigable channels and two fixed bridges on the Ocean Highway in the county. A quasi-public commission, the original members were George N. Smith from Wildwood Crest, Luther C. Ogden, a former county Freeholder, of Cape May City, and G. W. Bergner, mayor of Avalon. The purpose of the commission was to "finance, construct, maintain, and operate self-liquidating toll bridges within the county." Having the private commission meant that the bridges could be constructed without cost to the county. Improving vehicular access to the Shore resort communities was viewed as a means of balancing the decline of train service to the tourist and seasonal-resident oriented area.

Ocean Highway was a route designation enacted by the 1910 New Jersey Senate and General Assembly (Chapter 220). The highway was to stretch from Atlantic Highlands in Monmouth County to Cape May City in Cape May County along, "as far as possible," improved existing roads near the ocean. The Commissioner of Public Roads was authorized to make route improvements where necessary with a \$50,000. appropriation from the vehicle license fund. The improvements were made to the roadway over the next four years, but bridges were not a part of that work.

Ocean Highway was an element in the promotion of the Jersey Shore as a tourist and seasonal residence area. The route, which incorporates local and county streets, does not possess the integrity of setting nor technological significance to be evaluated as a potential historic district. It is merely a route designation that in Cape May County was promoted as the shortest route from Atlantic City to Cape May City.



NEW JERSEY HISTORIC BRIDGE DATA

The consulting engineer firm of Ash Howard Needles & Tammen (AHNT) from New York City played a pivotal role in the history of the bridge commission. By 1934, the firm, founded in Kansas City, Missouri in 1914 as the successor to one started by J.A.L. Waddell, had established itself nationally as one of the leading designers of movable bridges, especially vertical lift bridges. Waddell was associated with the firm until he and John Harrington went their separate ways in 1914. The company opened its New City office in 1922 under the leadership of Harrington, Howard, and Ash. Work-relief program funded projects were an important source of work for AHNT, as it was for most engineering firms during the Depression, and the Cape May Ocean Highway bridges were a sustaining project for the New York office. The AHNT patent associated with the design of this particular bridge relates to the trunnion tower, and it was granted in 1926.

It was reported at the May 22, 1935 annual meeting of the Cape May County Bridge Commission that AHNT attended the meeting, and that they had prepared, on behalf of the commission, the actual application, complete with plans and specifications, to the Federal Administration of Public Works for \$1,650,000 to build the Ocean Highway bridges. The application was not approved until June 14, 1938, at which time \$744,545 was a grant and \$910,000 was a loan. Work on the bridges began immediately.

The funding from the Federal Administration of Public Works met several objectives of various federal programs. It provided work for the unemployed. It was anticipated that between 350 and 500 local men would be put to work in addition to many "outside men," (CMCBC Minutes, 7/1/38). The bridges would improve traffic and focus on efficiency, as defined in engineering terms, which was a goal of the Bureau of Public Roads. Work relief-funded projects like the Cape May County Ocean Highway bridges kept the golden age of highway development alive during the Depression, when the lack of state and local funds would otherwise have stopped the effort (Seely, p. 88-91).

The four AHNT-designed movable bridges built on the Ocean Highway (3100003, 0500028, 3100005, 3100006) are all evaluated as significant because all are in a nearly complete state of preservation. The fact that they were built with funds made available through the federal government in an effort to create work is not sufficiently significant enough to meet National Register criteria because so many public works projects during the mid- to late-1930s were funded exactly the same way. The bridges were also not built with federally funded work crews such as the Civilian Conservation Corps (CCC).

Boundary Description and Justification: The bridge is evaluated as individually distinguished. While its immediate setting remains unchanged, the route of which it is a part does not possess the integrity or historical significance to be a potential historic district. Therefore, the bridge including the approach spans and structures related to its operation are evaluated as the limit of the historic resource.

PHOTO: 429:37a-42a (10/04/93)

REVISED BY (DATE):

QUAD: Stone Harbor

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



**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	3100006	<b>CO</b>	CAPE MAY	<b>OWNER</b>	PRIVATE	<b>MILEPOINT</b>	0.0
<b>NAME &amp; FEATURE INTERSECTED</b>	OCEAN HIGHWAY OVER MIDDLE THOROFARE		<b>FACILITY</b>	OCEAN HIGHWAY			
<b>TOWNSHIP</b>	LOWER TOWNSHIP			<b>DESIGN</b>	TRUNNION		
<b>TYPE</b>	SINGLE LEAF BASCULE		<b>MATERIAL</b>	Steel			
<b># SPANS</b>	22	<b>LENGTH</b>	1044 ft	<b>WIDTH</b>	19.7 ft		
<b>CONSTRUCTION DT</b>	1940	<b>ALTERATION DT</b>			<b>SOURCE</b>	PLAQUE	
<b>DESIGNER/PATENT</b>	ASH, HOWARD, NEEDLES & TAMMEN			<b>BUILDER</b>	BETHLEHEM STEEL COMPANY		

**SETTING / CONTEXT** The bridge carries two lanes of traffic and two sidewalks over Middle Thorofare, a navigable channel north of Cape May. The surrounding area is a salt meadow with moderate development including a fish cannery and marina south of the bridge. The toll bridge is privately operated by the Cape May County Bridge Commission.

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

**SUMMARY** The 22-span bridge has a 57' single leaf trunnion bascule span and 21 deck girder with floorbeams approach spans on concrete pier bents. The span is well preserved with the original operating equipment and concrete operators house. The span is one of 4 similar movable bridges built 1938-40 on the Ocean Highway for the Cape May County Bridge Comm. The project was designed by AHNT, and it was funded by the WPA. An important civic project, the bridges are historically and technologically notable.

**INFORMATION**

**Bibliography:**  
 Brown, Kathi Ann. Design By Diversity. Kansas City, Missouri: The Lowell Press, 1989.  
 Cape May County Bridge Commission. Minutes 1934-1940.  
 New Jersey Laws, Session of 1910.  
 Seely, Bruce. Building the American Highway System. Philadelphia: Temple University Press, 1989.

**Physical Description:** The main span of the 22-span bridge is a 57'-long haunched deck girder with floor beams single-leaf trunnion bascule with a steel grid deck. The concrete counterweight is affixed to the underside of the tail end of the movable span. The approach spans are stringers and built-up deck girders supported on concrete pier bents with concrete cap beams for the stringers and braced concrete columns for the girders and movable leaf. A metal railing and safety sidewalks flank the roadway of the entire span. The cantilevered flat-roofed concrete Moderne-style operator's house on the inland side of the movable leaf is matched by a corresponding lookout with a bench on the ocean side. The toll booth is also a flat-roofed concrete structure, and it is located in the center of bridge adjacent to the movable leaf. The toll taker also serves as the bridge operator. Safety gates and signals are activated from the toll booth, but all other controls for operating the span are in the nearby operator's house.

The operating mechanisms are primarily original or in kind replacements. The bridge operates by means of a pinion that engages a rack fixed to the outside of the girder near the trunnion. The enclosed primary and open secondary reducers and open drive gear sets are original as are the trunnions and supporting columns. The control panel and electrical panel also appear to be original. The bridge is powered by an electrical motor.

**Historical and Technological Significance:** The bridge over Middle Thorofare is one of four nearly identical trunnion movable bridges designed by Ash Howard Needles & Tammen that were built under one contract for the Cape May County Bridge Commission in 1938-1940 (3100003, 0500028, 3100005, 3100006). The bridges were opened to the traveling public June 1940. The span is a well preserved representative example of what is the most common movable bridge type in the Jersey Shore region. Technologically it represents mid-1920s refinements in the important trunnion bascule bridge design developed in the early years of the 20th century. It is one of over a dozen of the same patented design built in the area between 1928 and 1940. Another was built on the Ocean Highway over Corsons Inlet for the Cape May Bridge Commission in 1947-48. Historically the bridges are monuments to the effectiveness of Depression-era New Deal programs to improve America's infrastructure (criteria A. C.).

The Cape May County Bridge Commission was established by the county in 1934 for the purpose of having a means to apply for Federal Emergency Administration of Public Works funds to build movable bridges over navigable channels and two fixed bridges on the Ocean Highway in the county. A quasi-public commission, the original members were George N. Smith from Wildwood Crest, Luther C. Ogden, a former county Freeholder, of Cape May City, and G. W. Bergner, mayor of Avalon. The purpose of the commission was to "finance, construct, maintain, and operate self-liquidating toll bridges within the county." Having the private commission meant that the bridges could be constructed without cost to the county. Improving vehicular access to the Shore resort communities was viewed as a means of balancing the decline of train service to the tourist and seasonal-resident oriented area.

Ocean Highway was a route designation enacted by the 1910 New Jersey Senate and General Assembly (Chapter 220). The highway was to stretch from Atlantic Highlands in Monmouth County to Cape May City in Cape May County along, "as far as possible," improved existing roads near the ocean. The Commissioner of Public Roads was authorized to make route improvements where necessary with a \$50,000. appropriation from the vehicle license fund. The improvements were made to the roadway over the next four years, but bridges were not a part of that work.

Ocean Highway was an element in the promotion of the Jersey Shore as a tourist and seasonal residence area. The route, which incorporates local and county streets, does not possess the integrity of setting nor technological significance to be evaluated as a potential historic district. It is merely a route designation that in Cape May County was promoted as the shortest route from Atlantic City to Cape May City.



NEW JERSEY HISTORIC BRIDGE DATA

The consulting engineer firm of Ash Howard Needles & Tammen (AHNT) from New York City played a pivotal role in the history of the bridge commission. By 1934, the firm, founded in Kansas City, Missouri in 1914 as the successor to one started by J.A.L. Waddell, had established itself nationally as one of the leading designers of movable bridges, especially vertical lift bridges. Waddell was associated with the firm until he and John Harrington went their separate ways in 1914. The company opened its New York office in 1922 under the leadership of Harrington, Howard, and Ash. Work-relief program funded projects were an important source of work for AHNT, as it was for most engineering firms during the Depression, and the Cape May Ocean Highway bridges were a sustaining project for the New York office. The AHNT patent associated with the design of this particular bridge relates to the trunnion tower, and it was granted in 1926.

It was reported at the May 22, 1935 annual meeting of the Cape May County Bridge Commission that AHNT attended the meeting, and that they had prepared, on behalf of the commission, the actual application, complete with plans and specifications, to the Federal Administration of Public Works for \$1,650,000 to build the Ocean Highway bridges. The application was not approved until June 14, 1938, at which time \$744,545 was a grant and \$910,000 was a loan. Work on the bridges began immediately.

The funding from the Federal Administration of Public Works met several objectives of various federal programs. It provided work for the unemployed. It was anticipated that between 350 and 500 local men would be put to work in addition to many "outside men," (CMCBC Minutes, 7/1/38). The bridges would improve traffic and focus on efficiency, as defined in engineering terms, which was a goal of the Bureau of Public Roads. Work relief-funded projects like the Cape May County Ocean Highway bridges kept the golden age of highway development alive during the Depression, when the lack of state and local funds would otherwise have stopped the effort (Seely, p. 88-91).

The four AHNT-designed movable bridges built on the Ocean Highway (3100003, 0500028, 3100005, 3100006) are all evaluated as significant because all are in a nearly complete state of preservation. The fact that they were built with funds made available through the federal government in an effort to create work is not sufficiently significant enough to meet National Register criteria because so many public works projects during the mid- to late-1930s were funded exactly the same way. The bridges were also not built with federally funded work crews such as the Civilian Conservation Corps (CCC).

Boundary Description and Justification: The bridge is evaluated as individually distinguished. While its immediate setting remains unchanged, the route of which it is a part does not possess the integrity or historical significance to be a potential historic district. Therefore, the bridge including the approach spans and structures related to its operation are evaluated as the limit of the historic resource.

PHOTO: 189:2-8 (01/19/93)

REVISED BY (DATE):

QUAD: Wildwood

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



**NEW JERSEY HISTORIC BRIDGE DATA**

<b>STRUCTURE #</b>	3900001	<b>CO</b>	CAPE MAY	<b>OWNER</b>	PRIVATE	<b>MILEPOINT</b>	30.7
<b>NAME &amp; FEATURE INTERSECTED</b>	US 9 OVER GREAT EGG HARBOR BAY			<b>FACILITY</b>	US 9		
<b>TOWNSHIP</b>	UPPER TOWNSHIP						
<b>TYPE</b>	DOUBLE LEAF BASCULE	<b>DESIGN</b>		<b>MATERIAL</b>	Steel		
<b># SPANS</b>	120	<b>LENGTH</b>	4829 ft	<b>WIDTH</b>	28 ft		
<b>CONSTRUCTION DT</b>	1928	<b>ALTERATION DT</b>	Unknown	<b>SOURCE</b>	NJDOT		
<b>DESIGNER/PATENT</b>				<b>BUILDER</b>			

**SETTING / CONTEXT** The bridge carries two lanes of traffic over the Great Egg Harbor River. The bridge, over 4800' in length, spans the river between Beesleys Point in Cape May County, and Somers Point in Atlantic County. The Cape May County side has several heavily altered 19th-century buildings converted to restaurants and a late-20th century electric power plant. The bridge is privately owned and operated by the Beesleys Point Bridge Company.

**1995 SURVEY RECOMMENDATION** Not Eligible  
**CONSULT STATUS** Not Individually Eligible.  
**CONSULT DOCUMENTS** SHPO Letter 6/30/95

**HISTORIC BRIDGE MANAGEMENT PLAN ( EVALUATED )** No

**SUMMARY** The 120-span bridge has an 80' double-leaf bascule span and 119 steel stringer spans resting on steel jacketed piers with I-beam caps and cross bracing. The substructure has been heavily rebuilt and the steel stringers gunited. The bascule span has modern controls and new electrical systems. Because access to the mechanical rooms was denied, it was not possible to completely assess the span. However, topside inspection shows that the bascule appears heavily altered and is probably not eligible.

**INFORMATION**

PHOTO: 185:4-8 (10/03/92)

REVISED BY (DATE):

QUAD: Marmora