

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**

**Name, Location, Ownership**

- 1. Historic name: Neil R. Underwood Memorial Bridge  
(235/025)
- 2. District or area: Hampton Beach
- 3. Street and number: n/a
- 4. City or town: Hampton
- 5. County: Rockingham
- 6. Current owner: State of New Hampshire

**Function or Use**

- 7. Current use(s): vehicular and pedestrian bridge
- 8. Historic use(s): same

**Architectural Information**

- 9. Style: bascule bridge with granite-faced piers
- 10. Architect/builder: Eugene L. MacDonald/ W. R. Hall
- 11. Source: Trenton Evening Times 1975, orig. drawings
- 12. Construction date: 1947-49
- 13. Source: original drawings; newspaper accounts
- 14. Alterations, with dates: no major alterations; typically  
routine maintenance
- 15. Moved? no  yes  date: \_\_\_\_\_

**Exterior Features**

- 16. Foundation: poured concrete
- 17. Cladding: granite
- 18. Roof material: n/a
- 19. Chimney material: n/a
- 20. Type of roof: n/a
- 21. Chimney location: n/a
- 22. Number of stories: n/a
- 23. Entry location: n/a
- 24. Windows: n/a  
Replacement? no  yes  date: \_\_\_\_\_

**Site Features**

- 25. Setting: waterfront
- 26. Outbuildings: n/a
- 27. Landscape features: n/a
- 28. Acreage: \_\_\_\_\_
- 29. Tax map/parcel #: n/a



- 35. Photo 1 Direction: E
- 36. Date: 15 August 2018
- 37. Reference (file name or frame#): IMG\_0848.jpg

- 30. State Plane Feet (NAD83): \_\_\_\_\_  
1212007.9 Easting; 145648.6 Northing
- 31. USGS quadrangle and scale: Exeter, NH, 1992  
(1998 ed.) quadrangle, scale 1:25000

**Form prepared by**

- 32. Name: Walter R. Wheeler
- 33. Organization: Hartgen Archeological Associates, Inc.
- 34. Date of survey: 11 September 2017; 15-17 June, 15  
August and 14 September 2018

39. Location map:



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40. Property Map:



◀ Photo Angle

**Neil R. Underwood  
Memorial Bridge**

New Hampshire Geographically  
Referenced Analysis and Information  
Transfer System, Coastal Imagery, 2013

41. Historical Background and Role in the Town or City's Development:

The Hampton Harbor Bridge (the Seabrook-Hampton Bridge, NHDOT Bridge No. 235/025) is located within a low-lying area along the Atlantic coast composed of salt marshes and barrier spits (Strahler 1966). These landforms were generated through the action of the southward shore drifting along the coast, transporting sand that was alternately deposited or eroded depending on tide and storm conditions and obstacles encountered (Strahler 1966). The hydrology of the area is dominated by the Atlantic Ocean and Hampton River.

The ocean has repeatedly reshaped the landscape at the outlet of the river through time. The most striking example of this is the case of Beckman's Point, which has at times been connected to the northern shoreline. At other times, as the outlet shifted northwards, Beckman's Point became attached to the southern shore through accretion of sand and other sediments around a cluster of rocky outcrops and ledges. As a result of the dynamic reworking of the Hampton River outlet, development was delayed until the late 19<sup>th</sup> and early 20<sup>th</sup> century. It was not until the 1940s when the landform stabilized enough on the northern end of Seabrook Beach for development to be feasible.

The mouth of the Hampton River outlets into the Atlantic Ocean between the barrier chains (islands and spits). This area, also known as Hampton Harbor, is dynamic and features numerous smaller tributaries that constitute a marsh/estuary system. In the larger east coast tidal system, the Hampton River and its associated estuary lies between the Merrimack River to the south and the Piscataqua River to the north, both of which are larger and deeper drainage systems. Their greater size facilitated an earlier and more robust historical development than that witnessed at Hampton Harbor.

Man-made changes to the harbor's estuary occurred relatively early, with the excavation of David Nudd's Canal in 1823. As a local businessman with a waterfront enterprise located deep in the interior of the estuary, he searched for a way to make the journey to and from the ocean more direct than the circuitous route offered by the shifting sands of the marsh. He incorporated a small company to dig a ½-mile canal from Hampton Harbor to his wharf further west. The canal is largely silted in today, but it remained an important route through the marsh system for decades (Dow 1894:513-514).

Aside from the moving sands, the Hampton River area is punctuated by a number of small rocky ledges and islands. These include Thomas Rock, Inner and Outer Sunk Rocks, White Rocks, Old Cellar Hole Rock and Bound Rock, as well as many others. Among the most important of these is Bound Rock, which was utilized by the Massachusetts Bay Colony in 1657 to denote the boundary between Salisbury and Hampton. Today the rock marks the boundary between Seabrook and Hampton, New Hampshire. Exposed at the surface in 1657, today the rock would be buried by sandy fill except for the construction of a circular curb around it.

The first bridge across Hampton River was built in 1640, and was located well inland between the Hampton meeting house and the falls (Dow 1894:42). The Exeter Road was laid out about 1700 and helped to connect the community to the interior of New Hampshire. Causeways and turnpikes built around the edges of the marsh lands further assisted travel in the area west of the marsh (Federer and Hill 1995).

It was not until the turn of the 20<sup>th</sup> century that Seabrook and Hampton Beaches were physically connected with a bridge over the Hampton River. A trolley system ushered in a new era of rapid development and served as the immediate impetus behind the new bridge. The "Mile-Long" Bridge as it was known was constructed on oak piles and remained in use until the 1940s when it was replaced with a bascule bridge of steel and concrete, later named the Neil R. Underwood Memorial Bridge. Today, the bridge carries New Hampshire Route 1A, a major thoroughfare that connects the entire seacoast of New Hampshire from Massachusetts to Maine. Locally, it's also known as Ocean Boulevard, and Ashworth Avenue (formerly Marsh Avenue) for a short segment in Hampton.

## **Street Railways**

At the turn of the century, passenger rail service faced new competition in the form of light rail (trolleys and electric street cars). This was particularly true in the Seabrook/Hampton area. In about 1900, Wallace D. Lovell had begun to augment his already complex system of street railways by expansions located throughout northern Massachusetts and eastern New Hampshire. This included the Seabrook & Hampton Beach Street Railway Company (Randall 1989:55-57).

The railway was an outgrowth of the Exeter Street Railway Company, a corporation formed in 1889, but which did not start physical improvements until 1897. The railway's stated purpose was to move passengers from the Western Division of the Boston & Maine line in Exeter to nearby Hampton Beach (Cummings 1968). The streetcar system was planned to largely follow the stage coach route, moving visitors from Exeter to the hotels along Hampton Beach.

Wallace Lovell purchased the railway's charter in 1897, after which work rapidly advanced (Cummings 1968). Within a year, the company pushed to expand, extending its line southward to Amesbury Massachusetts, and formed the Hampton & Amesbury Company (due to charter restrictions on the Exeter Street Railway Company). By the summer of 1899, it was possible to "ride by trolley all the way from Boston and beyond to Exeter and Hampton Beach" (Cummings 1968). Additional tracks north of Hampton along the beach were also established, to connect to the Portsmouth Electric Railway system. By 1909, over 356,000 passengers annually rode along the Seabrook & Hampton Beach lines alone (about seven miles total). Typically, the railway offered 10 to 12 round trip runs per day (State of New Hampshire 1909:238-240).

## **Bascule Bridges in New Hampshire**

A draft context statement for movable bridges in New Hampshire has recently been completed by the Historic Documentation Company. It is quoted extensively here, as it provides the most up-to-date context for understanding this structure type in New Hampshire.

*A movable bridge, in the context of New Hampshire's transportation history, is a highway or railroad bridge that can be drawn up, pulled back or swung aside "so as to open a clear passage, or to afford an increased headway, for ships or boats in a navigable channel." The ancient term, draw bridge, which conjures the image of a defensive structure of heavy timbers spanning a moat around a mediaeval castle and drawn up by heavy chains to form a door, remains in common use for movable bridges of all types. Movable bridges of the three major types, swing, lift and rolling have been built over New Hampshire's navigable waterways since the mid-17th century.*

*Movable bridges are the most expensive solution to maintaining an open navigation channel, due to their greater first cost compared to a fixed span, the high maintenance of their mechanical parts and electrical parts if so equipped, and the rising cost of the labor for their operation. Their use is naturally avoided whenever possible and as a result laws governing their use in order to maintain rights to a navigable commercial waterway were established early on in the history of the country. Much of the law is rooted in the ancient principles of the public trust doctrine, that access to the sea, air and running water is a right common to all.*

*Over time there has been some disagreement among engineers regarding the classification of movable bridge types, in particular the bascule. Merriman Mansfield and Henry Jacoby in their highly regarded 1897 four volume Text-book on Roofs and Bridges stated that:*

*"Modern draw bridges may be classified as swing bridges, rolling bridges, and lift bridges, the first being the most common type. A swing bridge is supported upon a pier at the middle, and when closed the ends rest upon abutments. When open each arm is a cantilever. The old form of swing*

*bridge had a tower over the center pier, from which inclined chains extended to the ends. Rolling draw bridges are those which have wheels under the land portions, and which can be pushed out to span the stream. A rolling bridge is pulled back by the rope and drum method. Lift bridges are of various kinds. The simplest is a common truss which is raised vertically to the desired height, both ends rising in guides arranged on towers. The hinged lift bridge moves in a vertical plane around hinges at one end, like the ancient draw over the castle moat....A lift bridge usually has a counterweight to assist the motion."*

*In 1907 another renowned bridge engineer, C.C. Schneider proposed classifying all bridges that turn about a horizontal axis or roll back on a circular segment as bascule bridges. This included the "hinged lift" type so-named by Mansfield & Jacoby. Schneider had no argument regarding swing bridges—those which turn about a vertical axis—but lift bridges he said, lift vertically in a plane.*

*In 1926, when Otis Hovey, the foremost authority and engineer of movable bridges published his seminal two-volume text on the subject, Movable Bridges, he clarified the definition of the types: "Swing bridges consist of a superstructure arranged to turn about the vertical axis of a pivot anchored to the center pier. In ordinary cases the pivot is at the center of a span of two equal arms, which balance each other when the bridge is open, thus providing two equal openings for navigation. It is sometimes necessary to place the pivot near one end. The shorter arm must then be counterweighted to balance the longer arm when the bridge is open.*

*Bascule bridges are, strictly speaking, those in which one end rises as the other falls, but the term is commonly applied to any type moving about a horizontal axis, either fixed or moving, as well as to those that roll back on a circular segment [Schneider's thinking has prevailed]. They may consist of a single leaf spanning the channel or of two symmetrical leaves meeting at the center. Lift bridges move vertically and consist of simple spans resting on piers when closed. In most cases the weight of the lifting span is counterweighted by means of ropes, or chains, attached to the ends of the span and the counterweights, which pass up and over sheaves on top of towers at the ends of the bridge.*

*Retractable, or traversing, bridges move horizontally and when closed form simple spans across the channels. Some telescope inside of the adjoining spans; others recede above the approaches, the rear end being tilted upward and the free end downward. In some cases the approach span is first moved aside, transversely, to permit the draw span to recede in its place."*

*Bascule is a French word used to describe mechanical devices that pivot about a point so that when one end or part rises, the other end or part falls. A true bascule bridge consists of a bridge superstructure with a counterweight at one end and a pivot point that enables the superstructure to be raised, rotating in a vertical plane like a see-saw, while the counterweight falls. When two bascule bridges extend across a channel and meet in the middle to form a continuous roadway, the structure is called a double-leaf bascule bridge. A leaf is the portion of the bridge that extends over the channel and carries the roadway. The vast majority of modern bascule bridges, those dating to about 1890 through the twentieth century, are of two basic types, the trunnion type and the rolling-lift type.*

*The term trunnion has evolved in engineering to mean a pin or pivot on which something pivots. Trunnions are the projecting pins on the side of a cannon that sit in the cheeks of the carriage and allow the barrel to be pivoted up and down. The trunnion bascule is also called a simple-lever bascule because in operation it rotates about a stationary pin or pivot-point like a lever and fulcrum. The trunnion bridge consists of a girder or truss superstructure with a heavy*

*counterweight at one end, supported at its balance point by a trunnion anchored to the pier, or abutment, at the edge of the channel. The trunnion bascule bridge is the older of the two types, with primitive versions dating at least as far back as medieval times when counterweighted drawbridges were erected over moats to protect a castle entrance. The monumental Tower Bridge, built over the Thames in London from 1885 to 1894, is a trunnion bascule and according to bridge engineer J. A. L. Waddell, “the modern era of bascule building may properly be said to have commenced with the construction of the Tower Bridge of London in 1894.” (Historic Documentation Company 2018).*

The Hampton Harbor Bridge is the most recent of all moveable bridges in New Hampton and the 17th overall to have been built in the state (Historic Documentation Company 2018).

### **History of the Span**

Hampton Harbor was not spanned until the beginning of the 20<sup>th</sup> century. Chief of Engineers Lieutenant Col. J. A. Smith visited Hampton in 1888 and reported that he “did not consider the locality as worthy of improvement.” (Schermerhorn and Schermerhorn 1895:200). This opinion was likely due to the anticipated scale of the undertaking in the context of the low level of development of the area at that time. With the establishment of a trolley line and associated extension of tracks onto the barrier island at the north at the end of the 19<sup>th</sup> century, conditions changed sufficiently to warrant investment in such an undertaking.

#### *The “Mile-Long” Bridge*

Just after the turn of the century, a large bridge was constructed to connect the two beach communities separated by the mouth of the Hampton River (Figure 1). The so called “Mile-Long” Bridge was constructed by a firm affiliated with the trolley (owned by Wallace Lovell) known as the Granite State Land Company (GSLC). In turn, GSLC leased a portion of the bridge to the trolley for its tracks in 1901 (Boston Herald 1901) (Figure 2). The bridge was designed by Ralph D. Hood, an engineer with the Hampton and Amesbury Railway until 1900, when he was hired by the Massachusetts Construction Co and Lovell System to supervise the construction of the bridge (The Portsmouth Herald 1901) (Street Railway Bulletin 1919).

Bridge work lasted just over a year, and when completed the owners claimed it was the longest wooden bridge in the world, having a span of over 4,750 feet and a deck more than 30 feet in width (Figure 3). In addition to the railway tracks, the bridge featured a pedestrian way and toll car path. The draw was only 32 feet long, and composed of 15 hardwood stringers and “heavily planked crosswise” (The Portsmouth Herald 1902c). The draw was originally lifted by hand with the aid of large counterweights but was replaced in 1937 with a mechanical winch. The bridge was set on 4,000 oak piles with the decking composed of 1,700,00 linear feet of hard pine planks and 60 tons iron to tie the whole together. The piles were driven by a combination of stationary and floating pile drivers. In all, over 60 men were employed at the height of construction (The Portsmouth Herald 1901) (Figure 4).

The bridge opened in May 1902 with great fanfare, and a major celebration that included Wallace Lovell, the governor and other local and state dignitaries, although the bridge wasn’t truly completed until the following year (Exeter News-Letter 1902; The Portsmouth Herald 1902a).

By the end of 1902, Lovell had sold his interest in the various railway companies he owned to the New Hampshire Traction Company (Springfield Republican 1901). The railway staggered under debt and was forced to dissolve in 1906, just as the bridge needed major repairs (The Portsmouth Herald 1902b).

The risks attending the building of a structure across a wide inlet unprotected from driving Nor’easters and powerful tidal and longshore currents—concerns over which were voiced by the locals but brushed aside by Lovell—were soon visited upon the bridge. In late December 1902, after being hammered by a series of storms,

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the Portsmouth Herald reported “parts of the big Hampton River bridge are sinking. It may be remembered that many people prophesied this before the bridge was built” (The Portsmouth Herald 1902b). Similar issues would come to plague the Neil R. Underwood Memorial Bridge.

The builders inspected the structure and found the sand around the pilings at the south end of the bridge completely washed away, “so that a stretch of sixty feet of the bridge now rests only on the points of the piles, and the section has dropped fully eight inches”(Historic Documentation Company 2018). Repairs were made and the bridge reopened in time for the 1903 summer season, but the episode marked the beginning of a costly and ongoing problem.

Along with the bridge, the railway company also constructed a seawall or bulkhead to help protect the tracks. Within a week of its completion in 1903, over 150 feet of the wall was washed away during a powerful spring storm (Boston Herald 1903). In “1906 undermining caused a sag of 18 inches over a distance of 300 feet and in 1911 heavy seas and river ice carried away a dozen pilings. In July 1917, heavy surf washed out the sand from a long stretch of pilings, closing the bridge to vehicles for a week of repairs in the height of the season and leaving cottagers and beachgoers to walk across” (Historic Documentation Company 2018).

A spring ice storm in 1918 washed away over 600 feet of the bridge and caused considerable damage to nearby White Rocks Island on Hampton Beach. A subsequent storm washed the section away again just as it was about to be replaced (The Boston Globe 1918). As the repairs were just being completed for the 1918 season, fire destroyed 125 feet of the new construction, pushing the opening to the end of June (The Fitchburg Daily Sentinel 1918).

As early as 1916, local residents agitated for the state to take ownership of the bridge, as it had the means to maintain and repair the structure (The Lowell Sun 1916). “Locals and motor clubs lobbied the State to buy the bridge and make Ocean Boulevard a state highway, and the bridge owners offered it up for \$75,000, about what it originally cost to build, but it needed an estimated \$50,000 in repairs and the State refused” (Historic Documentation Company 2018).

The company’s assets were eventually purchased by the Exeter & Hampton Electric Company. The line ultimately landed in the hands of the Town of Hampton, whose citizens wanted to keep the system operational for the economic boom it had brought to the area (Randall 1989:69-71; Tucker 1951). The town of Hampton briefly operated the company between 1921 and 1926, but it could not stabilize the business and it eventually shuttered (Lassiter 2016). By 1927, the former assets of the railway were sold at auction. Shortly afterward, most of the rails were removed from the local streets (Cummings 1968). Buses soon replaced the trolley as a means of travel to the beach hotels and casino. The State purchased the bridge for \$140,000 in October 1933. The state later committed monies to construct “breakwaters, jetties, sea walls and other structures to stabilize the mouth of Hampton River and prevent erosion of the adjacent beaches, the state's coastal highway, the bridge and its approaches”(Historic Documentation Company 2018). Once the state took control of the bridge, repairs began immediately and included the installation of a new mechanical system (The Portsmouth Herald 1937). Afterwards, the bridge was opened seven days a week, when previously it was closed on weekdays during the winter season (The Portsmouth Herald 1933).

As a result of continuing changes in the landscape at the harbor entrance, the portion of the bridge that spanned over water was much shorter in 1942 due to new deposits of silts and sand. As a result, the sections of the bridge that were then on land were removed and replaced with macadamized approaches (Boston Herald 1942). Soon after the end of the war, work began on replacing the remaining portions of the “Mile-Long” Bridge with a structure that came to be known as the Hampton Harbor Bridge, and eventually the Neil R. Underwood Memorial Bridge.

*Hampton Harbor Bridge (Neil R. Underwood Memorial Bridge)*

Plans for the replacement of the Mile-Long Bridge were begun soon after the State's takeover of the span. During a 1937 public hearing held by the US War Department, concerns voiced by local residents were fielded. Local fishermen agitated for a minimum clearance of 25 feet at high tide under the bridge, instead of the 12.7 feet initially proposed by the state highway engineers with a fixed span, to allow lobster boats operating out of the harbor to pass. The state engineers countered that the proposed draw bridge offered greater clearance than the fixed spans (up to 15 feet), and the new draw could be opened more quickly than the current (within a five-minute cycle). The low span with a draw was thought to be "more suitable to the surroundings" to the engineers than a higher fixed span (The Portsmouth Herald 1938). Local officials requested that the central span be sufficiently wide to accommodate a seaplane that could dock in the harbor in the event a proposed water airport developed. Also under consideration at the time was a harbor port for large inland transportation ferries from Dover, New Hampshire and Haverhill, Massachusetts (The Portsmouth Herald 1938). Neither idea came to fruition, but the possibilities of such development appear to have influenced the final design choices.

While in 1938 an announcement was made by state officials that a replacement bridge would soon be constructed, the advent of World War II brought these initial efforts to a standstill (Historic Documentation Company 2018).

Design work for the new bridge, which was to be sited west of the wooden bridge, were resumed in 1946. Eugene L. Macdonald, chief engineer for Parsons, Klapp, Brinckerhoff and Douglas (PKB and D), was principally responsible for the design. Macdonald served with the army's Eleventh Engineers in World War I, afterward working with several firms before joining PKB and D. Macdonald also designed the railroad bridge over the Cape Cod Canal at Buzzards Bay, considered to be one of the firm's more well-known structures. Macdonald retired in 1956 and died in 1975; when he left the firm he was one of the principals (Trenton Evening Times 1975).

The works were supervised by State Highway engineers, led by Roger Downing. Construction commenced on the substructure April 1, 1947 (Boston Traveler 1947). The wooden bridge, although still periodically being repaired, remained open as a toll bridge during the construction of the new bridge. The project at the start was "plagued by shortages of steel" (The Beachcomber 1947). A concrete strike also hampered construction; eventually a concrete batching plant was established in the nearby Boston and Maine freight yard in Hampton Center. The sand and gravel was shipped by rail from Manchester, NH and the cement from New York (Crowly & Lunt 1946-1948).

Despite the shortages of material, 65 men were employed on the construction of the bridge between March 1947 and July 1948 (The Beachcomber 1948). Many of the workers found room and board with local residents, as about half hailed from out of the area (Bashline and Bashline 2018; The Beachcomber 1948). The contractor's workers were supervised by Hubert F. Powell (The Beachcomber 1948).

Like the former wooden bridge, the new steel bridge featured a lift deck, known as a bascule. The new bridge is mechanically operated with electric motors that turn a winch system. The motor and winches are positioned below the steel deck and are controlled by the operator from a centrally located tower.

The new span stretches 1,198 feet over the Hampton River on 12 piers of reinforced concrete with granite facing. The span is illuminated by 10 light standards spaced across the east edge of the bridge which rested on the original side fencing. A pedestrian walk lies on the east side of the bridge that has been popular with fisherman over the years (Hampton Union 1949; Springfield Union 1949). The bridge cost \$1.2 million dollars to construct, and funds were raised to pay the state bond through tolls, originally 15 cents per crossing. This fee was subsequently lowered to 10 cents in 1956; by 1964 the fees were abolished (Holman n.d.).

The bridge contractors included T. Stuart & Sons, from Watertown, Massachusetts who completed the piers and other concrete work (Hampton Union 1949; The Beachcomber 1947) (Table 1). According to various engineering and contracting magazines of the period, the firm specialized in poured cement and concrete for railroad trestles,

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dams, and bridges. The superstructure was fabricated by Phoenix Bridge Corporation of Phoenixville, Pennsylvania, from drawings prepared under engineer W. R. Hall. Phoenix Bridge formed in 1866, and after the Civil War was one of the leading builders of metal trusses. Their pin-connected truss structure, called a Phoenix Column, was a major advancement over cast-iron truss systems. Eventually this design was replaced with riveted steel. Competition from the American Bridge Company and others hurt the firm and by the 1940s, their orders had dropped significantly. The company closed in 1976 (Historical Society of the Phoenixville Area 2018).

The granite curbing and paving was completed by A. J. Paquette of Meredith, New Hampshire (Hampton Union 1949). This work was likely included under the approach task, initially budgeted by the state.

Table 1. Initial Cost estimates for Hampton Harbor Bridge in 1947 (The Beachcomber 1947).

<b>Task</b>	<b>Contractor</b>	<b>Cost</b>
Substructure	T. Stuart and Sons	\$577,000
Superstructure	Phoenix Bridge Company	\$514,000
Approaches	A. J. Paquette	\$140,000
Total		\$1,231,000

Bridge repairs and maintenance have occurred periodically over the years, including most notably in 1953, 1957, 1976, 1978, 1990, 2001, 2008, 2010, and 2017 (Hardesty & Hanover 2017; New Hampshire Department of Transportation (NHDOT) 1950). In 1957, shortly before the summer rush of Memorial Day weekend, the bridge experienced a sudden settling which was detected by the toll collector. Skin divers later discovered that a pier had shifted to the north and east, causing the northern portion of the deck to sag (The Portsmouth Herald 1957).

Two other bascule bridges in New Hampshire were erected before World War II near Portsmouth. They included the Dover or Col. Alexander Scammell Memorial Bridge (c. 1935) and New Castle-Rye Bridge (c. 1941). Both contributed to the Portsmouth Defense Area, valuable in coastal defense in part due to their proximity to Fort Stark and Fort Constitution (Wheeler 2012). Hampton Beach was located outside of the identified critical area.

From July 1940 to July 1941, the federal government had earmarked approximately 3.3 million dollars for improvements to state and national bridges as part of the Portsmouth National Defense Summary, an annual accounting of defense area improvements and appropriations (Office of Chief Engineers 1941). While it does not appear that any of these monies were provided to the state for the construction of the Neil R. Underwood Memorial Bridge, the influx of these funds gave the state financial flexibility to build other bridges, including the Underwood Bridge. The selection of a bascule design for the Neil R. Underwood Memorial Bridge may have been inspired by the precedent set by the bridges in the defense area, although this is purely speculative.

Anticipation over the completion of the new bridge spurred development along both the north and south shores of Hampton Bay. In 1945, the Hampton Beach Chamber of Commerce announced the requisition of funds for a new “street-level” seawall, a 14-foot wide boardwalk (reportedly the only “New England Resort with such a walk”), and the widening of Ocean Boulevard (Route 1A) to four lanes. At the same time, the Town of Hampton purchased land for a 10,000-car parking lot located to the east of the casino, and undertook a new advertising campaign, boasting that the town attracted a million summer visitors (Rae 1945); (Springfield Union 1949).

Drawings for the bridge were executed in 1946 (Figures 9 thru 46). Work began in April 1947 (Boston Traveler 1947). The bridge was “originally scheduled to have been completed by the fall of 1948” but only opened for traffic in December 1949, after some construction delays caused by difficulties “in procuring steel and other materials” in the post-war economy (Hampton Union 1949; The Portsmouth Herald 1949).

*Renamed Neil R. Underwood Bridge*

In 1953, the bridge, formally known to the state as the Hampton River Toll Bridge, was renamed in memory of Lieutenant Neil R. Underwood (1918-1944), an airman who died off the French island of Corsica in 1944 (The Lowell Sun 1953). A native of Hampton Beach, he was the first in his town to be killed in action. The four-man,

Douglas A-20 Havoc light bomber he piloted crashed into the Mediterranean Sea during an attempt to land following a nighttime armed reconnaissance mission in German-occupied Italy. He and his crew's remains were never recovered and all were presumed dead (United States War Department 1944).

His widow, Mrs. Phyllis Gordon Handel and their young daughter Deb Lynne Underwood attended a dedication ceremony in the summer of 1953 while visiting from her new home in California (Sacramento Bee 1953). His nephew, named after the airman (Neil Underwood) also attended some of the festivities (Lane Memorial Library 2018).<sup>1</sup>

In 1954, an innovative toll-collection system was piloted on the bridge. Utilizing the principals of the "magnetic mine" developed in World War II, state engineers created an automatic collection system with a coin collection basket, and alarm system with camera to track down scofflaws (The Portsmouth Herald 1954). The system would eventually be adopted on a number of toll roads throughout the country.

In a 1994 MOA for the replacement of Colonel Alexander Scammell Memorial Bridge, the Federal Highway Administration (FHWA) and NHDOT committed to working towards the long-term maintenance and preservation of both the NH 1B Bridge Over Little Harbor and the Neil R. Underwood Memorial Bridge. This provision was included to address the loss of the Scammell Bridge, one of three bascule spans in the state at that time (Hardesty & Hanover 2017).

42. Applicable NHDHR Historic Contexts (please list names from appendix C):

88. Automobile highways and culture, 1900-present.

97. Engineering in New Hampshire, 1623-present.

43. Architectural Description and Comparative Evaluation:

The Neil R. Underwood Memorial Bridge is approximately 1,199 feet long by 33 feet wide (53 feet at the former barrier gates) and it carries NH Route 1A over the Hampton River at the inlet to Hampton Harbor. A vital infrastructure link on the New Hampshire coastline, the Neil R. Underwood Memorial Bridge supports up to 18,000 vehicles per day during peak times. Its mechanism is operated from April to October of each year, and it is opened as many as 20 times a day during that period (Knoblock 2012:44). It lies immediately south of the southern terminus of the Hampton Beach State Park, specifically its camping area. Residential development is located southeast of the bridge in Hampton and then further south in Seabrook. The Neil R. Underwood Bridge is included in the state's Historic Bridge Inventory.

The bridge consists of twelve steel-girder approach spans and one bascule span. The approach spans have reinforced concrete decks, and the bascule span has a steel grid deck. The superstructure is supported by reinforced concrete piers encased in rusticated granite blocks and supported on timber piles. Sway frames support the deck at the piers. North and south abutments are of poured concrete.

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<sup>1</sup> Local residents have proposed an alternate explanation for the naming of the bridge, based upon family recollections. According to this account, a well-liked foreman associated with the bridge project is said to have roomed and boarded at 16 Portsmouth Avenue. By coincidence the foreman was also named Neil Underwood. Descendants of the owner of that house relayed the story that he thought the design, similar to the New Castle bascule bridge, saved financial resources, and he believed the bridge's design concept was vastly underappreciated by the public. The foreman stayed at the house with some of the other 63 bridge men. The owner of the boarding house became well-known to many of the bridge workers, a number of whom returned to visit well after the bridge was completed. The foreman, Neil Underwood, came back to work in the area in the 1950s on the Hampton River jetty project. He returned once again in about 1958, and discussed the naming of the bridge and the potential confusion it caused (Bashline and Bashline 2018).

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A granite-sheathed poured concrete operator's house topped with a glazed flat-roofed control room is located at the north end of the bascule span, above the bascule pier. The operator's house measures 12 by 13 feet in plan and tops out at 54.24' elevation. Its interior contains four occupiable floors, connected by L-shaped internal staircases. The lowest level houses a watercloset and service room; a motor room is located above that, and a switch board room is located at bridge deck level. The control room is located at the top of the structure.

The light grey granite facing of the operator's house is smooth-faced (in contrast to the rusticated finish of the piers), 4" thick, and consists of large square or rectangular ashlar blocks. The joints between courses are vertically and horizontally aligned with the various window and door openings. Double-hung (originally paired casements) or fixed sash with aluminum frames are centered on each of the elevations at various levels. They are deeply set into the walls and the granite facing immediately below them is sloped back to form the sill of the windows. Principal entry is through a door on the north elevation, at bridge deck level. A large dedicatory bronze plaque is attached to the granite revetment above the window on the east elevation. The corners of the superstructure are stepped back and chamfered, creating strong vertical shadow lines. This treatment returns across the top of the granite-sheathed portion of the structure, forming a base for the control room windows. The slightly recessed windows of the control room with its flat concrete slab roof and projecting eaves contrasts with the detailing of the remainder of the structure, which emphasizes solidity and weight. Platforms with pipe railings are located on the north elevation at deck level, and on the south elevation, giving access to the mechanical lift system.

Below deck, the superstructure of the operator's house forms one end of the support structure for the operating mechanism for the bridge. The east end support is similarly of poured concrete construction sheathed with smooth-faced granite blocks.

The structure has been rehabilitated multiple times, including in 1957, 1963, 1976, 1978, 1983, 1990, 2002, 2010 and 2017. Repairs undertaken in 1963 may have included the removal of the barrier gates (which were used in connection with toll collecting) and replacement of the bridge railings, the only significant changes that have been made to the superstructure. Emergency repairs to the bascule span mechanical system were undertaken early in 2018. The bridge is on the "red-list" for the New Hampshire Department of Transportation (NHDOT).

The Neil R. Underwood Memorial Bridge is one of two remaining bascule-type bridges in New Hampshire. The other—the Newcastle-Rye Bridge (Bridge No. 066/071)—was designed in the autumn of 1941 and constructed in 1942 by the Thibodeau Construction Company, Inc., with parts fabricated by the American Bridge Company. It was constructed using standard specifications dated 1 May 1941 and was project DA-WR-1 1942 of the New Hampshire Highway Department. The Newcastle-Rye Bridge is of much smaller size than the Neil R. Underwood Memorial Bridge, being only 253'-5 1/2" in length. Like the Neil R. Underwood Memorial Bridge, the New Castle-Rye Bridge lacks a "visible" counterweight. In both spans the counterweight is located under the roadbed and can be seen by an observer located under the bridge (Wheeler 2012). This arrangement has the advantage of compactness and does not require the construction of a counterweight pit or an overhead support structure (Koglin 2003:43-46). Originally opened as a toll bridge in December 1949, it became a free-passage bridge in 1964 (Holman 2013). Although rehabilitation of the New Castle-Rye Bridge was initially considered by NHDOT, a detailed structural evaluation has indicated that replacement is necessary due to the extent of deterioration, and due to evolving design standards requiring capacity of heavier design vehicles. Replacement is anticipated in the next several years.

A third example of this bridge type in New Hampshire, the Col. Alexander Scammell Memorial Bridge (also known as the Bellamy River Bridge, Bridge No. 174/034) carried US Route 4 over the Bellamy River in Dover, Strafford County, New Hampshire. It was constructed in 1935 from designs by Fay, Spofford & Thorndike of Boston, and built by Warren Brothers Road Company of Cambridge, MA. Like the Neil R. Underwood Memorial Bridge, it was a single-leaf bascule lift bridge. It differed from the Underwood Bridge, however, in that it had a vertical overhead counterweight. It was the oldest of the state's remaining bascule-type bridges when it was razed

in c.1997, and was the sole example with a visible counterweight. The bridge was recorded to HAER standards in June 1996 (Mausolf 1996). It was subsequently replaced by the current span which was finished in 1998.

44. National or State Register Criteria Statement of Significance:

The Neil R. Underwood Memorial Bridge is eligible for the National Register of Historic Places under Criterion C as a rare example of a bascule bridge in the State of New Hampshire. As one of only two remaining examples of this bridge type in the state, the Neil R. Underwood Memorial Bridge embodies the distinctive characteristics of its type and method of construction. These include an underdeck counterweight, a control house, and a single-leaf fixed-trunnion deck.

There is no evidence which suggests the bridge qualifies for Criteria A, B or D. With respect to Criterion A, although the bridge has a significant connection to the post-World War II development of Hampton Beach and Seabrook, it is not otherwise connected to, or representative of, a significant historical event. It may have significance at the State level under this criterion, however. And, although the bridge was the first site of the implementation of automatic toll collecting, the gates and associated equipment related to this innovation were removed in 1964, when toll collecting ceased on the bridge. With respect to Criterion B, the bridge does not appear to have any direct association “with lives of persons significant in our past.” It is not the recognized work of a master designer or engineer, and does not—aside from its rarity within the state—represent an unusual or innovative design. With respect to Criterion D, the bridge is unlikely to yield information important in prehistory or history and so does not qualify under this criterion. The archeological remains of the trestle associated with the construction of the bridge have limited research value.

45. Period of Significance:

1946-1948 (covering the design and principal construction dates of the bridge and its mechanical lift system).

46. Statement of Integrity:

The Neil R. Underwood Memorial Bridge retains a high level of integrity of location, design, setting, materials, workmanship, feeling and association. Although the railings have been replaced, this change has not significantly altered the appearance of the bridge or its overall form. The bridge remains on its original site, and continues to connect seasonal beachside communities comprised of wood-frame buildings in a village-like setting. The high level of physical integrity to its initial period of construction insures that the bridge retains integrity of workmanship, materials, feeling, and association.

47. Boundary Discussion:

The eligible boundary is the bridge and its abutments, together with the approach slips constructed to the north and south of the bridge and an associated archeological resource—the base of a temporary trestle constructed to aid in the erection of the Neil R. Underwood Memorial Bridge—located immediately to the west of the bridge and visible during low tide in the form of small truncated posts.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**

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**NHDHR INVENTORY #HAM0103**

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**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**

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Figures

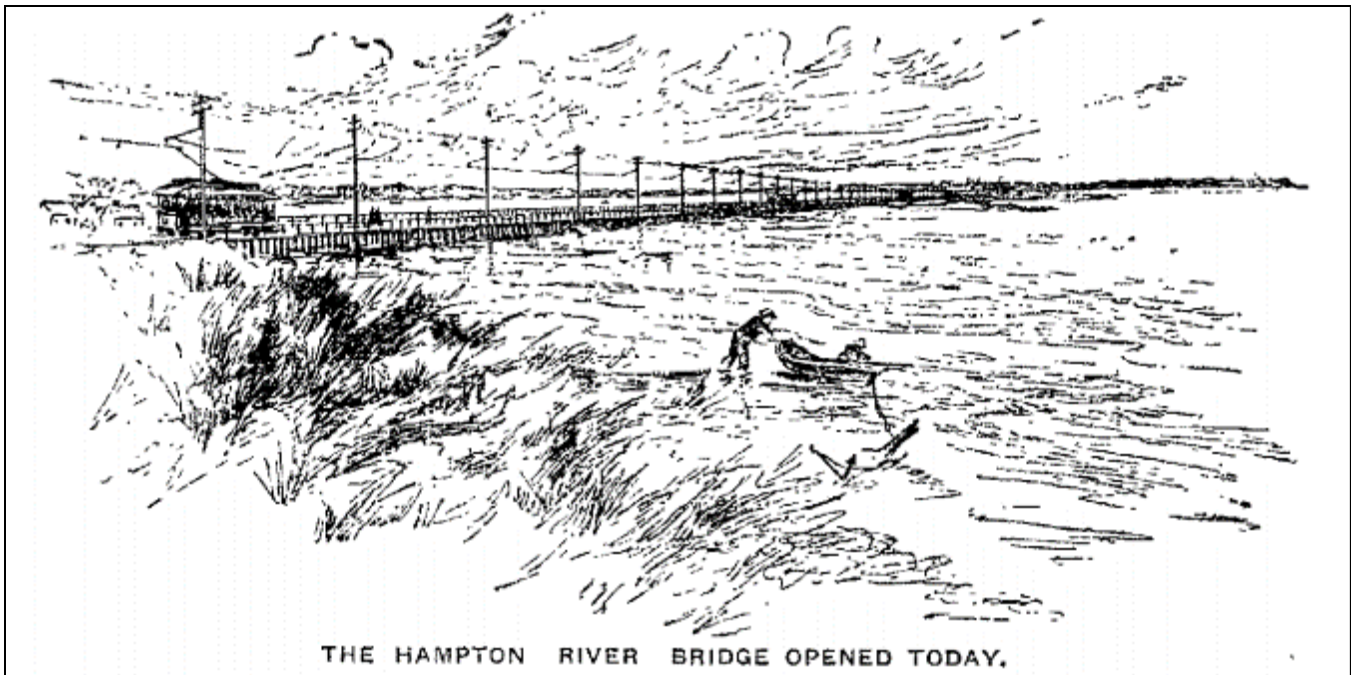


Figure 1. Drawing of the "Mile Long" Bridge when it first opened (The Portsmouth Herald 1902a).

**BAND CONCERT  
AND BALL  
Hampton Beach  
MEMORIAL DAY  
May 30th**

Take trips over the new Hampton River Bridge, one mile long, reached by direct trolley from Lowell, via Haverhill, on the Haverhill, Plaistow and Newton Street Railroad company. Reached from all points on Boston & Maine Railroad by trolley from Exeter and Hampton.

Figure 2. Advertisement, noting the trolley line over the bridge (The Lowell Sun 1902).



Figure 3. c. 1907 postcard (Private Collection).



Figure 4. "Looking South Showing Trestle and Cofferdam Framing Piles Pier 6-S," 4 August 1947 (NHDOT files). Note temporary trestle on the left with Seabrook Beach in the background. As discussed in the Phase IA Archaeological Sensitivity Assessment for the Seabrook-Hampton Bridge 15904 Project, remnants of the wooden pilings shown above are visible at low tide (Hartgen Archeological Associates 2018:30-32).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**

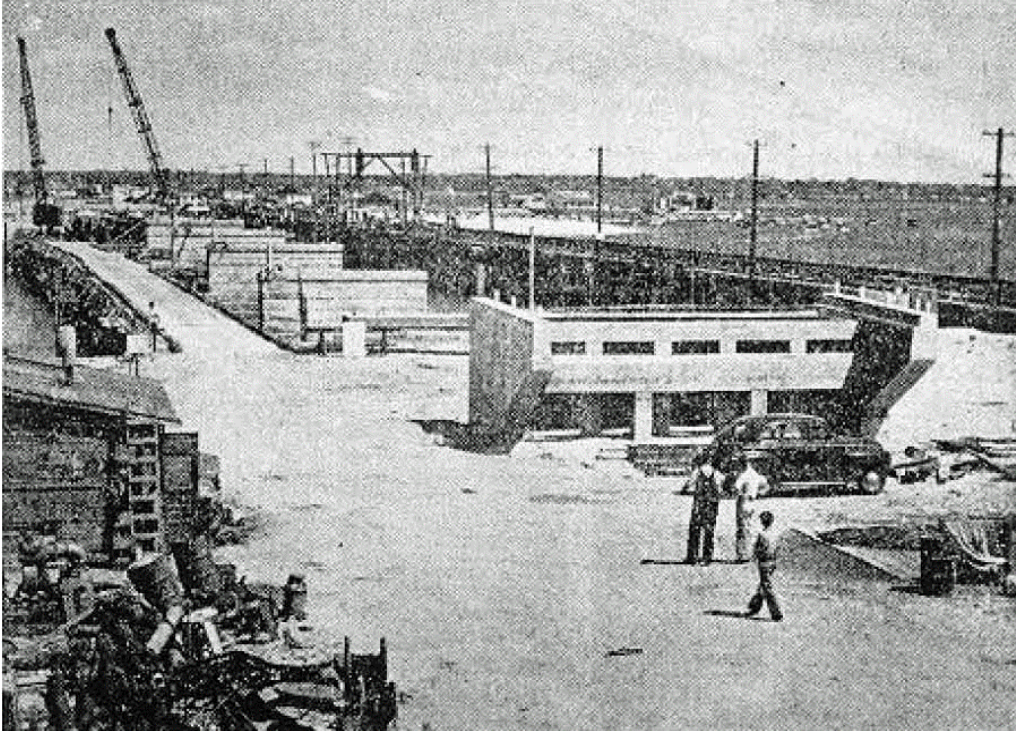


Figure 5. Looking south with the Neil R. Underwood Memorial Bridge under construction, at center, and the "Mile Long" Bridge behind it, c. 1948 (Collection of the Lane Memorial Library).

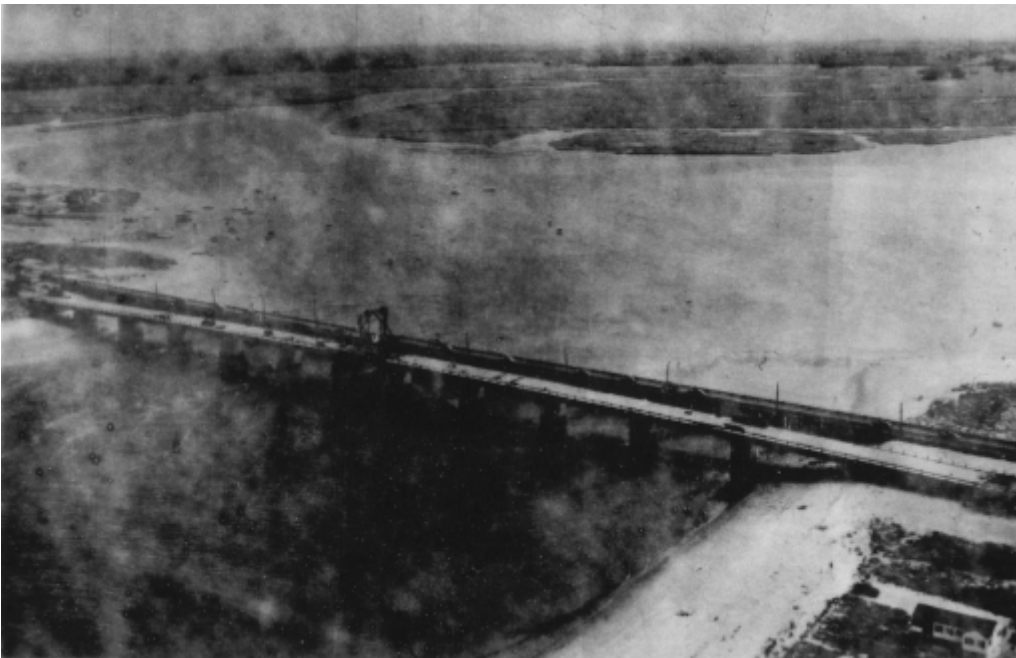


Figure 6. c. 1950 aerial view showing old and new bridges (Collection Hampton Historical Society).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



Figure 7. Portrait of Neil R. Underwood.



Figure 8. View of the bascule in the raised position (Bridgehunter.com).

# HAMPTON HARBOR BRIDGE

## STATE OF NEW HAMPSHIRE

### HIGHWAY DEPARTMENT

HAMPTON, NEW HAMPSHIRE

#### LIST OF DRAWINGS

**CONTRACT 1 - SCHEDULE "A"**

SUBSTRUCTURE

SHEET NO.	TITLE
1-B	GENERAL PLAN AND ELEVATION
2	BORINGS
3	PIERS 1-S TO 6-S, 2-N TO 6-N
4	PIER 1-N & DETAILS
5	ABUTMENTS
6	PENDER SYSTEM

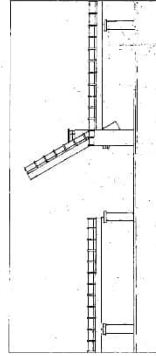
**CONTRACT 2-SCHEDULE "B"**

SUPERSTRUCTURE

SHEET NO.	TITLE
7	STRESS SHEET - APPROACH SPANS
8	CROSS SECTIONS - APPROACH SPANS
9	APPROACH GIRDER DETAILS
10	RAILING DETAILS, SCUPPERS AND SHOES
11	ELEVATIONS AND SECTIONS - BASCULE PIER
12	MACHINERY LAYOUT - BASCULE PIER
13	ARCHITECTURAL DETAILS "A" BASCULE PIER
14	ARCHITECTURAL DETAILS "B" BASCULE PIER
15	STRUCTURAL DETAILS "A" BASCULE PIER
16	STRUCTURAL DETAILS "B" BASCULE PIER
17	STRESS SHEET - BASCULE SPAN
18	PLAN AND SECTIONS - BASCULE SPAN

SUPERSTRUCTURE

SHEET NO.	TITLE
19	FLOOR SYSTEM OVER COUNTERWEIGHT
20	CROSS SECTIONS - BASCULE SPAN
21	GIRDERS - BASCULE SPAN
22	COUNTERWEIGHT - TRUNNION TOWER
23	TRUNNION GIRDER AND TRUNNION TOWER
24	TRUNNION GIRDER SECTIONS
25	TRUNNION DETAILS AND ELECTRIC DRIVE
26	OPERATING MACHINERY
27	HAND OPERATION MACHINERY
28	LOCKING MACHINERY
29	BARRIER GATES
30	WIRING DIAGRAM
31	ELECTRICAL EQUIPMENT AND SERVICE LIGHTING
32	ELECTRICAL DETAILS
33	HEATING, PLUMBING AND ELECTRICAL LAYOUT
34	UTILITY CONDUIT RUNS AND TRANSFORMER VAULT
35	PLAN AND ELEVATIONS - TOLL HOUSE
36	ARCHITECTURAL DETAILS - TOLL HOUSE
37	STRUCTURAL DETAILS - TOLL HOUSE



PREPARED BY  
 PARSONS, KLAPP, BRIDGEMAN & DOUGLAS  
 ENGINEERS, NEW YORK

APPROVED  
*[Signature]*  
 CHIEF ENGINEER

APPROVED  
*[Signature]*  
 COMMISSIONER

DATE *May 6, 1946*

SHEET NO. 1-A

3-1-17

Figure 9. Title page of construction drawings set, 1946 (NHDOT).

INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY #HAM0103

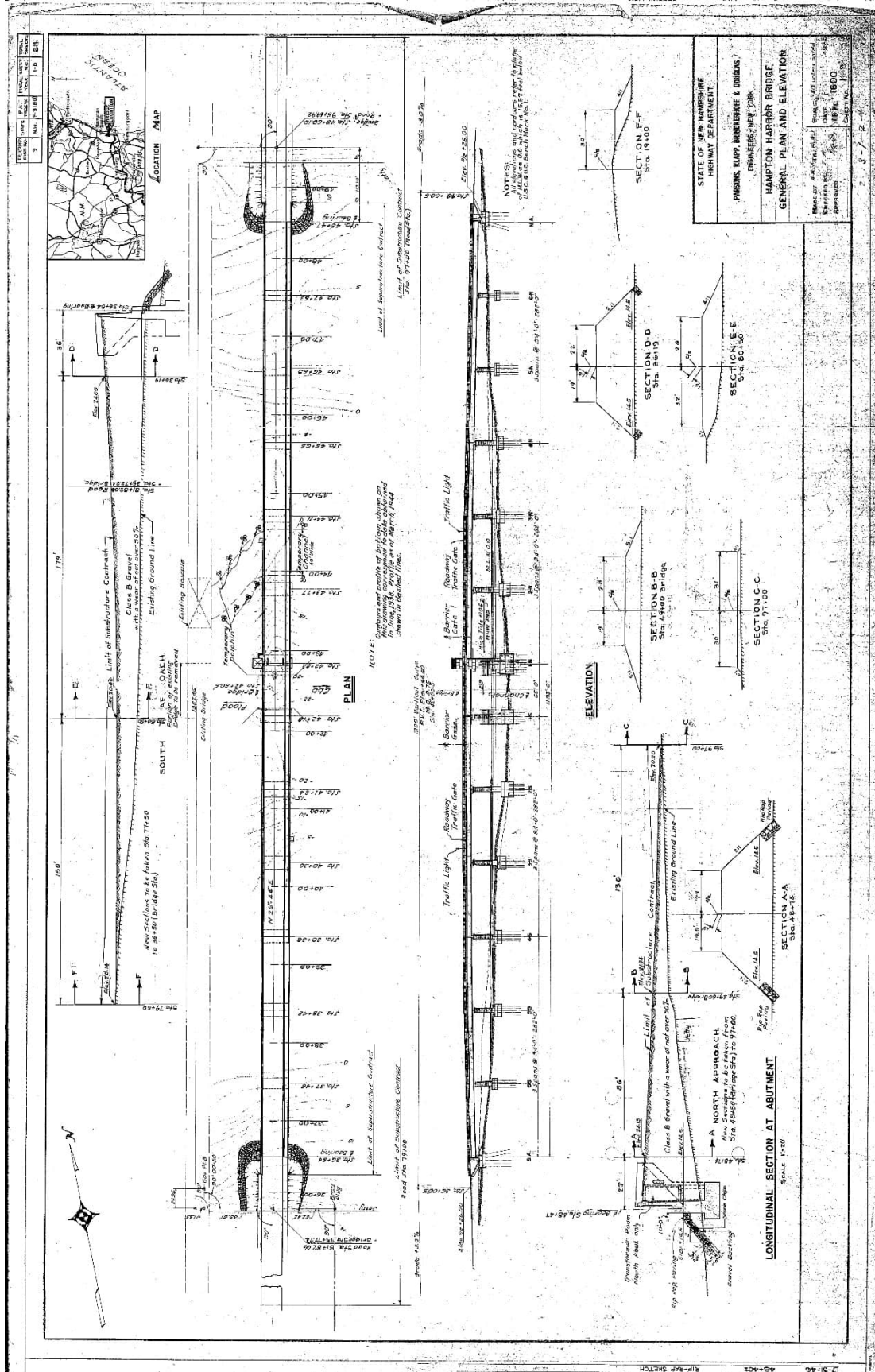


Figure 10. Construction drawing, March 1946 (NHDOT).



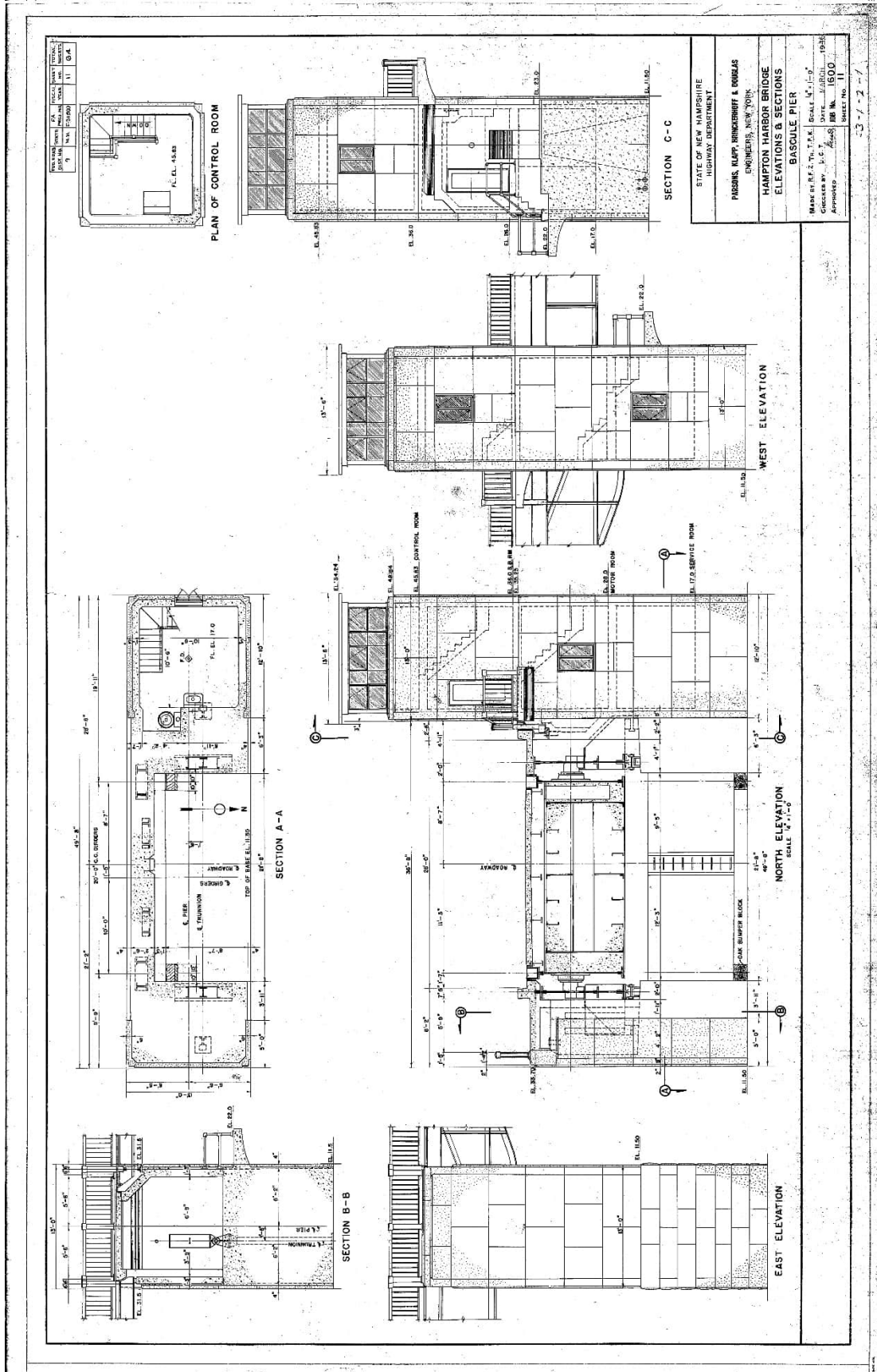


Figure 12. Control tower elevations and details, March 1946 (NHDOT).



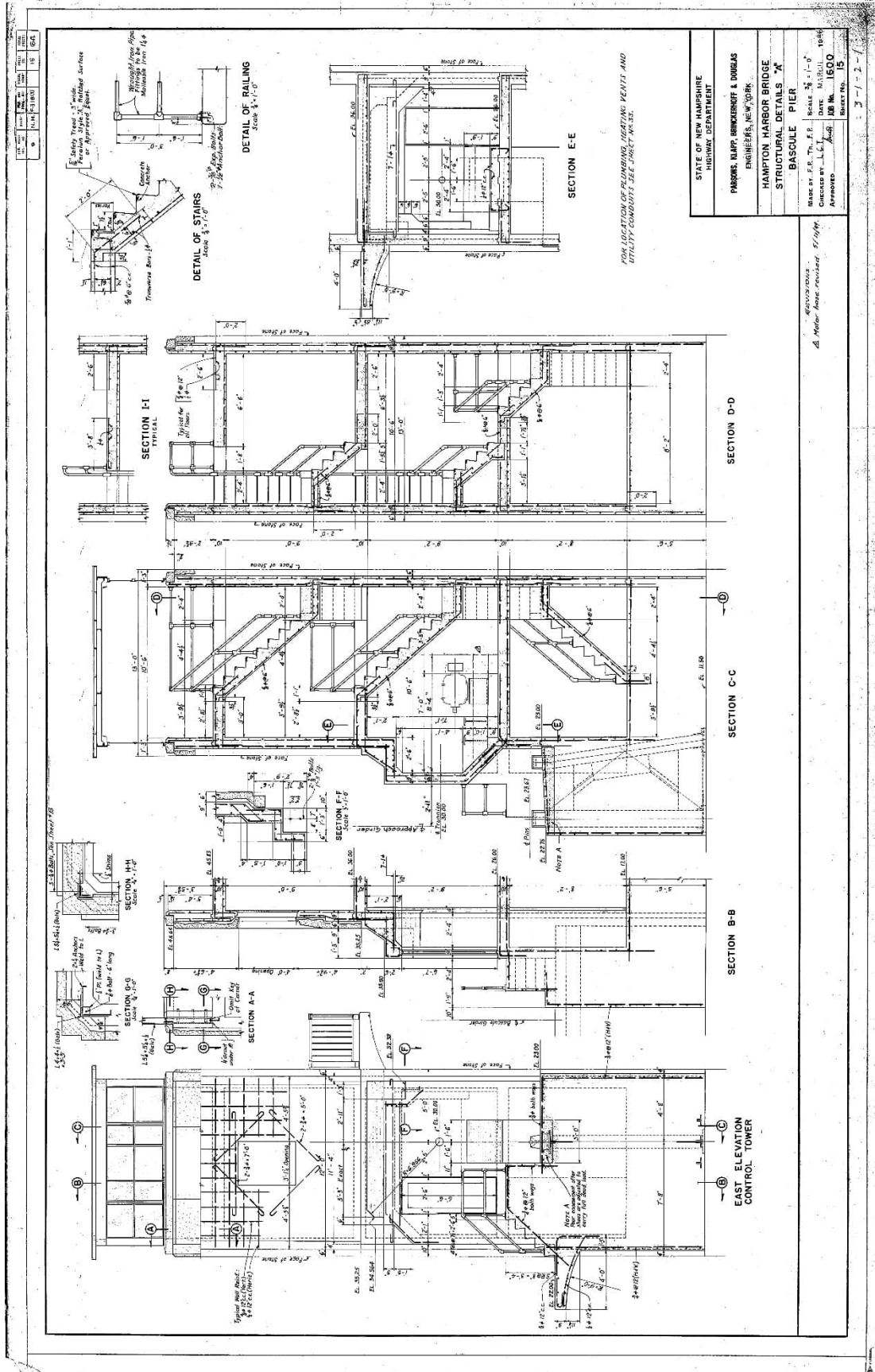


Figure 14. Control tower sections, March 1946 (NH DOT).



INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY #HAM0103

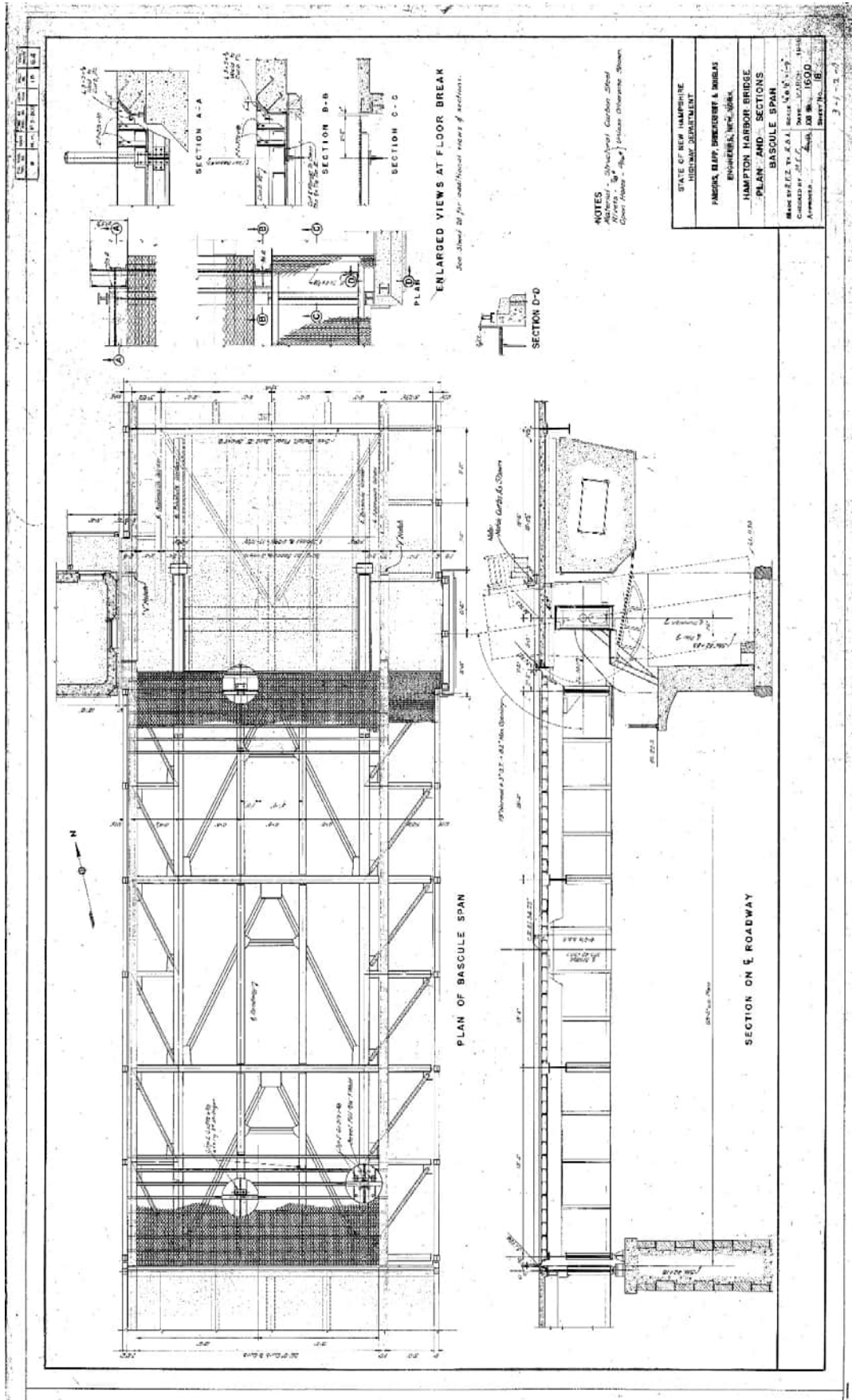


Figure 16. Superstructure and deck, March 1946 (NHDOT).

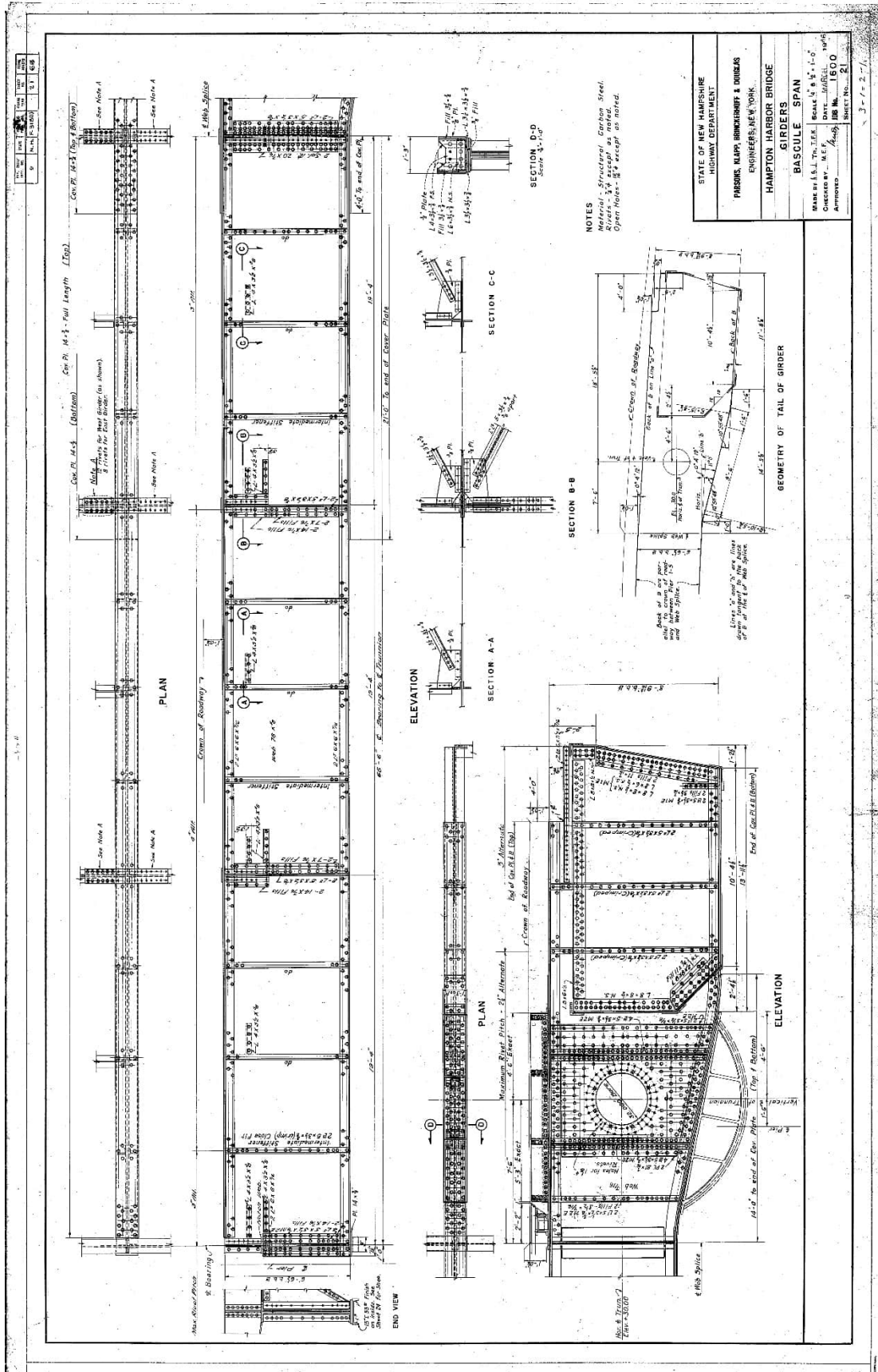


Figure 17. Girder and trunnion details, March 1946 (NHDOT).



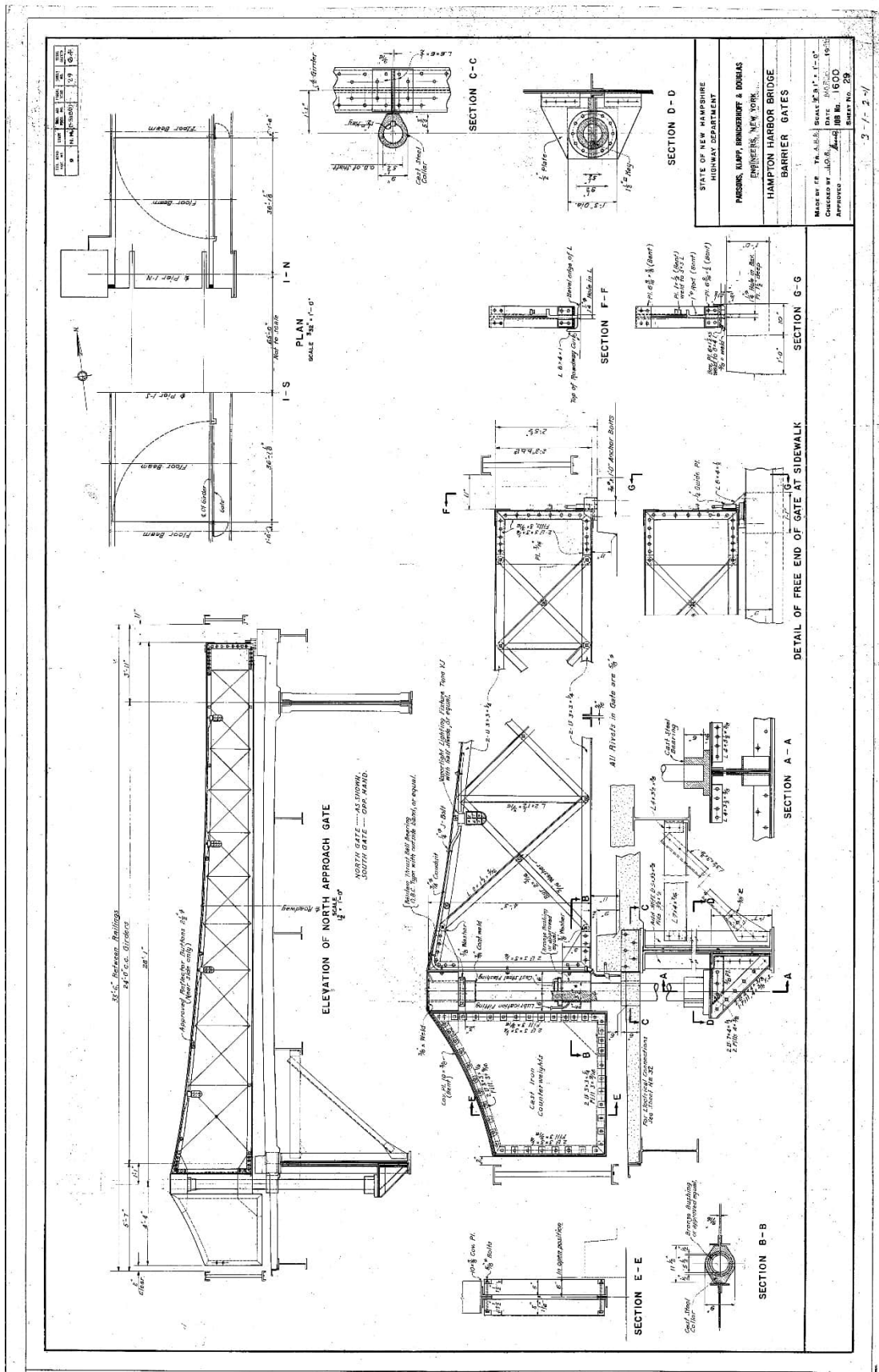


Figure 19. Barrier gate details, March 1946 (NHDOT).

INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY #HAM0103

STATE HIGHWAY DEPT. *Div 6* STEEL SPANS MADE *WHP* CARD 1 OF 2

DATE *8/31/50* CHECKED

TOWN *Hampton-Seabrook* NO. *235/025* BRIDGE OVER *Hampton River* SPAN NO. *all spans*

RATING *Single* MEMBER DESIGN LIVE LOAD *H-15* REQUIRED LIVE LOAD POSTED LIVE LOAD YEAR BUILT *1949*

NO. AND TYPE SPANS *12-Deck Pl. Girder - 1-Bascule Lift (Deck Pl. Gir.)* TOTAL LENGTH *1198'-6" 0-0*

SKEW *-* SUPERELEVATION *-* CROWN *2" in 13'-0"* APPROACH PAVEMENT

GENERAL	ALIGNMENT	GRADE	SIGHT DISTANCE	SPAN LENGTH	WIDTH	CLEARANCE
BRIDGE	<i>tan. N 26°-44' E</i>	<i>1300 V.C.</i>		C. C. BEARINGS <i>*</i>	BETWEEN CURBS <i>26-0</i>	ROAD-WAY RAIL-ROAD HIGH WATER
REAR APPROACH	"	<i>+3%</i>		O. O. FLOOR <i>1198-6</i>	BETWEEN RAILS <i>33-6</i>	HORI-ZONTAL <i>33-6</i>
FORWARD APPROACH	"	<i>+3%</i>		CLEAR SPAN <i>40-0</i>	WALKS <i>E. side 5-0</i>	VERTICAL <i>open 16-8</i>

DESIGNED BY *HIGHWAY DEPT.* CONS. ENG. *Parsons, Klapp, Brinckerhoff* BUILT BY *N.H.H.D.* \* *-4'-8" of CLEARANCE*

MAINTAINED BY STATE TOWN RAILROAD *& Douglass* PLANS *3'-11" 2'-1"* ON FILE NOT ON FILE TOLL OR FREE

PROJECT NO. *Fed. F-318(1)* CONTRACTOR *T. Stuart & Son (Substr.), Phoenix Br. Corp (Superstr.)*

TOTAL COST STEEL COST FLOOR SLAB COST

TRAFFIC SURVEY DATA A B C D F G H I

WATERWAY ELEVATION LOW BRIDGE *+27.19* ELEVATION MAXIMUM HIGH WATER *10.5 High tide* AREA BRIDGE OPENING *1860' (channel)*

ALIGNMENT AND CHARACTER CHANNEL *Tidewater 8'-3 1/2" rise of av. tide*

REMARKS *\* 50' app. 3 @ 94'-0", 3 @ 93'-3", Bascule 65'-0" No. app. 3 @ 94'-0", 2 @ 93'-3", 1 @ 92'-6"*

SUBSTRUCTURE	MATERIAL	TYPE	HEIGHT	SUPPORTING MATERIAL	PILES-TYPE	NO.	SIZE	LENGTH	CAPS
REAR ABUTMENT	<i>R. Conc.</i>	<i>Cantilever</i>	<i>8-6 1/2</i>		<i>wood</i>				
FORWARD ABUTMENT	"	"	"		"				
PIERS OR BENTS	<i>12 R. Conc</i>	<i>Stone Faced</i>			"	<i>*</i>			

WINGS *Rein. Conc. parallel.*

REMARKS *\* Piles were omitted on Piers 1-S, 1-N, 2-N, 4-N, 6-N. Piers 3-S, 2-S, 1-S, 2-N, 3-N, 4-N & 6-N have sheet steel piling around footings left in place*

Postindex PAT. APR. 3, '23 FEB. 8, '27 96-C-7396-14

SUPERSTRUCTURE MATERIAL *Struct Steel & R. Conc.* SPAN TYPE *Deck Plate Girder \**

GRADE TO BRIDGE SEAT *9'-5 3/16"* *9'-0 3/8"* GRADE TO LOW STEEL *7'-8 1/16"* *7'-6 1/2"*

DEPTH	PANELS	AT	PAINT	WEARING COURSE	FLOOR	CURBS	ROAD RAIL	WALK RAIL	BEARINGS
MATERIAL					<i>see note</i>	<i>R. Conc</i>	<i>Struct Steel</i>	<i>Struct Steel</i>	EXPANSION FIXED
TYPE						<i>mono</i>			<i>Rocker shoe</i> <i>Ped shoes</i>
HEIGHT						<i>9"</i>	<i>2'-9"</i>	<i>3'-6"</i>	<i>(1-3" Rad.) with</i> <i>2-3 x 2-1 Base</i>
THICKNESS						<i>1-0" up str</i>			<i>1-6 x 2-10 x 3 MP</i>
FASTENINGS						<i>1-6 dn "</i>			

FLOOR DRAINAGE *Cast steel scuppers. 24 each side* \* *@ Int Supports*

REMARKS *@ Abuts. 1-0" R. 2'-1" x 1-3" x 2 1/2" H.P.I*

\* *Approach spans & Girders are 6'-8 1/2" b-b Ls, 24'-0" c-c (Cont. over 3 spans)*  
*Typical Floor Bms 27" WF @ 18-9 3/8" max. 3-Strgs 18" WF @ 6'-0" c-c*  
*Floor is 7" Reinfc Conc Slab. (4" on sidewalk)*  
*Bascule girders are 20'-0" c-c 6'-6 1/2" b-b Ls. Flooring is 2 1/2" steel grating on 7" Ls. Strgs 21" WF @ 6'-8". Fl. Bms 24" WF @ 19'-4"*  
*10-light stds on sidewalk side*

~~HAMPTON RIVER TOLL BRIDGE~~  
*name changed to NEIL R. UNDERWOOD MEMORIAL BRIDGE*  
*(Pub Acts & Joint Res. 1953 p. 79) Apr. 3, 1953*  
*1994 Electrical repairs with gates to locking bars on lift span*  
*Repair Aux. Transfer Switch.*

*1.5 Miles north of Mass. State Line. (Hampton Harbor Br.)*

TOWN	BRIDGE NO.	ROUTE	STRENGTH	CLEAR ROADWAY	VERTICAL CLEARANCE
<i>Hampton-Seabrook</i>	<i>235/025</i>	<i>NH 1-A</i>	<i>Single</i>		

Figure 20. Bridge card (NHDOT).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



*South approach*



*Looking South*

Figure 21. c. 1949 photographs accompanying bridge card (NHDOT).

INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY #HAM0103

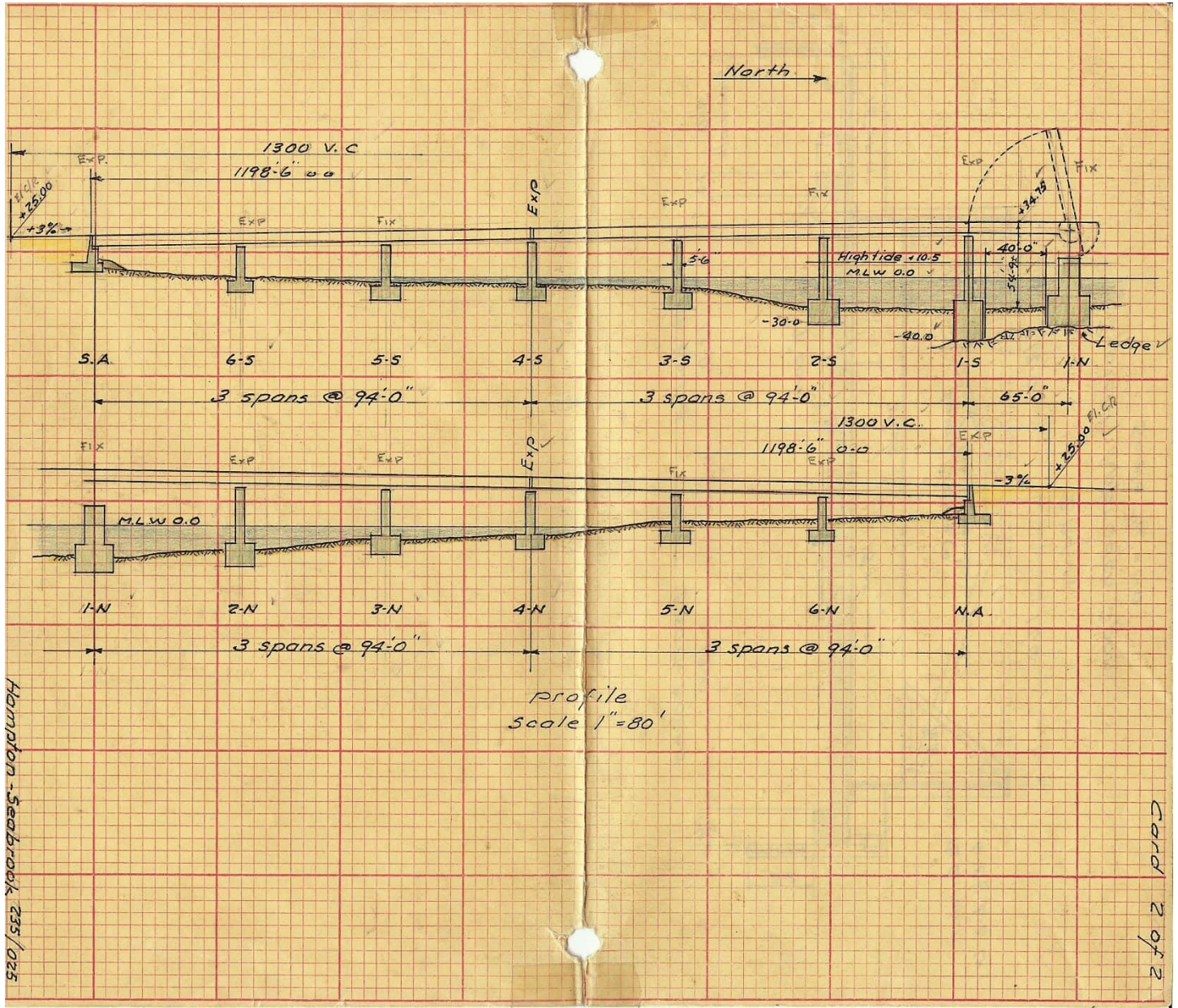


Figure 22. Diagrammatic section from bridge card (NHDOT).

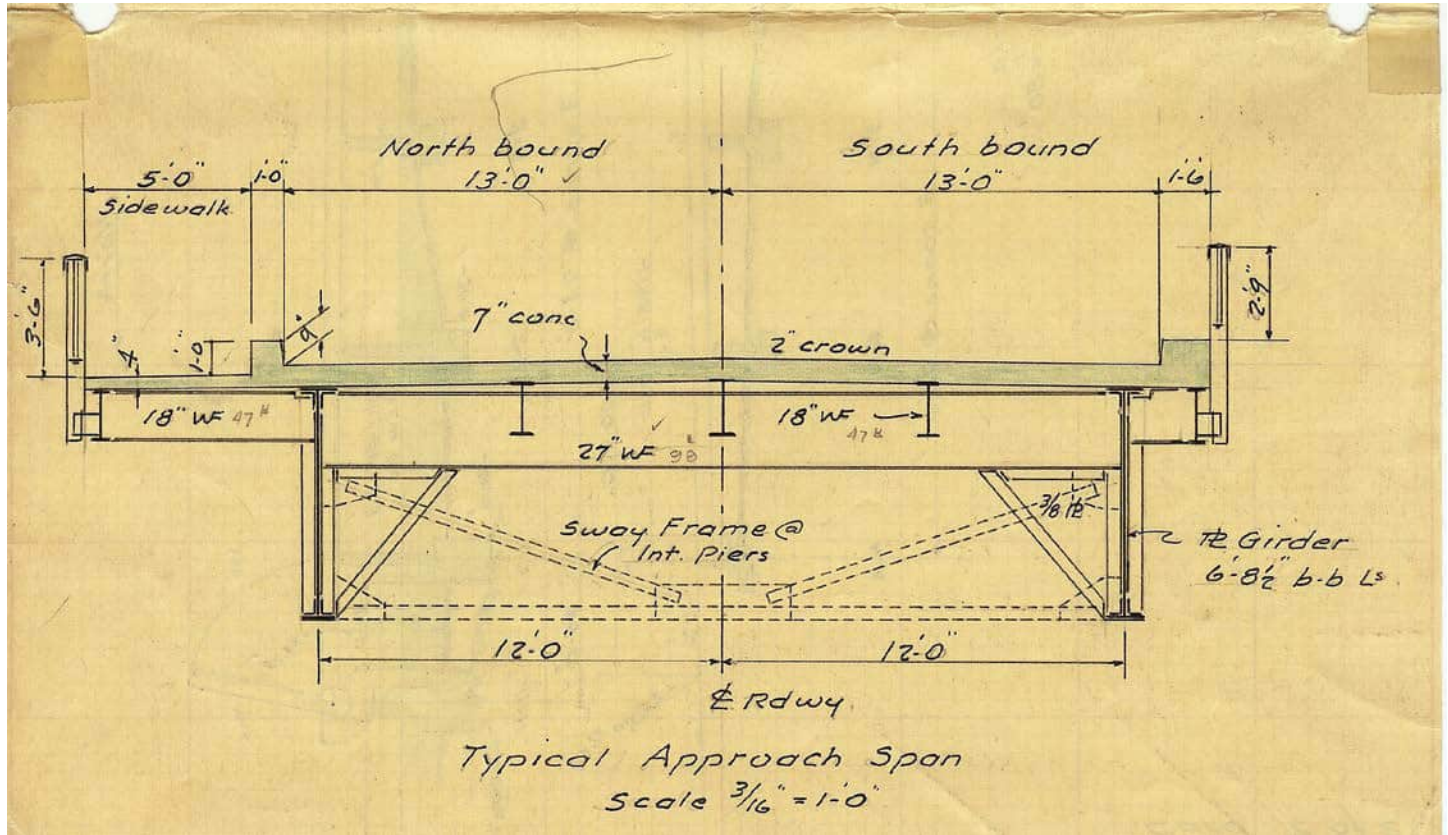


Figure 23. Typical approach span, from bridge card (NHDOT).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**

WATERWAY		ELEVATION	AREA BRIDGE OPENING	AREA RELIEF OPENINGS	
GRADE CENTER OF BRIDGE			MAXIMUM VELOCITY OF FLOW	MAXIMUM RECORDED FLOW	DATE
LOW BRIDGE					
LOW WATER					
NORMAL HIGH WATER					
MAXIMUM HIGH WATER					
FREQUENCY AND DURATION					
CHANNEL, WIDTH AND DEPTH					
BANKS AND BED					
ALIGNMENT					
PROTECTION WORK					
DAMS					
REMARKS					
SUPPORTING STRUCTURES					
TEST DATA					
PILES, TYPE AND SIZE					
REMARKS	<i>Looking south</i>				
<small>Postindex PAT. APR. 3, '23 FEB. 8, '27 96-C-7394-14</small>					
STATE HIGHWAY DEPT.	GENERAL CARD	MADE	CARD	OF	
DATE	(SEE SPAN CARDS FOR DETAILS)	CHECKED			
TOWN					
RATING					
NO.					
APPROACH PAVEMENT					
DESIGNED BY					
MAINTAINED BY					
PROJECT NO.					
FABRICATOR					
TOTAL COST					
LIGHTING SYSTEM					
BENCH MARK DATA					
TRAFFIC SURVEY					
REMARKS					
SUBSTRUCTURE					
ABUTMENTS					
PIERS OR BENT					
REMARKS	<i>Looking south.</i>				

Figure 24. Photographs c. 1949, from bridge card (NHDOT).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



*Looking north*



*Looking north*

TOWN	BRIDGE NO.	ROUTE	STRENGTH								CLEAR ROADWAY				VERTICAL CLEARANCE					
Hampton	235/075	NH 1-A	H6	H5	H8	H10	H12	H15	H20	14'-18'	19'-23'	24'-28'	29'-32'+	10'	11'	12'	13'	14'	14'+	DC

Figure 25. Photographs c. 1949, from bridge card (NHDOT).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



*South Approach*



*East Side*

*Hampton Br. No. 235/025*

Figure 26. Photographs showing replaced railings, probably post-1964, from bridge card (NHDOT).

INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY #HAM0103



*East Elevation  
Seabrook End*



*South Approach*

*Hampton-Seabrook Br # 235/025*

Figure 27. Photographs from bridge card c. 1950 (NHDOT).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



*North Approach*



*East Elevation  
Hampton End*

Figure 28. Photographs of approaches, from bridge card, c. 1950 (NHDOT).

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**

Photo key is located on Page 3.



Photo 2. General view of bridge.

File name: IMG\_0811.jpg Direction: SSE Date: 15 August 2018



Photo 3. General view of bridge.

File name: DSC02951.jpg Direction: NW Date: 15 June 2018

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



Photo 4. View showing north abutment and underside of superstructure.

File name: IMG\_1234.jpg Direction: NE Date: 15 June 2018



Photo 5. View showing south abutment and one of the piers.

File name: IMG\_1201.jpg Direction: S Date: 17 June 2018

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



Photo 6. View showing low-tide exposure of bridge from south abutment.

File name: IMG\_1204.jpg Direction: N Date: 17 June 2018



Photo 7. Deck from south approach.

File name: IMG\_1208.jpg Direction: N Date: 17 June 2018

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



Photo 8. Control house.

File name: DSC\_0594.jpg Direction: NW Date: 14 September 2018

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



Photo 9. Catwalk under movable deck.

File name: 20170911\_121322.jpg Direction: E Date: 11 September 2017

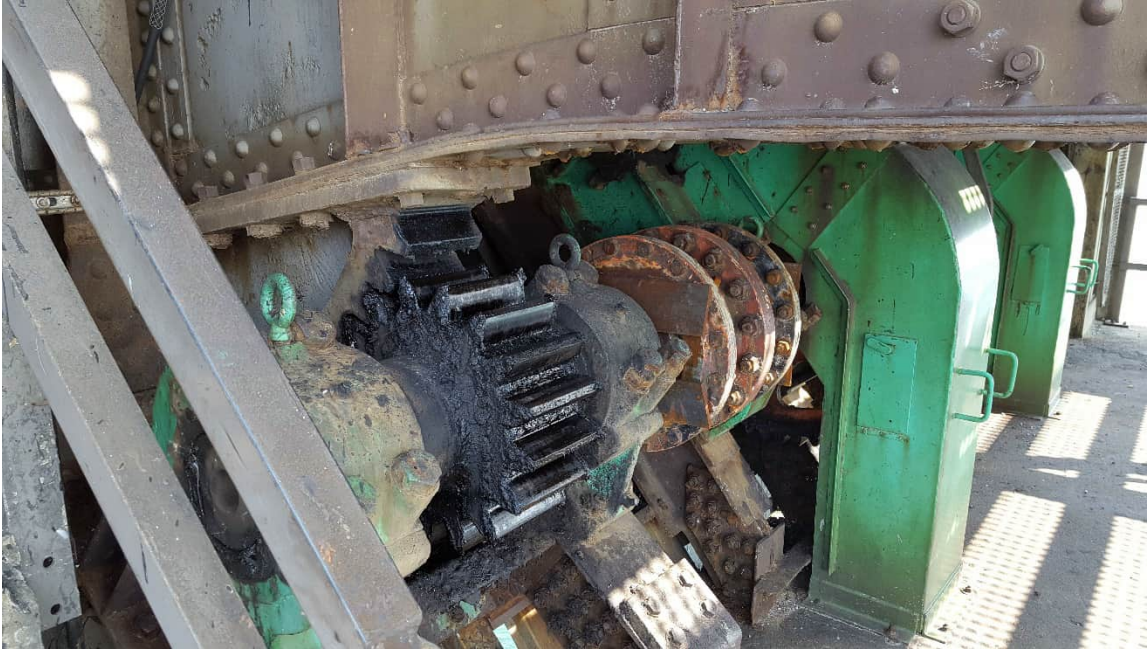


Photo 10. Trunnion machinery detail.

File name: 20170911\_121311.jpg Direction: NE Date: 11 September 2017



Photo 11. Southeast quadrant of the Neil R. Underwood Memorial Bridge. Note wooden pilings visible at low tide, extending north from Pier 6-S.

File name: IMG\_1209.jpg Direction: N Date: 19 June 2018

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**



Photo 12. Wooden pilings adjacent to Pier 5-S under the southeast quadrant of the Neil R. Underwood Memorial Bridge.

File name: IMG\_1199.jpg Direction: WNW Date: 19 June 2018

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY #HAM0103**

**Surveyor's Evaluation:**

NR listed: individual \_\_\_\_\_  
within district \_\_\_\_\_

Integrity: yes \_\_\_\_\_  
no \_\_\_\_\_ x

NR eligible: individual x  
within district \_\_\_\_\_  
not eligible \_\_\_\_\_  
more info needed \_\_\_\_\_

NR Criteria: A \_\_\_\_\_  
B \_\_\_\_\_  
C \_\_\_\_\_  
D \_\_\_\_\_  
E \_\_\_\_\_

I, the undersigned, confirm that the photos in this inventory form have not been digitally manipulated and that they conform to the standards set forth in the NHDHR Photo Policy. These photos were printed at the following commercial printer OR were printed using the following printer, ink, and paper: Canon MG6320 printer, images printed on Epson Ultra Premium Glossy paper, using only black ink. (Color photos must be professionally printed.) The negatives or digital files are housed at/with: Hartgen Archeological Associates, Inc., 1744 Washington Ave Ext, Rensselaer, NY 12144.

**SIGNED:** Walter R. Wheeler

**FOR STATE REGISTER LISTING ONLY!**

If this inventory form is being submitted for consideration of New Hampshire State Register listing, have you included:

\_\_\_\_\_ a photo CD with digital images included in the nomination (does not apply if film photography was used)

\_\_\_\_\_ the State Register Contact Information sheet