



HISTORIC BRIDGE REPORT
FOR
CITY OF CHESAPEAKE
HISTORIC PRESERVATION COMMISSION

By: Wayne Mortimer
Historic Preservation Commission, City staff advisor
Fall / Winter 2019

Summary

This report is one of several tasks assigned by Commission chair Patti McCambridge to members of the HPC and City staff advisers. Wayne Mortimer, City of Chesapeake staff advisor to the Commission, took historic bridge research task and developed documentation on several historic bridges throughout the City.

The report is divided into three basic areas of research and documentation: city owned bridges that are more than 50 years old and still in use; city owned bridges with historic significance but have been replaced; bridges within the city limits owned by other entities such as United States Corp of Engineers (USACE), Norfolk & Portsmouth Belt Line Railroad Company (NPBL) and private bridge investors, United Bridge Partners.

Within the city limits, there are approximately ninety bridge structures that are owned, maintained and operated by the various entities listed above, including Virginia Department of Transportation and Norfolk & Southern Railroad. This report covers the history of a few of these ninety bridges, some of which are very significant in the development of the city. Information for the report was obtained from city's Bridge and Structures Division, Public Works; various on-line resources; the book, *Juniper Waterway*, by Alexander Crosby Brown; documented research by Matt Yeager (city bridge operator, Gilmerton bridge), interview with Donna Coleman (Vice President, NPBL) and information provided by Joel Scussel (USACE, Norfolk District).

The intent of this report was not to provide an exhaustive review of all the documentation on the different bridges, but provide a snapshot of basic bridge information and some historical data (either written or graphic form). This information was formatted to allow ease in changes and /or additions to the report, in essence, making it a living document that could be adjusted by others in the future.

City of Chesapeake bridges
50 years or older and still in use

Centerville Turnpike drawbridge

Triple Decker Overpass bridges

Southgate, Sunray and Campostella Overpasses

Rotunda Avenue bridge

Tidal Creek Bridge

New Mathues bridge

Centerville Turnpike Bridge (City of Chesapeake Structure # 8003)

Location: Centerville Turnpike (Rt. 604) over Chesapeake & Albemarle Canal
(36 degrees 43'24" N, 76 degrees 11'12")

Year opened: 1955.

Bridge description:

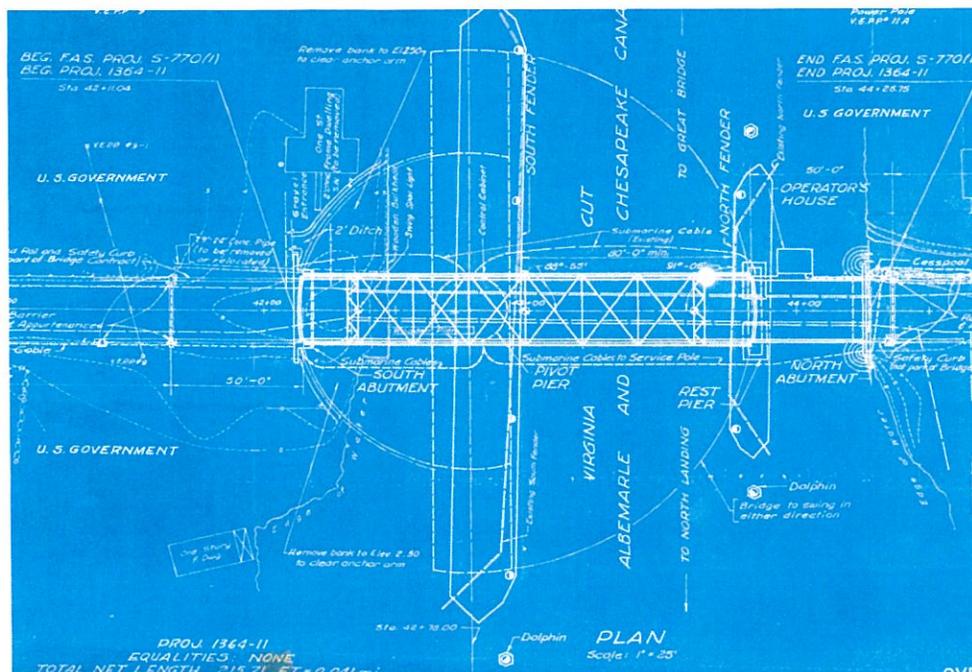
Two Lane, single swing type vehicular bridge, steel grid deck, steel through-truss construction with steel multi-beam approach span

Dimensions – Total length 215.9 ft., Deck width 24 ft., Vertical clearance above deck 14.5 ft.

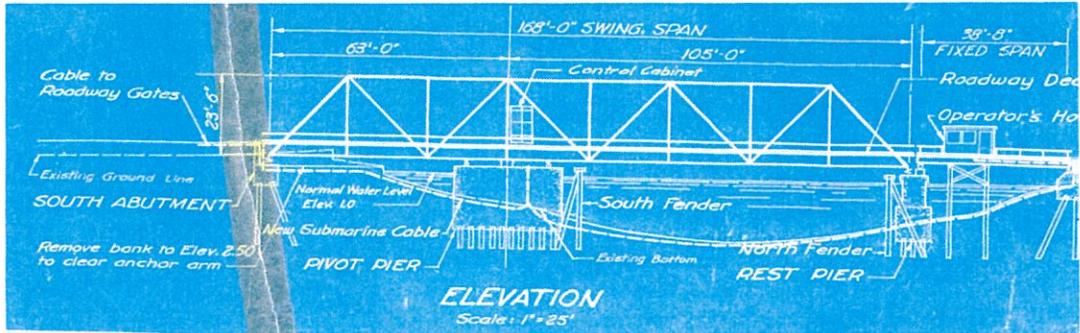
Current average daily traffic: 16,000

Historical data:

Original drawbridge over the canal at this location was built by private turnpike company in 1878. It was a single lane drawbridge. Construction of the current bridge was funded and managed by Commonwealth of Virginia (state project number 1364-16) with Federal assistance (project S-770, 1). It is currently owned and operated by City of Chesapeake. Designed by "Fay, Spofford & Thorndike" (consulting engineers - Boston Massachusetts). Firm was founded in 1914 and acquired by "Stantec" 2015. The company did many significant bridge projects in Northeast US, including engineering support on Boston's "Big Dig" which is a major underground highway that runs through center of Boston (Opened in 2002).



Site plan - original working drawings (1954)



Bridge Section – original working drawings (1954)

Photos:



Centerville Turnpike Bridge - Profile



Centerville Turnpike Bridge - South Portal

Notes:

Bridge closed for 6 months starting August 24, 2019 for rehabilitation to infrastructure. Current Weight Limits: 25 tons (single legal load); 32 tons (semi legal load)

Triple Decker Overpass (upper) and Bridge (lower)

(City of Chesapeake Structure #'s 1808, 1859)

Location:

Military Hwy Rt. 13 over Norfolk and Western Railroad / Rt. 460 and Rt. 1
(36° 46' 35.76" N, 76° 17' 8.16" W)

Year opened: 1948

Bridge description:

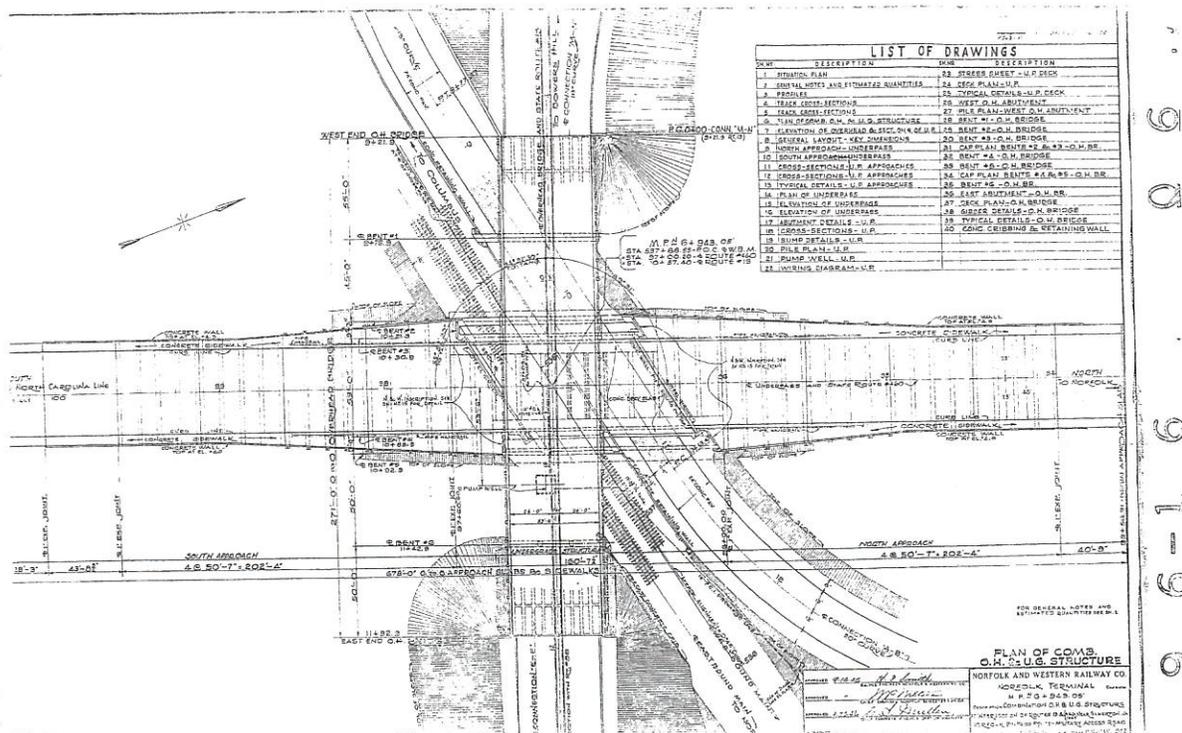
Multilevel with overpass (Rt. 13), bridge (railway / Rt. 460), and road way (Rt. 166, Bainbridge Blvd.) at grade

Overpass - (upper) 7 concrete multi T-Beam spans 74' wide, length 271'

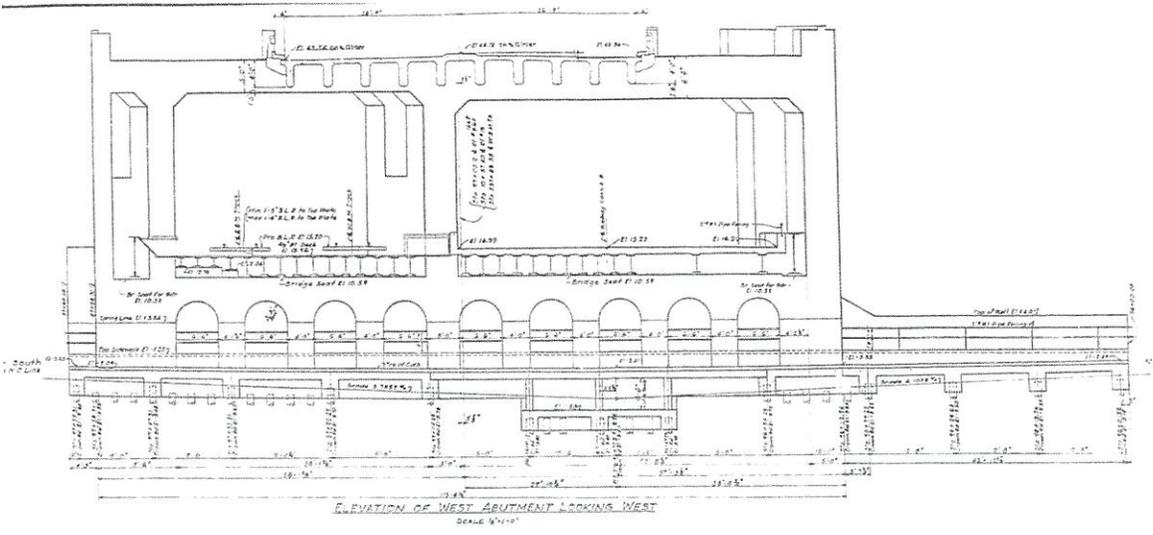
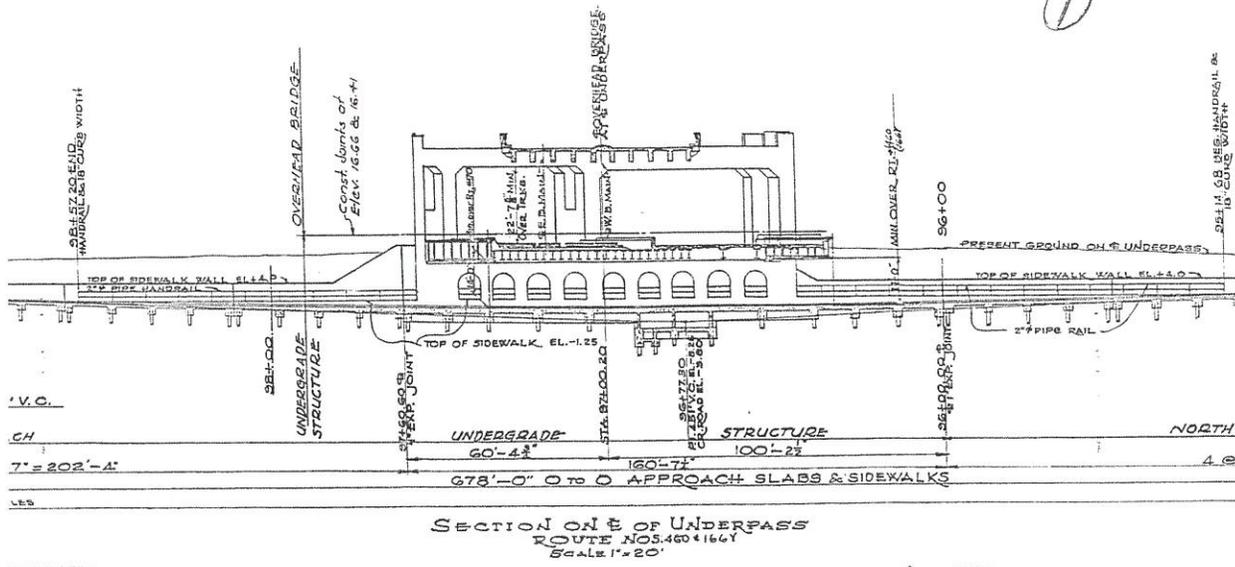
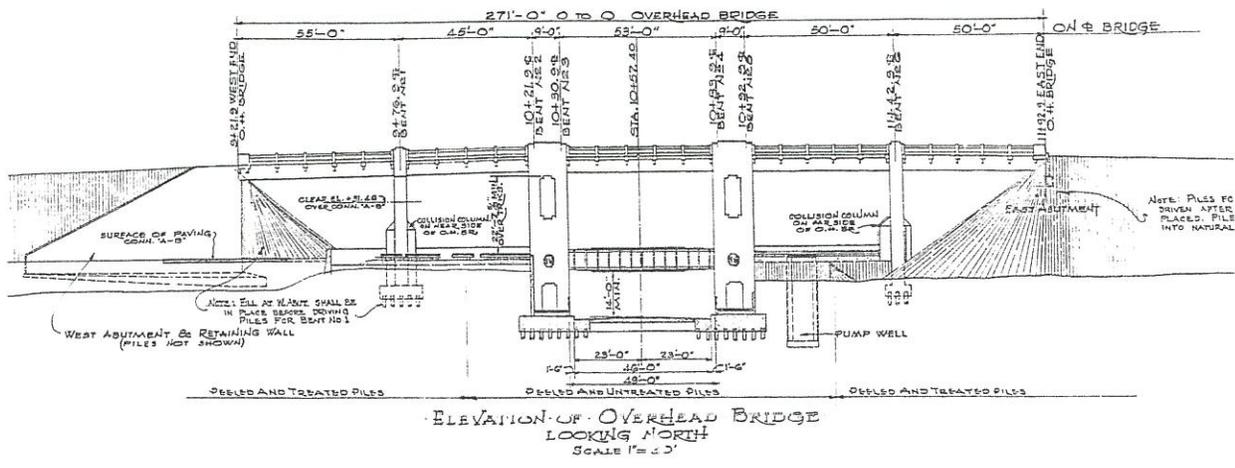
Bridge - (lower) single steel multi-girder span 43' wide, length 69'

Historical data:

Overpass and bridge built by Commonwealth of Virginia. Structure currently owned and maintained by City of Chesapeake.



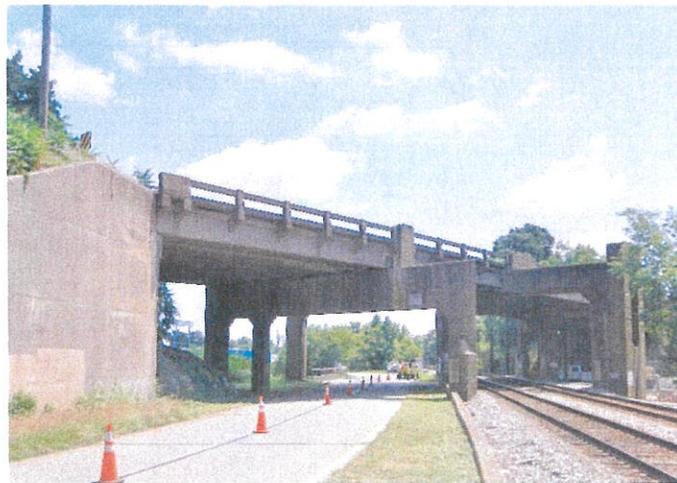
Triple Deck Overpass and Bridge working drawings (circa 1947) – Site plan



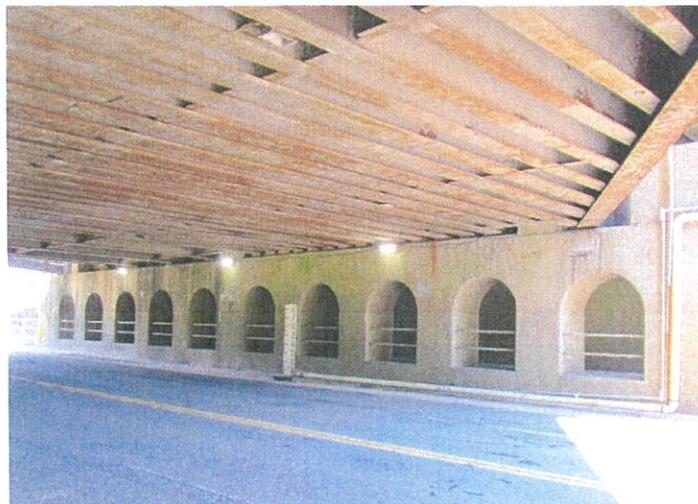
Triple Deck Overpass and Bridge working drawings (circa 1947) – Elevations



Upper Deck (Military Highway, Route 13)



Middle Deck (Railroad, Route 460)



Lower Deck (Route 166 – Bainbridge Blvd.)

Southgate, Sunray & Campostella Overpasses

(City of Chesapeake Structure #'s 1821, 1811, 1800)

Location:

Southgate Overpass – Bainbridge Blvd, Rt. 166 over Norfolk and Western railroad
(36° 48' 8.16" N, 76 ° 16' 33.98" W)

Sunray Overpass – Military Highway Rt.13 over Norfolk and Western railroad
(36° 46' 57.29" N, 76 ° 23' 55.84" W)

Campostella Overpass – Campostella Road over Norfolk and Western railroad
(36° 48' 4.56" N, 76 ° 15' 21.62" W)

Year opened: All open by 1938.

Bridge descriptions:

Southgate Overpass – Five weathering steel multi-girder spans, 34 feet wide

Sunray Overpass – Three Steel multi-beam spans, 52 feet wide

Campostella Overpass – Three steel multi-girder spans, 58 feet wide

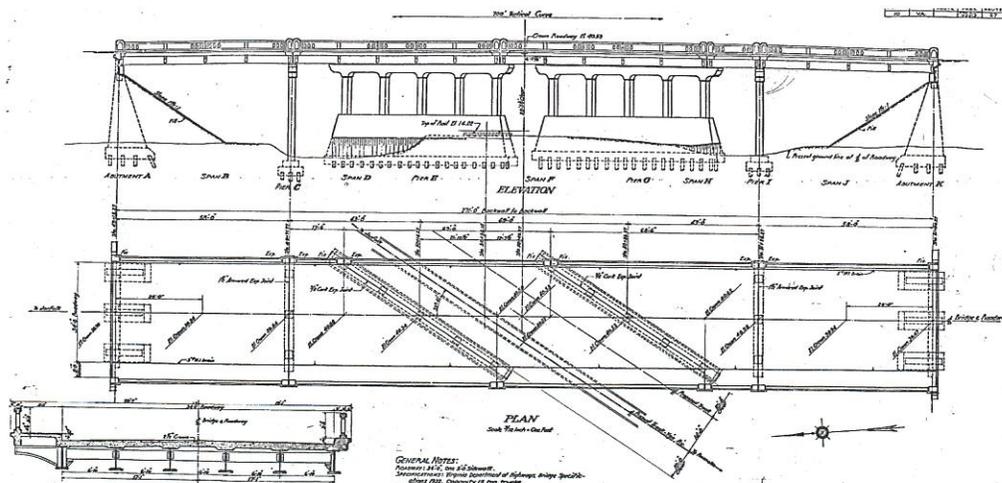
Southgate Overpass – Virginia Commonwealth Project Number - 532 M B

Sunray Overpass - Virginia Commonwealth Project Number – 111508

Campostella Overpass – (unknown)

Historical data:

The three overpasses were part of a state effort to eliminate grade crossings of railroads and provide toll free access into and out of Norfolk. Route went along Route 13 (Military Highway) and Routes 460 / 166 (Bainbridge Blvd). The work included building five overpasses and two bridges over branches of the Elizabeth River (Gilmerton & Campostella). According to a 1937 *Virginian Pilot* article, this work would allow for a toll free road from sea to mountains for the first time in Virginia history. The City of Chesapeake now owns and maintains these bridges.

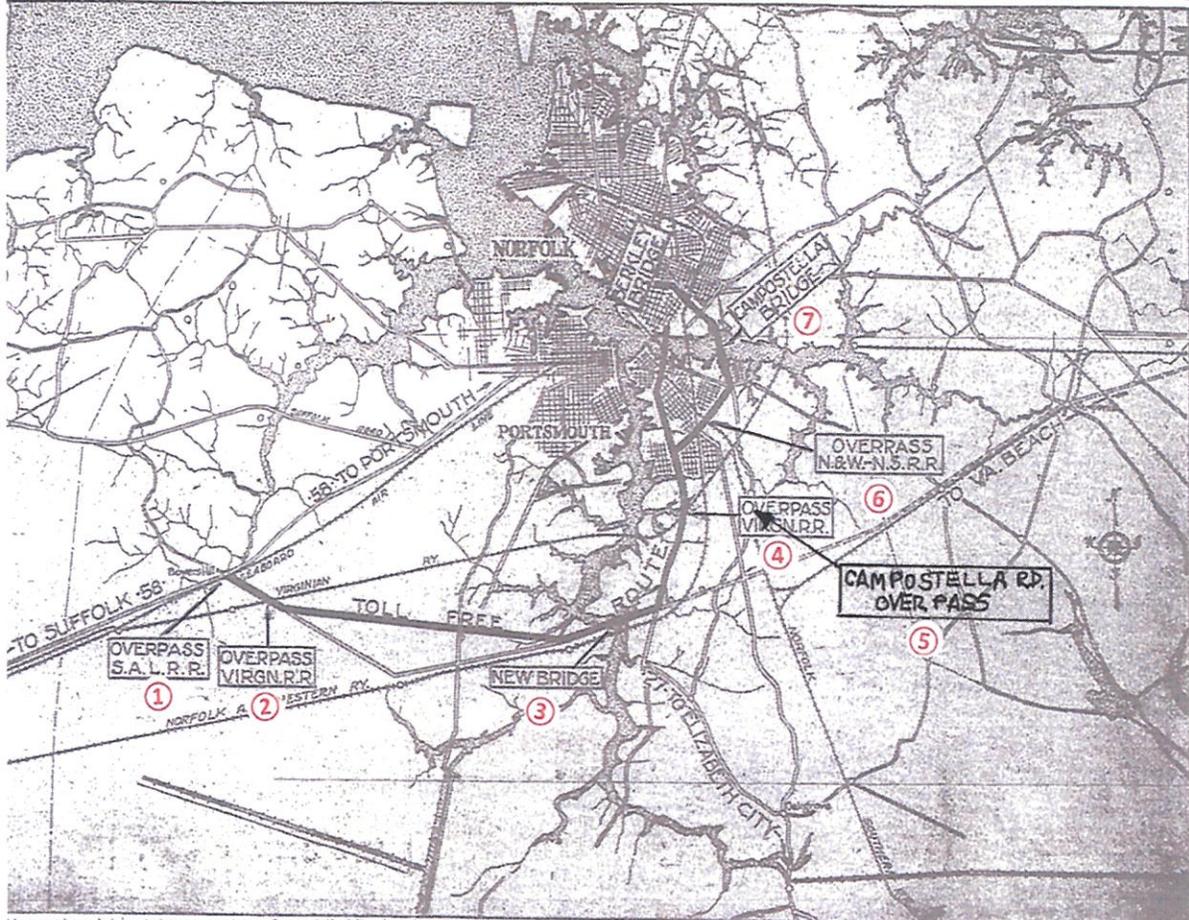


Southgate Overpass working drawings - elevation / plan / section (1936)

1937 Virginian Pilot article on importance of these overpasses:

Norfolk, Virginia, Sunday, July 25, 1937

Where More Than \$1,375,000 is Going to Eliminate Grade Crossings, Tolls



This map shows how motorists can get into and out of Norfolk when the toll-free entrance route has been completed, along with the locations of four overpasses which will eliminate five grade crossings in the route. Work is progressing on the bridge, the grading of the roadway and some of the overpasses. The projects in this undertaking, completed and planned for completion, will cost a total of \$1,375,000 and for the first time in history Virginia will have a toll-free highway from the mountains to the sea.

- ① OVERPASS S.A.L.R.R. – Removed about 1968. Was located roughly where S. Military Hwy & W. Military Hwy intersect. In the articles it is referred to as the overpass over the Seaboard Air Line R.R.
- ② OVERPASS VIRGN R.R. – Sunray Overpass. Still there.
- ③ NEW BRIDGE – Original Gilmerton Bridge. Replaced 2013 at the same location.
- ④ OVERPASS VIRGN R.R. – Southgate Overpass. Still there.
- ⑤ CAMPOSTELLA RD. OVERPASS – This overpass wasn't labeled on the original map, but is located under the label for bridge ④. Still there.
- ⑥ OVERPASS N&W-N.S.R.R. - Located at the north end of Atlantic Ave. (Crosses over Liberty Ave & RR tracks. Replaced about 1998.
- ⑦ CAMPOSTELLA BRIDGE – Was a draw bridge at the time, very similar in design to the original Gilmerton Bridge. Replaced at roughly the same location with a 65' highrise fixed bridge which currently crosses the Eastern Branch of the Elizabeth River.

25 JUL 1937

Work Pushed On New Route Into Norfolk

Projects Involved in Toll
Free Highway Cost
\$1,376,400

Four Overpasses

Officials Hope Road Will
Be Open to Traffic
Late This Fall

Work on the various projects which will go to make for Norfolk her first toll-free route to and from the rest of the State and that work, to be enlarged later, will cost \$1,376,400, is progressing at a fast clip.

The biggest item in all the projects, of course, is the bridge being constructed over the southern branch of the Elizabeth River near Gilmerton. It is to cost \$470,000 and construction is being pushed.

But four overpasses, one of them over two railroads, will cost an estimated \$535,000. The locations of these overpasses are shown in the accompanying drawing. One will be over the Seaboard Air Line tracks near Bowers Hill, another will be over the Virginian tracks near the same place, the third will be over the Virginian tracks on Route 27 and the other, and largest one, will be over both the Norfolk & Western and Norfolk Southern tracks in South Norfolk.

Estimated Costs
It is estimated that the first two of these will cost about \$80,000 each. Contracts for the overpass over the Virginian on Route 27 and the one over the Norfolk Southern and the Norfolk & Western have been let and work started. The former will cost about \$80,000 and the latter will cost \$285,000.

Grading and paving of the new roadway and improvements to some old roadway between Routes 27 and 58, which the new highway will connect for the toll-free entrance, will cost about \$221,000. Much of the grading work has been completed.

Other projects in the toll-free route and their approximate costs include:

Widening of Route No. 27, near Portlock, \$40,000; widening the same route in South Norfolk, \$25,000; extending Route No. 27 to Main and Liberty streets, Berkley, \$43,000; and widening and repairing Wilson road, \$42,000. Some of this work already has been completed and the other soon will be finished.

One of the most important parts of the whole project, for the future of the city, was the extension of Route 27 to Main and Liberty streets, which gives a more direct route into the city over the Berkley Bridge, a privately-owned toll bridge. This work was done with the idea of diverting more and more traffic over this bridge, for the city has a contract with the owners by which it is hoped the bridge will be made toll-free within a few more years. The more traffic that flows over the bridge, the sooner will it be made toll-free.

The map shows how much more direct is the route to the business district by this bridge than over the toll-free Campostella Bridge.

Driving Time Less

Although in mileage, the toll-free highway will be longer than two other alternative routes to and from the city, it is estimated that the driving time will be considerably less. It is nine miles from the city line to Bowers Hill, where the new road will leave Route No. 58, by way of the Norfolk and Portsmouth ferries. It is 10 and three-fourths miles from the city line to Bowers Hill over the Norfolk-Portsmouth Bridge route and it will be 11 and a half miles.

Director of Public Works W. E. Taylor, Jr. last week made a test of the driving time between the city line and Bowers Hill. It took him 27 minutes to drive over the ferry route, including the time he was on the ferry. It required 18 and a half minutes over the Norfolk-Portsmouth Bridge route. He estimates, with no grade crossing when the free route is completed, it will require only 15 minutes to drive over this route to the city line from Bowers Hill.

It was Mr. Taylor who first thought of and planned this free entrance by the toll-free bridge. He thought possible of approaching the State Highway Commission.

Work Pushed On New Route Into Norfolk

(Continued from Page 1)

planned it and he and City Manager Thomas P. Thompson had to conduct a long hard fight to be approved by the State Highway Commission.

Mr. Thompson took the lead in this fight, which required many trips to Richmond, public hearings and other troubles. The highway department finally agreed to build the road and allocated some funds for it, including some Federal funds. Owners of the Norfolk-Portsmouth Bridge protested in Washington and the proposal hit a snag in the Federal Bureau of Roads.

Another fight followed, finally won by the city. There was new trouble about obtaining a permit from the War Department for the toll-free bridge, which is being rushed, just north of the Norfolk & Western Railway Bridge. This trouble also finally was overcome.

Now, for the first time in history, Norfolk and the State of Virginia as a whole are assured of a toll-free highway from the mountains to the sea. Officials hope to see the route in use by late fall, although all the overpass work is not expected to be completed by that time.

It is the plan of the State Highway Commission for the present to construct only a single roadway between Routes 27 and 58, but ultimately to have a double roadway, with a parkway in the center, and one-way traffic for each. The bridge and overpasses are being constructed to take care of four lanes of traffic, building for the future.

Franklin to Norfolk; No Toll, No Crossing

When the new toll-free route is complete, motorists can come into Norfolk all the way from Franklin, 44 miles west, without a toll or a single grade-level railroad crossing.

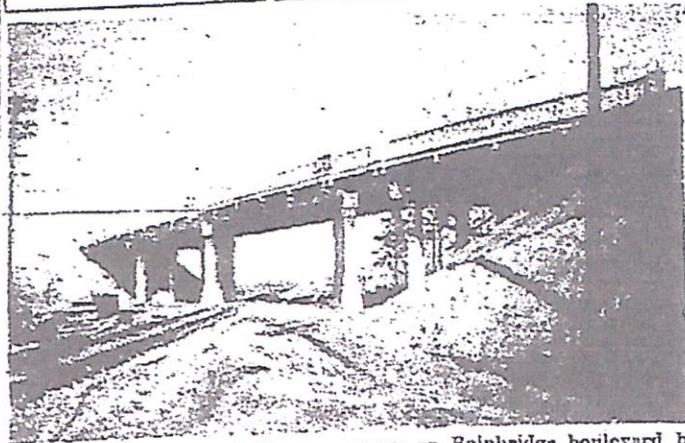
The road now goes under the Southern Railway tracks just this side of Franklin. At Carrsville the road goes over the Seaboard Air Line and then goes under the Norfolk & Western at Magnolia.

In Suffolk there are two routes through the city, either of which avoids grade-level crossings. One route takes the motorist over both the Seaboard and Virginia tracks on a single overpass.

From Suffolk to Bowers Hill there are two underpasses, one under the Atlantic Coast Line and the other under the Southern. From Bowers Hill the new route will be clear of all grade-level crossings as explained above.

16 Dec 1937

Now Open to Traffic



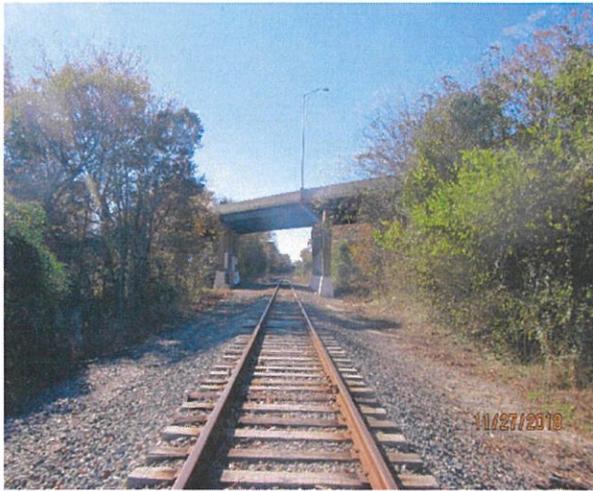
The new Virginia Railway overpass on Bainbridge boulevard between South Norfolk and Portlock, which was thrown open to public use Tuesday afternoon. The overpass is a link in the toll-free entry into Norfolk, the others being a vehicular bridge over the Southern Branch of the Elizabeth River and another overpass spanning the tracks of the Norfolk & Western and Norfolk Southern. The Virginian overpass, shown above, was constructed at a cost of approximately \$100,000. It is 2,408 feet long, including the approaches, and the span over the railroad tracks is 273 feet and the clearance 22 1/2 feet.

Southgate Overpass opening

Text from article on Southgate Overpass above

The new Virginia Railway overpass on Bainbridge Boulevard between South Norfolk and Portlock, which was thrown open to public use Tuesday afternoon. The overpass is a link in the toll-free entry into Norfolk. The others being a vehicular bridge over the Southern Branch of the Elizabeth River and another overpass spanning the tracks of the Norfolk & Western and Norfolk Southern. The Virginian overpass shown above was constructed at a cost of approximately \$100,000. It is 2,408 feet long, including the approaches, and the span over the railroad tracks is 273 feet and the clearance 22 1/2 feet.

Photos:



Southgate Overpass



Sunray Overpass



Campostella Overpass

Notes:

Both Southgate and Campostella Overpasses have repaired structure and new decks. Sunray is currently (2019) having new deck installed and repairs made to structure.

Rotunda Avenue Bridge (City of Chesapeake Structure # 8037)

Location: Rotunda Avenue over tributary to Goose Creek (36° 46' 58.63" N, 76° 23' 49.09" W)

Year opened: 1969.

Bridge description:

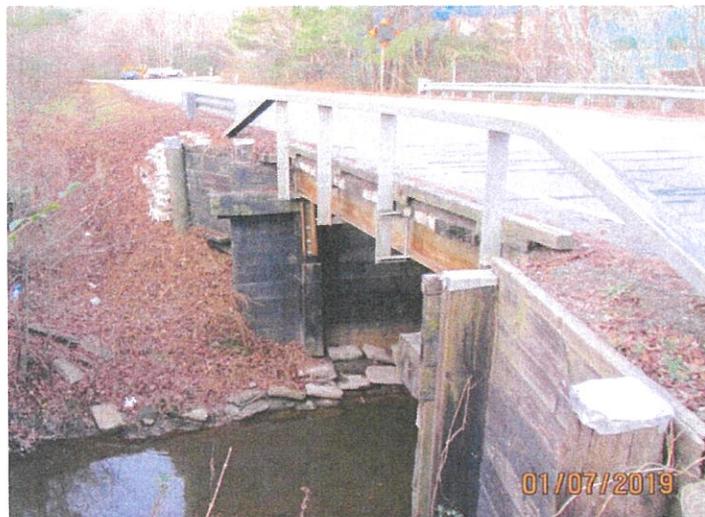
Two Lane, timber deck: single span multi-beam span,

Dimensions – Total length 20 ft., Deck width 30 ft.

Historical data:

Constructed and maintained by City of Chesapeake

Photos:



Tidal Creek Bridge (City of Chesapeake Structure # 1829)

Location:

Airline Blvd over Tidal Stream (tributary of Indian River)
(36° 47' 19.73" N, 76° 24' 31.32" W)

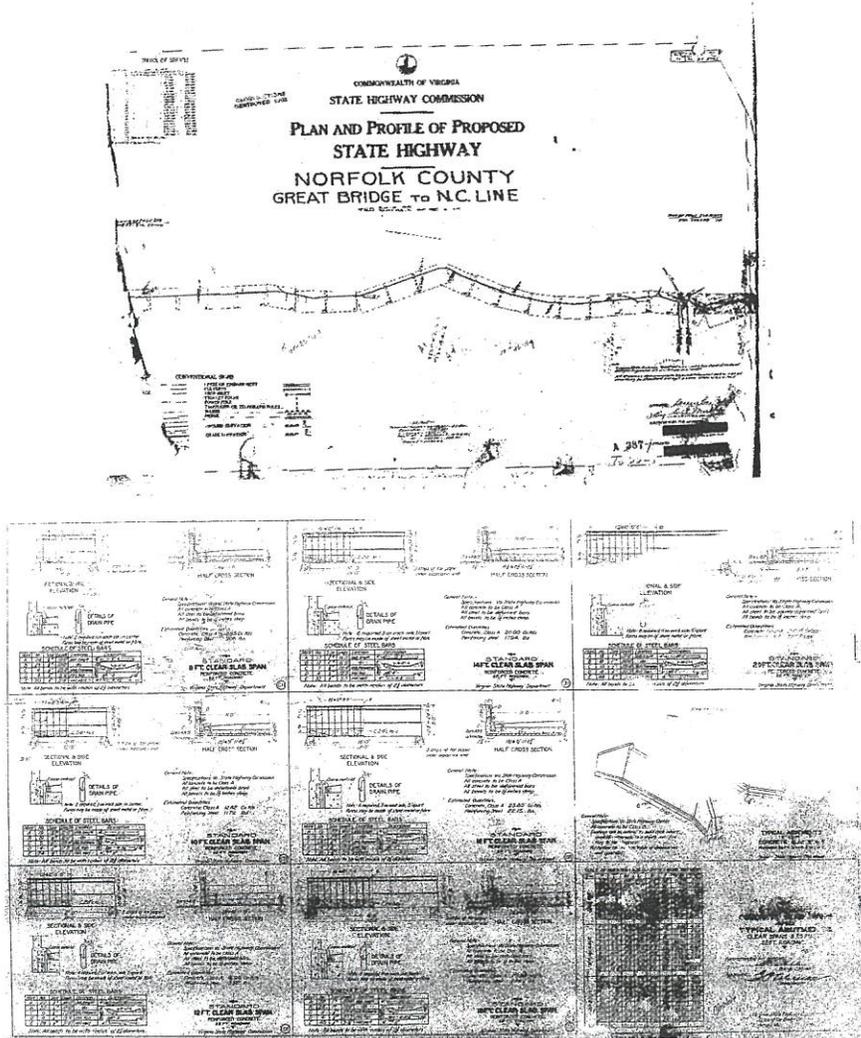
Year opened: 1932.

Bridge description:

Three Lane, single concrete slab span
Dimensions – Total length 23 ft., Deck width 33 ft.

Historical data:

Constructed by Commonwealth of Virginia State Highway Commission as part of a state highway through Norfolk County (State Project 279A). Owned & maintained by City of Chesapeake



Construction working drawings 1932 (cover sheet / standard bridge layouts and details)

Photos:



New Mathues Bridge (City of Chesapeake Structure # 8019)

Location: Fentress Airfield Rd (Rt. 636) over Pocyaty River (36 °40' 31.19" N, 76° 8' 49.04" W)

Year opened: 1963.

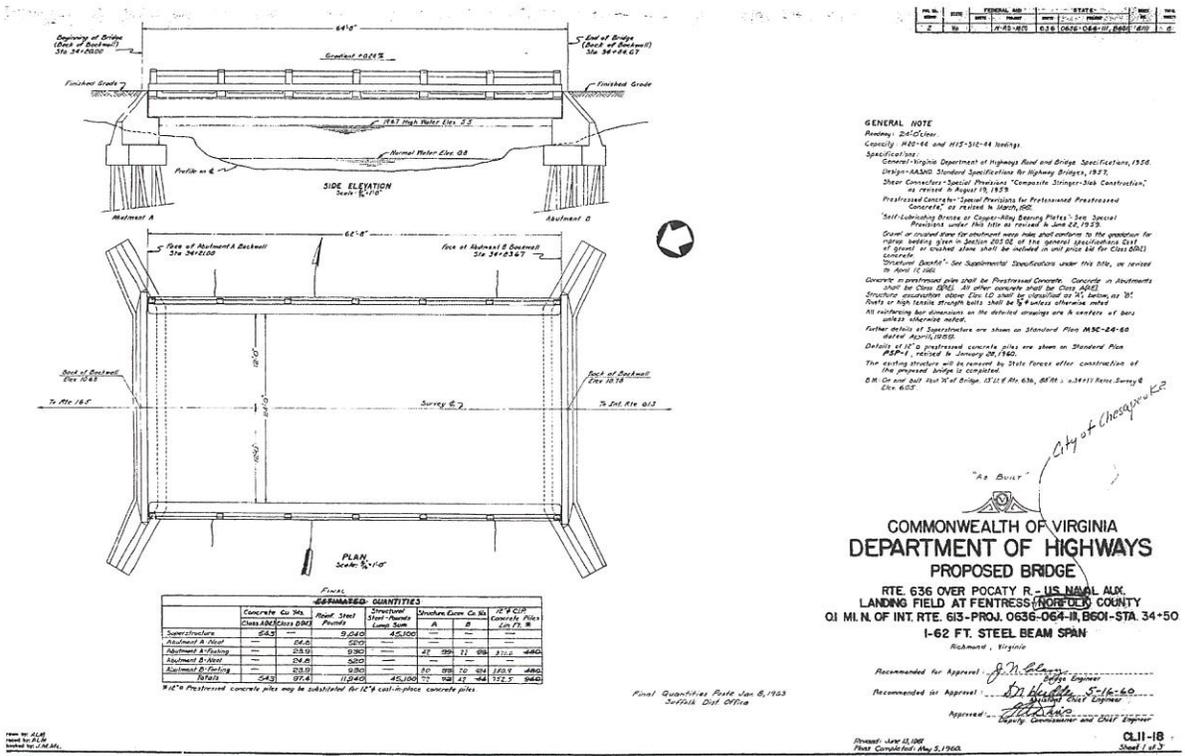
Bridge description:

Two Lane, single steel multi-beam span

Dimensions – Total length 65 ft., Deck width 29 ft.

Historical data:

Constructed by Commonwealth of Virginia Department of Highways (State Project # 0656-064-111, G601). Owned and maintained by City of Chesapeake.



Working Drawings—plan and sections (1962)

Photos:



City of Chesapeake Bridges

Historically significant bridges that have been replaced

Great Bridge Bridge

Gilmerton Bridge

Great Bridge Bridge (City of Chesapeake Structure # 1845)

Location: Battlefield Boulevard (Rt.168) crosses over Albemarle & Chesapeake Canal
(36° 43' 14" N, 76° 11' 23" W)

Year opened:

Current Bridge opened in 2004. There have been several bridges both fixed and drawbridges that have been built in this location since 1770, See Historical data below

Bridge description:

Current bridge: 5 lanes, 2 reinforced concrete slab bascule spans and two steel, half through-truss spans, Total length 253 feet, 70 feet wide

Historical data:

The original bridge can be traced to maps and records dating back to 1770. At that time the bridge was 40 yards long and crossed a creek from the Southern Branch of the Elizabeth River. Five years later, on Dec. 9, this Bridge was the scene of an early battle of the Revolutionary War.



Early Great Bridge

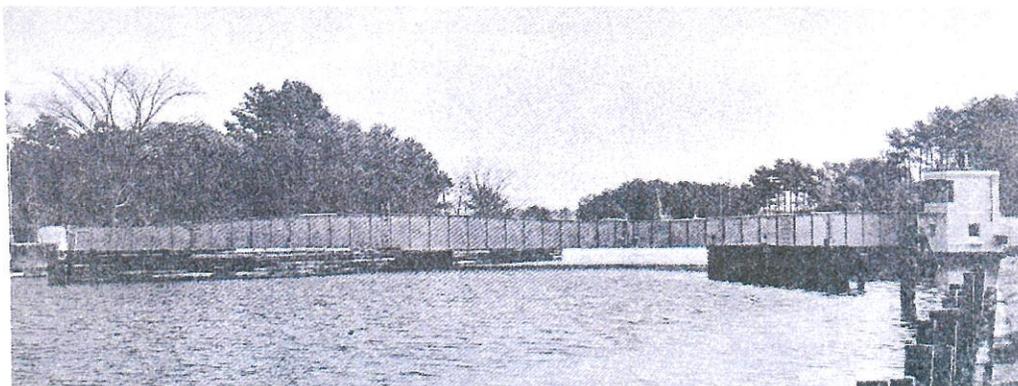
On June 21, 1787, John Portlock and John Nash received orders from the Norfolk County Court to inspect the causeway adjoining the bridge, and upon completion of their inspection, report their findings and recommendations for any needed repairs. On July 18, 1787, they reported repairs that were absolutely necessary along with a sketch that further explained what was needed. They figured the repairs would cost less than 80 pounds.

Throughout the years, new bridges were built and locations changed slightly. When the Albemarle and Chesapeake canal was built in 1850 by the Albemarle and Chesapeake Canal company, the bridge was converted from narrow low level fixed bridge to a drawbridge which would allow masted vessels to pass through. The canal and bridges were opened in 1859 for passage of ships from the Albemarle Sound North Carolina to Elizabeth River in Norfolk County Virginia. This waterway became part of the Atlantic Intracoastal Waterway which allows inside passage of ships from Florida to New England. The bridge was completely destroyed in the Civil war but rebuilt immediately after the war. Other repairs and changes took place in 1913, 1916 (new bridge), 1923, 1932 and 1943 (new bridge). In 1912, The US Army Corp of Engineers acquired all assets of the Albemarle and Chesapeake Canal Company and in 1916 replaced the older bridge with a new single steel through truss single bascule bridge. This bridge was built by the Penn Bridge Co.



1916 bridge

In 1941, work was begun on the construction of a new bridge, but due to wartime shortages, it was not completed until Aug. 15, 1943. This double-swing, two-lane bridge which carried Virginia Route 168 traffic over the Albemarle and Chesapeake Canal, was adequate at the time.



1943 bridge

In 1987, the Army Corps of Engineers initiated a feasibility study for a replacement bridge. A report on the replacement of the bridge was completed in 1994. The following year, U.S. Rep. Norman Sisisky recommended the existing two-lane swing bridge be replaced with a five-lane, two-leaf bascule bridge. In 1995, Congress authorized the project. The project designer was URS Group Inc. of Virginia Beach. Construction of the new bridge began on Nov. 26, 2001. Tidewater Skanska Construction Corporation, of Virginia Beach was the contractor. When open, each leaf of the new bridge extends vertically about 140 feet. It has wide pedestrian walkways and bicycle paths, cantilevered on each side of the bridge to protect pedestrians from the thousands of vehicles that cross each day. The bridge is hydraulically operated and, in case of power outage, is equipped with backup generators. The project cost, which included construction costs, real estate purchases and project development costs, was approximately \$46 million.

Photos:



Current bridge

Gilmerton Bridge (City of Chesapeake Structure # 1809)

Location: US 13 / US 460 (Military Highway) crosses South Branch Elizabeth River
(36° 46' 29"N., 76° 17' 43" W)

Year opened:

Original Bridge – 1938

Current bridge – 2015

Bridge description:

Original Bridge – Four lanes, Steel - double bacule span and 13 steel multibeam approach spans., 882 length,

New bridge – Six lanes, One steel truss lift span (250 feet span) , 18 prestressed concrete multi-beam approach spans, length 1908 feet, 85 feet wide

Historic data:

The original Gilmerton bridge was part of a state effort to provide toll free access into and out of Norfolk. Route went along Route 13 (Military Highway) and Routes 460 / 166 (Bainbridge Blvd). Route 13 was originally designated as Route 299. The work included building five overpasses and two bridges over branches of the Elizabeth River (Gilmerton & Campostella). According to a 1937 *Virginian Pilot* article, this work would allow for a toll free road from sea to mountains for the first time in Virginia history. The name of the bridge was taken from the name of the adjacent village Gilmerton in Norfolk County.

By the end of the twentieth century the bridge had over a million traffic count monthly and had been rehabilitated in 1958. Both a weight limit and reduction in lanes were needed because of bridge deterioration. The Virginia Department of Transportation (VDOT) recognized the need to replace the aging original bridge to accommodate future growth in an area becoming increasingly congested, and to facilitate better flow of marine traffic, VDOT embarked on a \$134 million replacement project requiring the new bridge to be built on the exact same alignment. Modjeski and Masters (bridge engineering firm started in 1893 Pennsylvania) designed the new 250-ft long and 89-ft wide lift span – one of the widest lift spans ever. The designers examined several placement alternatives, including moving the bridge north or south, but the Coast Guard required the new bridge to be on the same alignment as the original structure. Added to this criteria, a 100-year-old railroad bridge owned by Norfolk Southern was just 25 ft to the south of the Gilmerton Bridge. It was paramount that construction of the new bridge would not interfere with the operation of the Norfolk Southern rail line and bridge structure. Staged construction was utilized to eliminate interference with the railroad. To fit the site constraints, the fixed approach spans were constructed using precast and prestressed concrete beams. Drilled shaft foundations were selected as the most feasible, primarily because of the proximity of the existing railroad bridge.

Added to this project complexity, the existing high traffic volumes required the development of an extensive transportation management plan to keep the existing bridge open to traffic during construction. This plan featured designing an alignment and approach structures that could be built without closing the bridge to traffic.

All of these these constraints led to one conclusion on placement—build a vertical lift bridge directly on top of the old span. Norfolk Southern allowed VDOT to use some of its right-of-way for the railroad bridge to expand the Gilmerton Bridge from four lanes to six. The new main spans were 207 ft tall which was needed to obtain the 135 ft of vertical clearance. Once the new span was complete, the project team did a “float-in, float-out,” putting the old bridge on temporary supports while cutting it free and floating it out. At that point, the new bridge was floated in on barges and settled onto its supports.



Float-in of new lift span

25 JUL 1937

Work Pushed On New Route Into Norfolk

Projects Involved in Toll
Free Highway Cost
\$1,376,400

Four Overpasses

Officials Hope Road Will
Be Open to Traffic
Late This Fall

Work on the various projects which will go to make for Norfolk her first toll-free route to and from the rest of the State and that work, to be enlarged later, will cost \$1,376,400, is progressing at a fast clip.

The biggest item in all the projects, of course, is the bridge being constructed over the southern branch of the Elizabeth River near Gilmerton. It is to cost \$470,000 and construction is being pushed.

But four overpasses, one of them over two railroads, will cost an estimated \$535,000. The locations of these overpasses are shown in the accompanying drawing. One will be over the Seaboard Air Line tracks near Bowers Hill, another will be over the Virginian tracks near the same place, the third will be over the Virginian tracks on Route 27 and the other, and largest one, will be over both the Norfolk & Western and Norfolk Southern tracks in South Norfolk.

Estimated Costs

It is estimated that the first two of these will cost about \$50,000 each. Contracts for the overpass over the Virginian on Route 27 and the one over the Norfolk Southern and the Norfolk & Western have been let and work started. The former will cost about \$90,000 and the latter will cost \$285,000.

Grading and paving of the new roadway and improvements to some old roadway between Routes 27 and 58, which the new highway will connect for the toll-free entrance, will cost about \$221,000. Much of the grading work has been completed.

Other projects in the toll-free route and their approximate costs include:

Widening of Route No. 27, near Portlock, \$40,000; widening the same route in South Norfolk, \$25,000; extending Route No. 27 to Main and Liberty streets, Berkley, \$43,000; and widening and repairing Wilson road, \$42,000. Some of this work already has been completed and the other soon will be finished.

One of the most important parts of the whole project, for the future of the city, was the extension of Route 27 to Main and Liberty streets, which gives a more direct route into the city over the Berkley Bridge, a privately-owned toll-bridge. This work was done with the idea of diverting more and more traffic over this bridge, for the city has a contract with the owners by which it is hoped the bridge will be made toll-free within a few more years. The more traffic that flows over the bridge, the sooner will it be made toll-free.

The map shows how much more direct is the route to the business district by this bridge than over the toll-free Campostella Bridge.

Driving Time Less

Although in mileage, the toll-free highway will be longer than two other alternative routes to and from the city, it is estimated that the driving time will be considerably less. It is nine miles from the city line to Bowers Hill, where the new road will leave Route No. 58, by way of the Norfolk and Portsmouth ferries. It is 10 and three-fourths miles from the city line to Bowers Hill over the Norfolk-Portsmouth Bridge route and it will be 11 and a half miles.

Director of Public Works W. E. Taylor, 33, last week made a test of the driving time between the city line and Bowers Hill. It took him 27 minutes to drive over the ferry route, including the time he was on the ferry. It required 18 and a half minutes over the Norfolk-Portsmouth Bridge route. He estimates, with no grade crossings when the free route is completed, it will require only 15 minutes drive over this route to the city line from Bowers Hill.

It was Mr. Taylor who thought of and planned the toll-free entrance by the city. He thought possible of attaching the State Highway Commission

Work Pushed On New Route Into Norfolk

(Continued from Page 1)

planned it and he and City Manager Thomas P. Thompson had to conduct a long hard fight to be approved by the State Highway Commission.

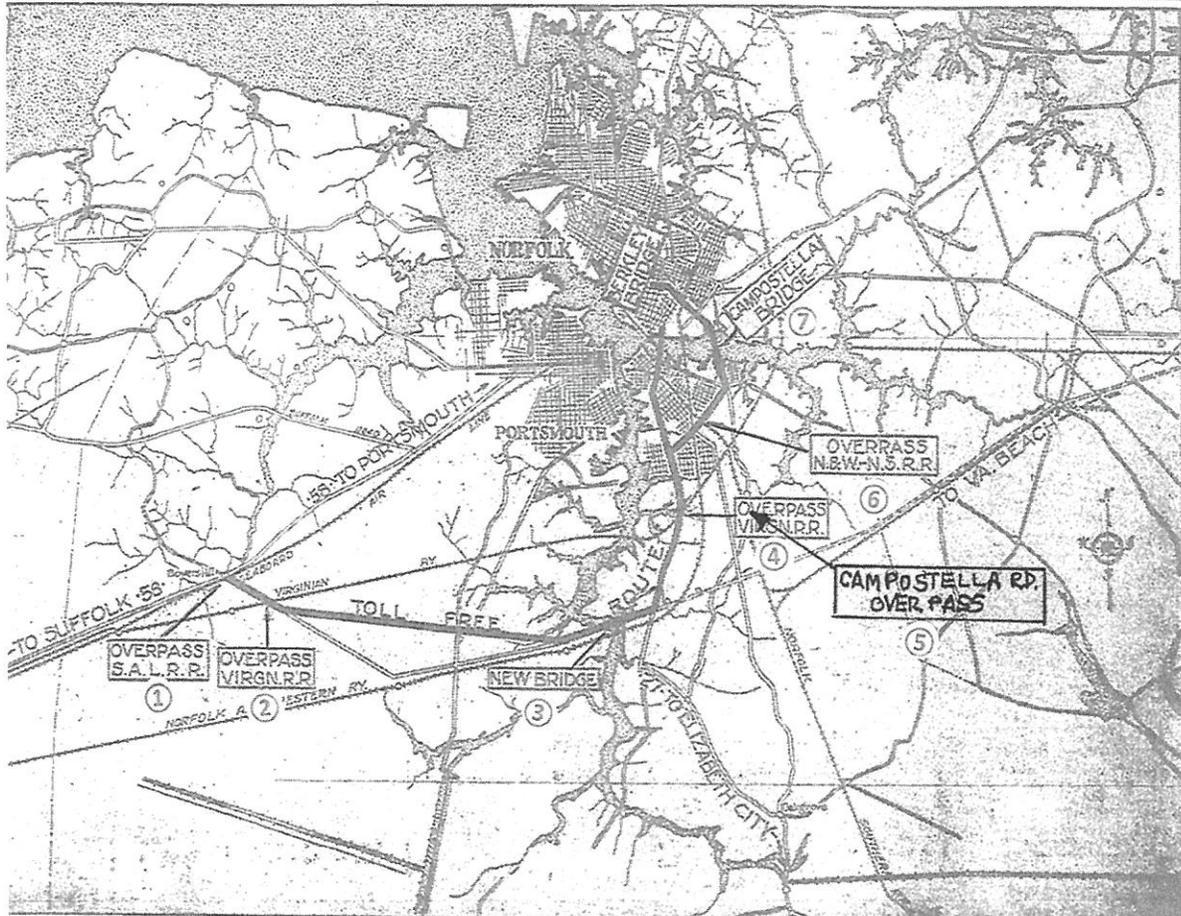
Mr. Thompson took the lead in this fight, which required many trips to Richmond, public hearings and other troubles. The highway department finally agreed to build the road and allocated some funds for it, including some Federal funds. Owners of the Norfolk-Portsmouth Bridge protested in Washington and the proposal hit a snag in the Federal Bureau of Roads.

Another fight followed, finally won by the city. There was new trouble about obtaining a permit from the War Department for the toll-free bridge, which is being rushed, just north of the Norfolk & Western Railway Bridge. This trouble also finally was overcome.

Now, for the first time in history, Norfolk and the State of Virginia at a whole are assured of a toll-free highway from the mountains to the sea. Officials hope to see the route in use by late fall, although all the overpass work is not expected to be completed by that time.

It is the plan of the State Highway Commission for the present to construct only a single roadway between Routes 27 and 58, but ultimately to have a double roadway, with a parkway in the center, and one-way traffic for each. The bridge and overpasses are being constructed to take care of four lanes of traffic, building for the future.

Where More Than \$1,375,000 is Going to Eliminate Grade Crossings, Tolls



This map shows how motorists can get into and out of Norfolk when the toll-free entrance route has been completed, along with the locations of four overpasses which will eliminate five grade crossings at the route. Work is progressing on the bridge, the grading of the roadway and some of the overpasses. The projects in this undertaking, completed and planned for completion, will cost a total of \$1,375,000 and for the first time in history Virginia will have a toll-free highway from the mountains to the sea.

- ① OVERPASS S.A.L.R.R. – Removed about 1968. Was located roughly where S. Military Hwy & W. Military Hwy intersect. In the articles it is referred to as the overpass over the Seaboard Air Line R.R.
- ② OVERPASS VIRGN R.R. – Sunray Overpass. Still there.
- ③ NEW BRIDGE – Original Gilmeron Bridge. Replaced 2013 at the same location.
- ④ OVERPASS VIRGN R.R. – Southgate Overpass. Still there.
- ⑤ CAMPOSTELLA RD. OVERPASS – This overpass wasn't labeled on the original map, but is located under the label for bridge ④. Still there.
- ⑥ OVERPASS N&W-N.S.R.R. - Located at the north end of Atlantic Ave. (Crosses over Liberty Ave & RR tracks. Replaced about 1998.
- ⑦ CAMPOSTELLA BRIDGE – Was a draw bridge at the time, very similar in design to the original Gilmeron Bridge. Replaced at roughly the same location with a 65' highrise fixed bridge which currently crosses the Eastern Branch of the Elizabeth River.

Photos:



Original bridge



Current bridge

Historically significant bridges that are owned by other entities

Deep Creek Bridge

North Landing Bridge

South Norfolk Jordan Bridge

Elizabeth River Lift Bridge

Deep Creek Bridge (Currently owned, maintained and operated by USACE)

Location:

Route 17 crosses Dismal Swamp Canal in Deep Creek, Chesapeake
(36° 44' 28" N, 76° 20' 42" W)

Year opened:

Current Bridge opened in 1934.

Proposed new replacement bridge currently estimated to open in 2023

Bridge description:

Current bridge: 2 lane, steel plate through girder, single leaf bascule. Total length 129.9 feet, Deck width 20 feet.

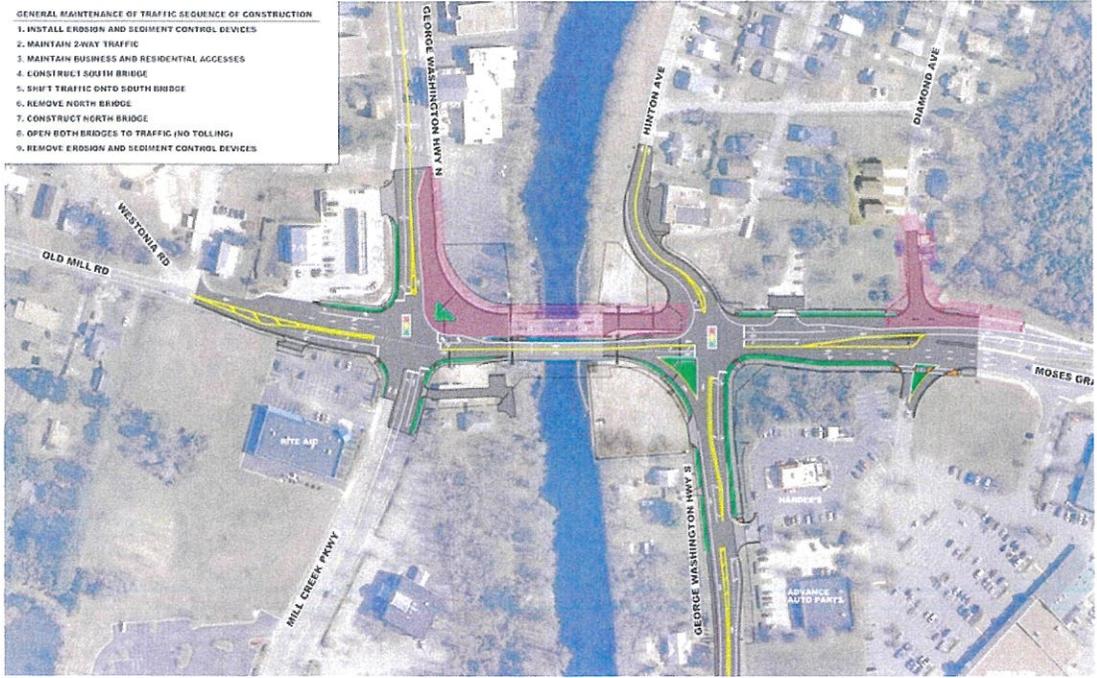
Proposed new bridge; 5 lanes with pedestrian walkway, steel, dual-leaf bascule bridge, 144 feet length, 60 wide

Historical data:

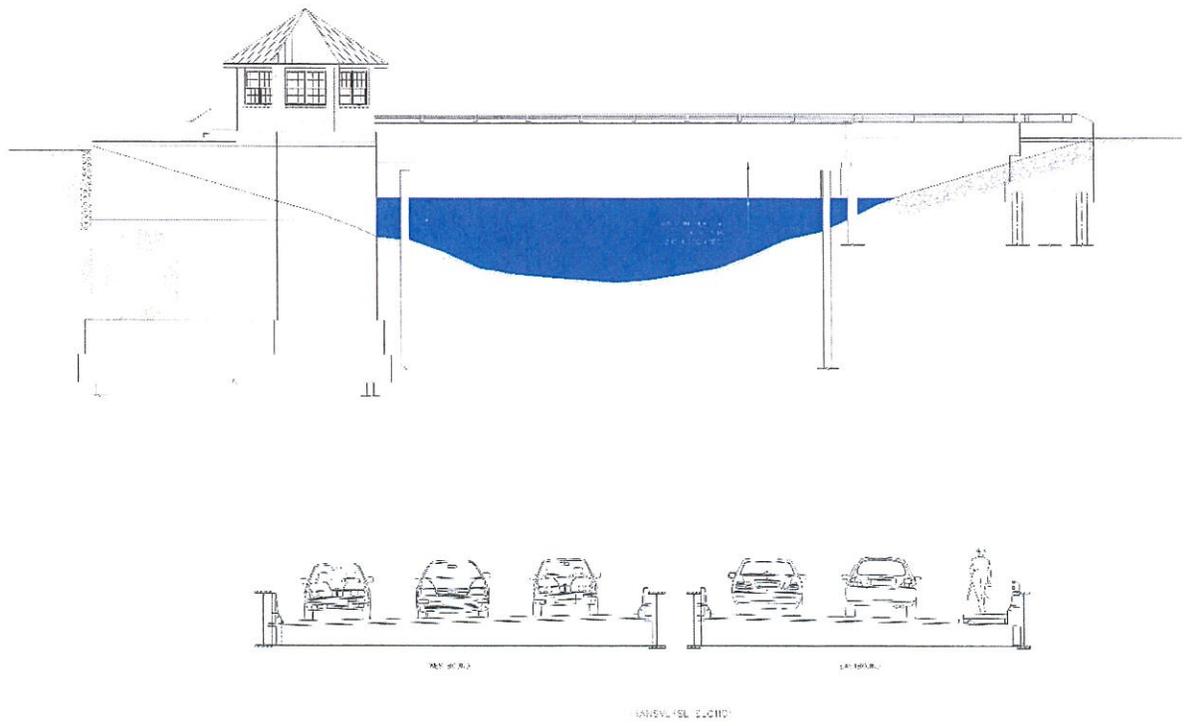
The history of the Deep Creek Bridge is closely linked to the construction of the Dismal Swamp Canal. In 1787, the Virginia General Assembly and Governor authorized the Dismal Swamp Canal Company to build a north / south canal through the Dismal Swamp. This was endorsed by the North Carolina General Assembly in 1790 with work starting in 1793. The canal opened for limited navigation in 1805 and then was enlarged in 1820. It was a 22 mile tolled, elevated canal with several locks that ran along Deep Creek tributary, with Deep Creek village being the northern terminus and South Mills, N.C. being the southern. The canal was and still is part of the Atlantic Intracoastal Waterway which runs from Boston to Florida which allows for protected inside passage of ships for the entire length of the East coast. In 1812, a side canal was constructed to the middle of the Dismal Swamp at Lake Drummond to supply water to the canal. In 1840, the canal was extended from Deep Creek to Gilmerton, opening it up to Elizabeth River. In the late 1800's, the canal was acquired by a new owner, Lake Drummond Canal and Water Co., who vastly improved the canal, increasing the size and reducing the number of locks to two. . Both companies built wooden drawbridges at Deep Creek to allow crossing of a major road (currently Route 17). The canal was acquired by the government in 1929 and a new bridge at Deep Creek was built and opened in 1934 and is still in use today. The entire canal was made toll free with Government acquisition. Plans are currently being developed to replace the bridge which is expected to be opened by 2023. The new bridge is a federal and state funded project estimated at 50 million dollars. Work will include new approach roadways and reworking the Route 17 / 165 intersection. The City of Chesapeake will own, operate and maintain the new bridge when complete.

Photos Current bridge





Proposed site layout - new bridge and approach roadways



Proposed new bridge - sections

North Landing Bridge (Owned and operated by USACE)

Location:

North Landing Road – Mt Pleasant (Rt. 165) cross Albemarle and Chesapeake Canal
(36° 43' 04"N, 76° 06' 01"W)

Year opened:

Current Bridge opened in 1955. There have been several bridges both fixed and drawbridges at this location. See Historical data below

Bridge description:

Current bridge: 2 lane, steel plate through girder, double swing bridge. Total length 237.9 feet, Deck width 24 feet

Historical data:

Original bridges over North Landing River along this important roadway between Chesapeake and Virginia Beach were fixed wooden bridges. Drawbridges were introduced when the Albemarle and Chesapeake canal was built.

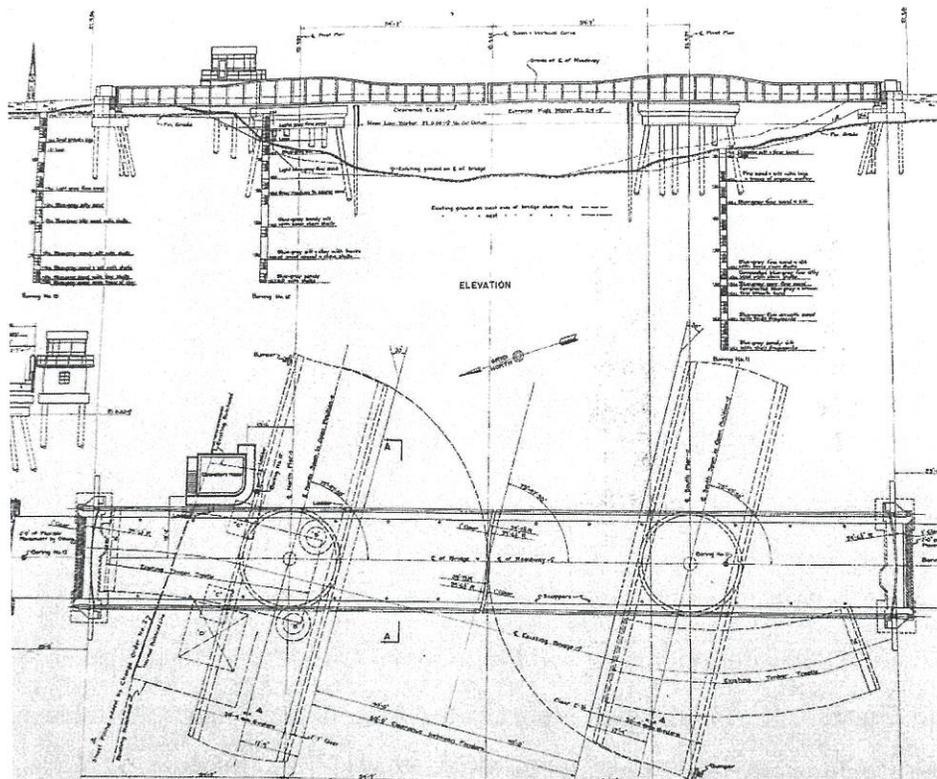


North Landing Bridge (circa mid 1800's)

Between 1856 and 1860, the Albemarle and Chesapeake Canal Company constructed the Albemarle and Chesapeake Canal which is part of the Atlantic Intracoastal Waterway (inland waterway that provides protected passage for ships from Florida to New England).

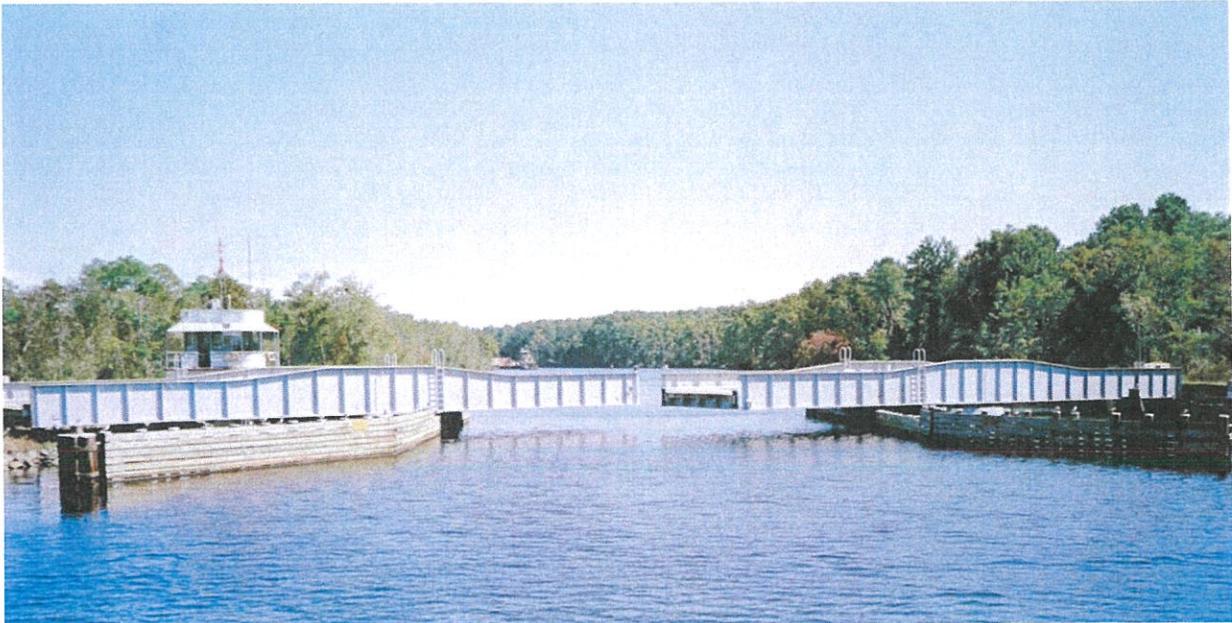
The canal is approximately 73 miles in length and includes the nine mile “Virginia cut” which runs along the eastern edge of the Dismal Swamp from Great Bridge to North Landing River. The waterway then follows the meandering North Landing River which empties into a dredged channel through the Currituck Sound in North Carolina. After the sound, the waterway enters the five and half mile “North Carolina cut” which starts in Coinjock and ends at the North River, finally emptying into the Albemarle Sound. Along this canal, the company built three wooden drawbridges at the intersection of main roads which are located at Great Bridge, North Landing and Coinjock. Construction of all these elements were complete and opened for traffic in 1859. The new bridges allowed masted ships to use the canal throughout the entire length.

USACE acquired the Albemarle and Chesapeake Canal Co and all its assets in 1912. They had Penn Bridge Company from Pennsylvania build new steel single span bascule bridges in 1916 at North Landing, Great Bridge and Coinjock locations. The North Landing 1916 bridge was replaced in 1951 with the current bridge, a steel plate girder double swing span bridge.



Current bridge - Original Working drawings – plans and elevation (1951)

Photos:



Current North Landing Bridge

South Norfolk Jordan Bridge (Currently owned and operated by United Bridge Partners)

Location: Located where Va. Rt. 337 crosses the South Branch of the Elizabeth River between the cities of Chesapeake and Portsmouth (36 ° 48' 31" N, 76 ° 17' 28" W)

Year opened: Original Bridge – 1928, Current Bridge - 2012

Bridge description:

Original Bridge – Steel Warren through truss approach spans with Steel vertical lift main span. Total length 2,050 feet. Deck width – 20 feet.

Current Bridge – Precast segmental bridge, Total length 5, 375 feet

Historical data:

Original Bridge

The original bridge was first known as the Norfolk-Portsmouth Bridge. The bridge was planned and financed by South Norfolk businessman Carl M. Jordan, who operated Jordan Brothers Lumber Co. along with his brother Wallace. The Jordan Brothers company brought lumber from the Great Dismal Swamp to their lumber mill in South Norfolk, and believed that the existing Norfolk County Ferry Service was not dependable enough for the needs of their business, or others in the community.

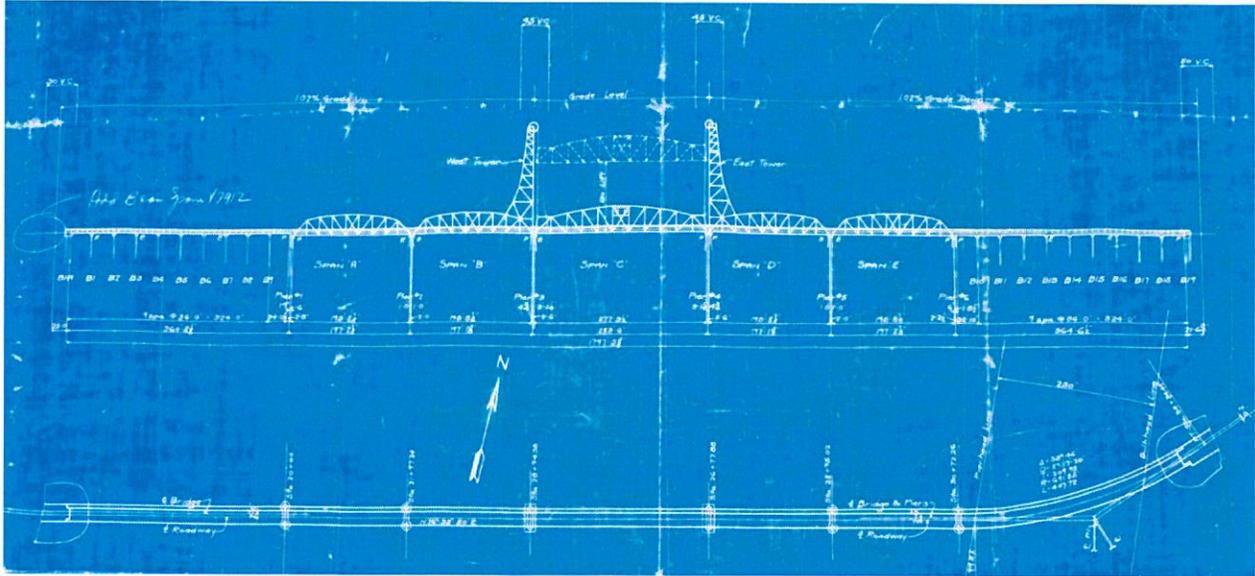
The bridge was a Waddell & Harrington-type vertical-lift drawbridge and was designed by Harrington, Howard, & Ash (engineers) of Kansas City, Missouri. It was completed at a cost of \$1.25 million, and opened on August 24, 1928, as a toll bridge.

Many years later, the bridge was renamed for Carl Jordan, who also had served as general manager and executive vice president of the South Norfolk Bridge Commission, Inc., a non-profit corporation organized in 1944 to manage the bridge. In 1977, after the Bridge Commission's indebtedness was satisfied, ownership of the bridge was transferred to the City of Chesapeake.

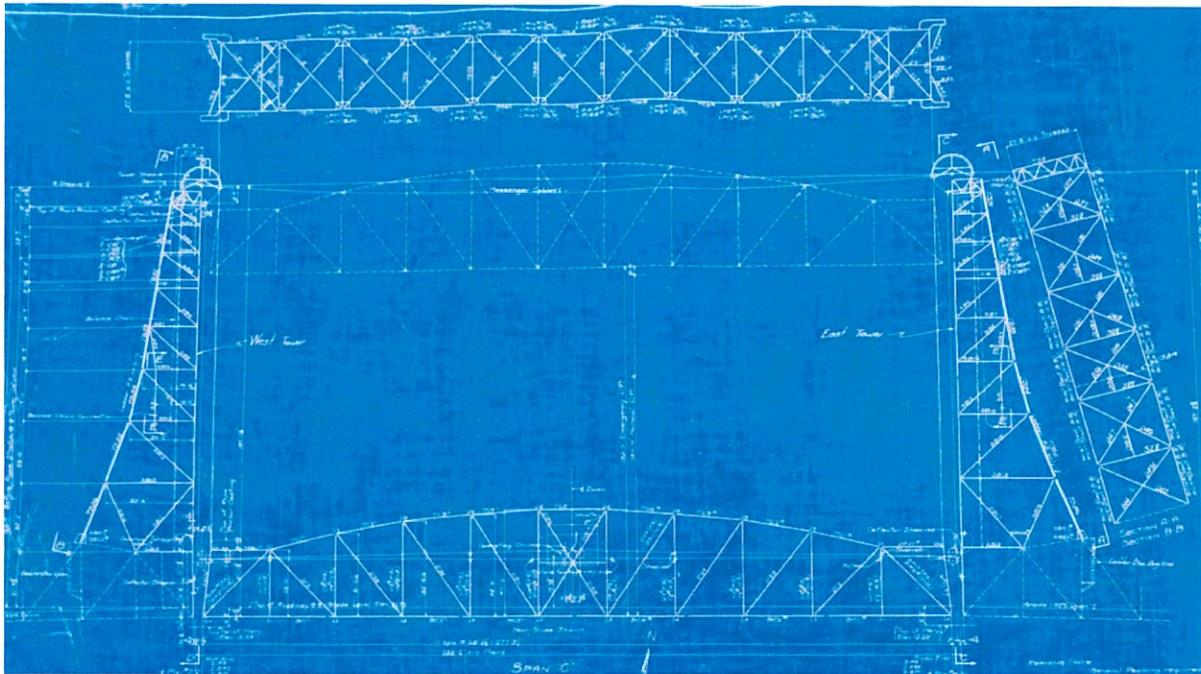
The Jordan Bridge was struck by ships several times. On June 2, 1939, an oil tanker struck it, and the east tower and lift span collapsed into the river, injuring two bridge employees, and closing it for more than 6 months. Another major collision of a ship occurred on June 13, 1943. The most recent collision with a ship was in January, 2004.

By the 21st century, the lift mechanism equipment was mechanically obsolete and repair parts were often unavailable which resulted in the bridge being stuck in the “down’ position, severely inhibiting navigation for ocean- going vessels for shipping companies and the U. S. Navy. Finally, in October 2008, the bridge required too much expenditure for needed repairs, causing Chesapeake City Council to vote to shut it down.

Original steel shop drawings (circa 1928)

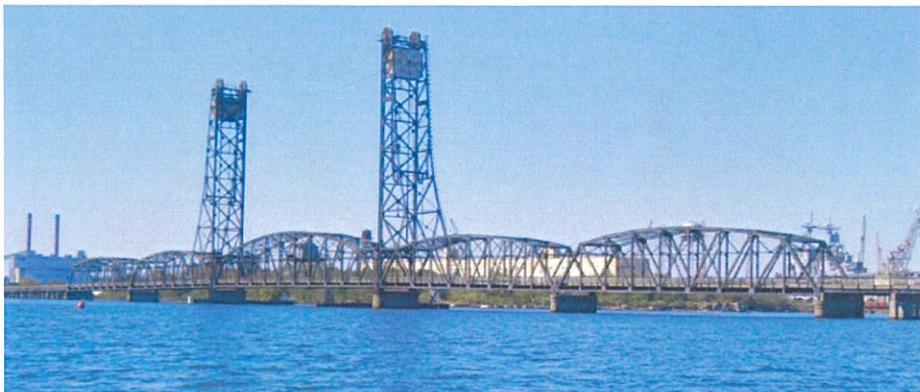


Elevation and site plan



Section at Vertical lift main span

Photos Original bridge:



Current Bridge

The current bridge is a precast segmental bridge 5,375' long with 150' typical spans and a 385' main span that is located 145' vertical clearance over the navigational channel. The 150' typical spans were constructed using span by span segmental construction techniques with an underslung erection truss while the 385' main span and each of the adjacent 190' back spans were constructed by the balanced cantilever segmental construction technique utilizing a floating crane for segment erection. The land foundations consists of 24" pre-stressed concrete piles and the water foundations consists of 54" pre-stressed concrete cylinder piles. This project also included a pair of mass concrete fender rings supported on 66" pre-stressed concrete cylinder piles.

The design and funding for the project was provided by a private entity, South Norfolk Jordan Bridge, LLC, led by Figg Bridge Builders. Figg Bridge Builders acting as the managing partner for South Norfolk Jordan Bridge, LLC reached an agreement with the City to take over ownership of the bridge with the agreement to demolish the existing bridge and provide them with a new bridge in its place, with investment of the project tied to future toll revenues.

As managing partner, Figg Bridge Builders acted as the lead construction managers and Figg Bridge Engineers were the lead designer for this project. McLean Contracting Company worked as the major subcontractor on this project. McLean was responsible for all the pile driving and foundation work on both the land and water, segmental column erection on both the land and water, balanced cantilever superstructure erection over the water and the construction of the mass concrete fender ring systems protecting the navigational zone. The superstructure and column segments were supplied by others and erected by McLean. The bridge is currently owned and operated by United Bridge Partners, consisting of Figg Bridge Builders and a private infrastructure investment firm.

Photos current bridge:



Current bridge under construction (Segmented precast sections)



Current Bridge completed

Elizabeth River Lift Bridge (Owned and maintained by Norfolk & Portsmouth Belt line Railroad Company)

Location:

Railroad Bridge over South branch Elizabeth River (Near Jordan River Bridge)

(36° 47' 50" N, 76° 17' 35" W)

Year opened: Current Bridge - 1959. Original Bridge - 1898

Bridge description:

Current Bridge – Steel thru truss design - three spans, Steel thru truss lift design one span, Single track 22 wide and 1278 length

Original Bridge – Steel thru truss design with swing bridge center section, first western side span is wood trestle, Single track, Steel trusses 780 feet length, Wood trestle 296 feet length.

Current bridge was constructed adjacent to the original bridge. After construction complete, the original bridge was removed.

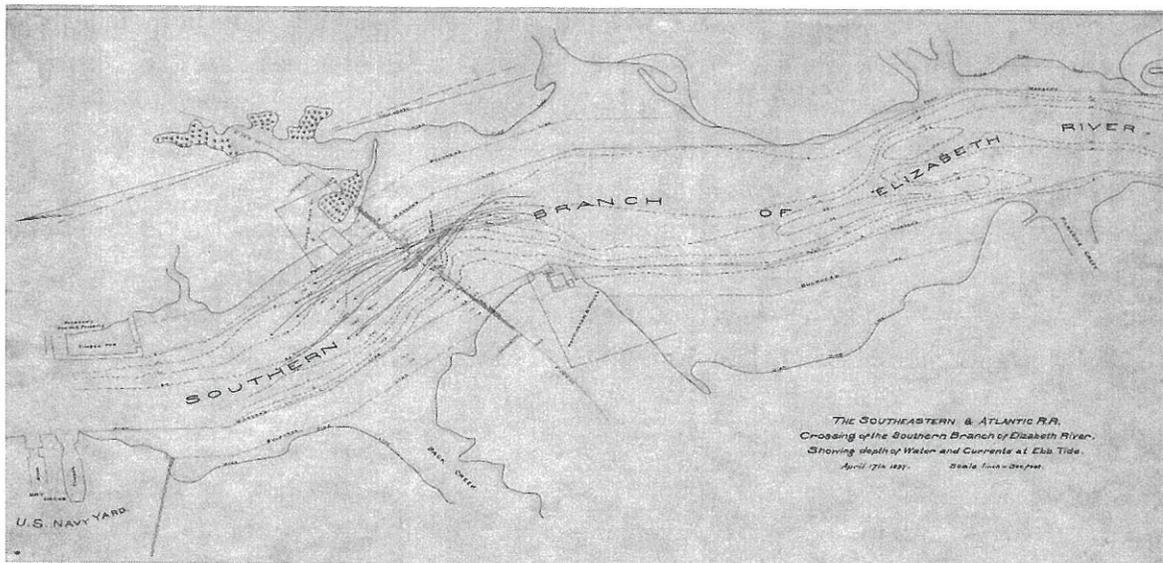
Historical data:

The original Elizabeth River swing bridge and the current Elizabeth River lift bridge were built, owned and maintained by the Norfolk & Portsmouth Belt Line Railroad Company (NPBL, reporting mark). This company is a class III terminal switching railroad which was incorporated in 1896 as the Southeastern and Atlantic Railroad Company. By incorporating under this name, NPBL obtained already approved river crossing rights, allowing for a much faster start for bridge and rail line construction into Norfolk. NPBL adopted its current corporate name on January 1898 and then acquired the Elizabeth River Railroad in 1910. Originally, the Belt Line was formed by eight railroads (Norfolk & western RR, Chesapeake & Ohio RR, Southern Railway Co., New York, Philadelphia & Norfolk RR, The Atlantic & Danville RR, Atlantic Coast line, Norfolk & Southern RR, Seaboard Air Line RR.). NPBL is currently owned by Norfolk Southern and CSXT corporations. NPBL's principal business is interchanging rail cars between connecting lines, haul carriers and various marine terminals and industries adjacent to its tracks. Currently it owns 36 miles of track and has track rights for an additional 27 miles. The original bridge was built under a contract between A & P Roberts and Southeastern and Atlantic Railroad Company, dated January 24, 1898. Pencoyd Iron Works provided the steel for the trusses. The current bridge was built by Lang Construction of Hampton, Virginia

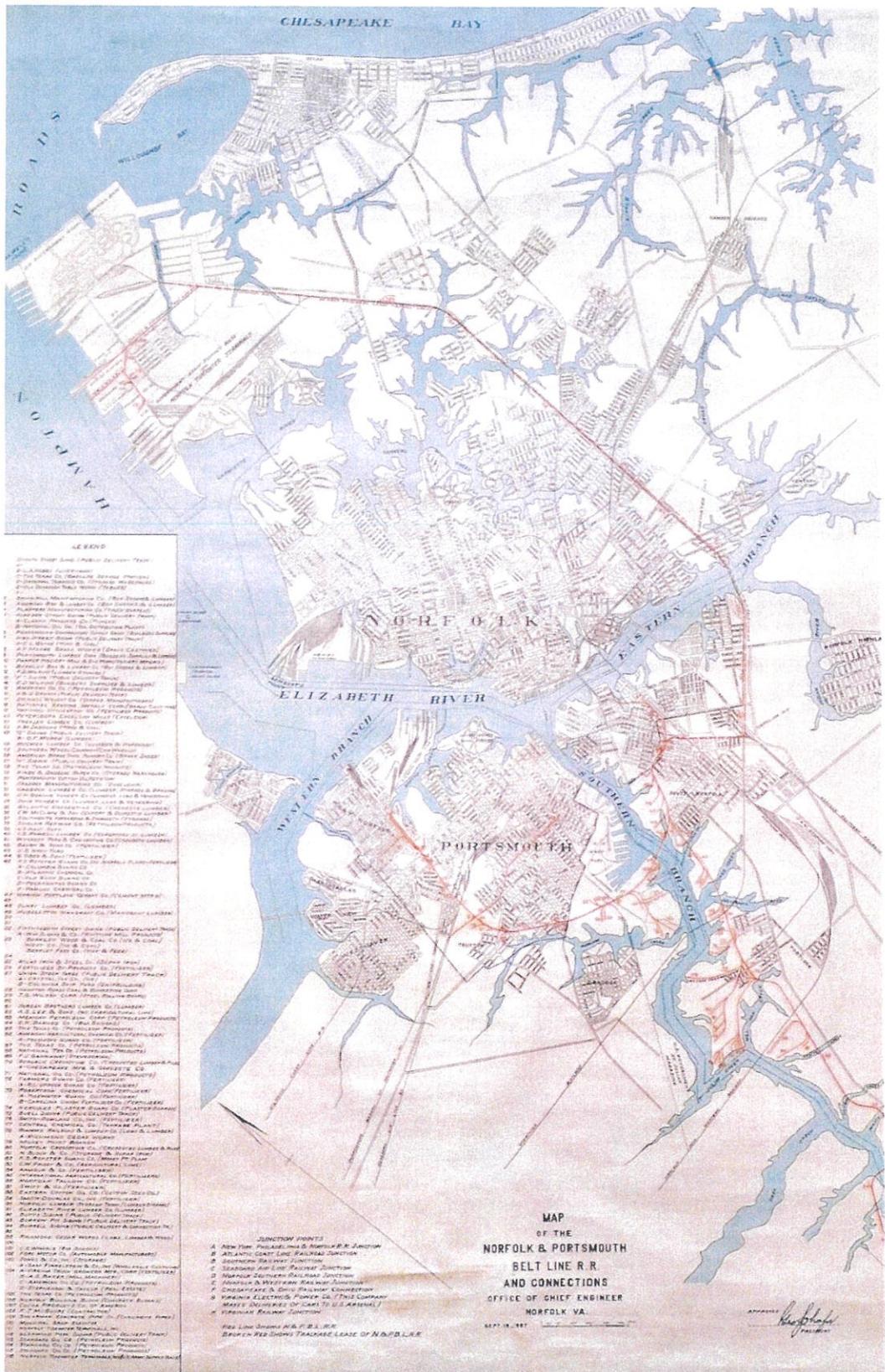




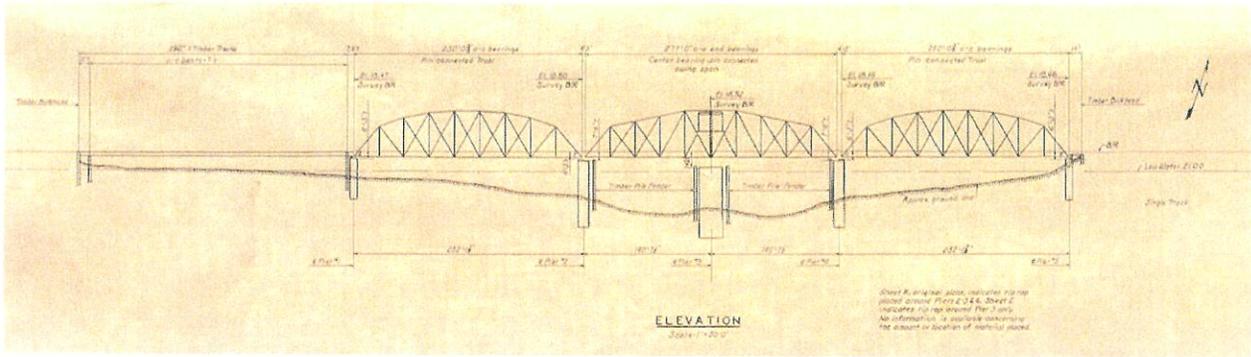
1896 original map of the proposed Belt Line.



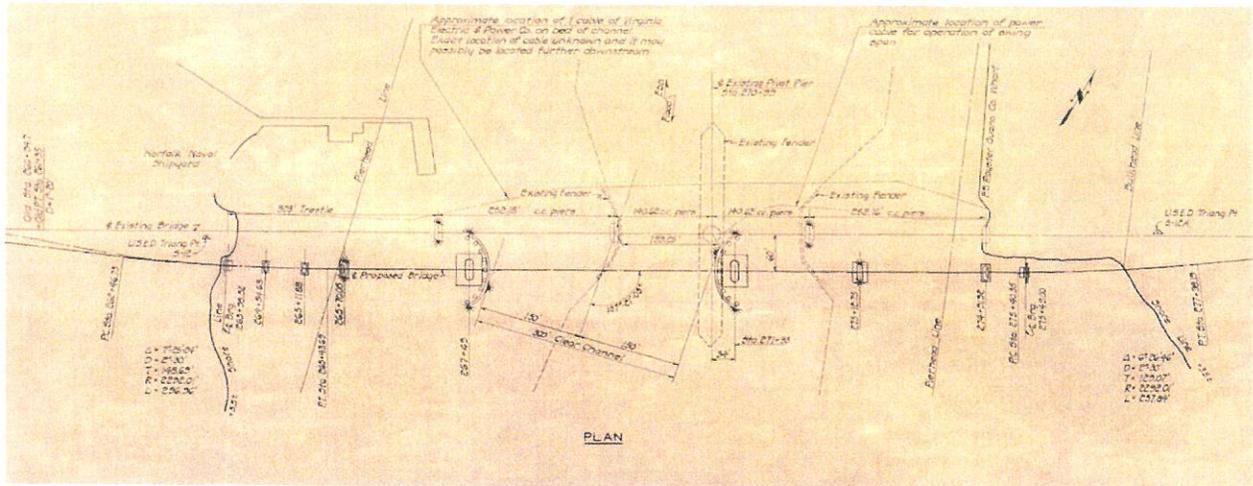
1897 original map showing river conditions at proposed bridge location



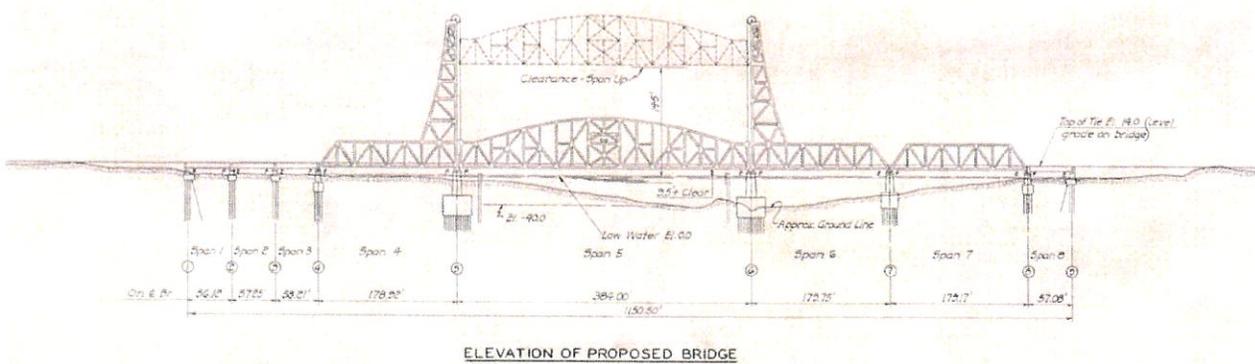
1927 map of the belt line (shown in red)



Original Bridge - working drawings, elevation (1896)



Original Bridge - working drawings, plan (1896)

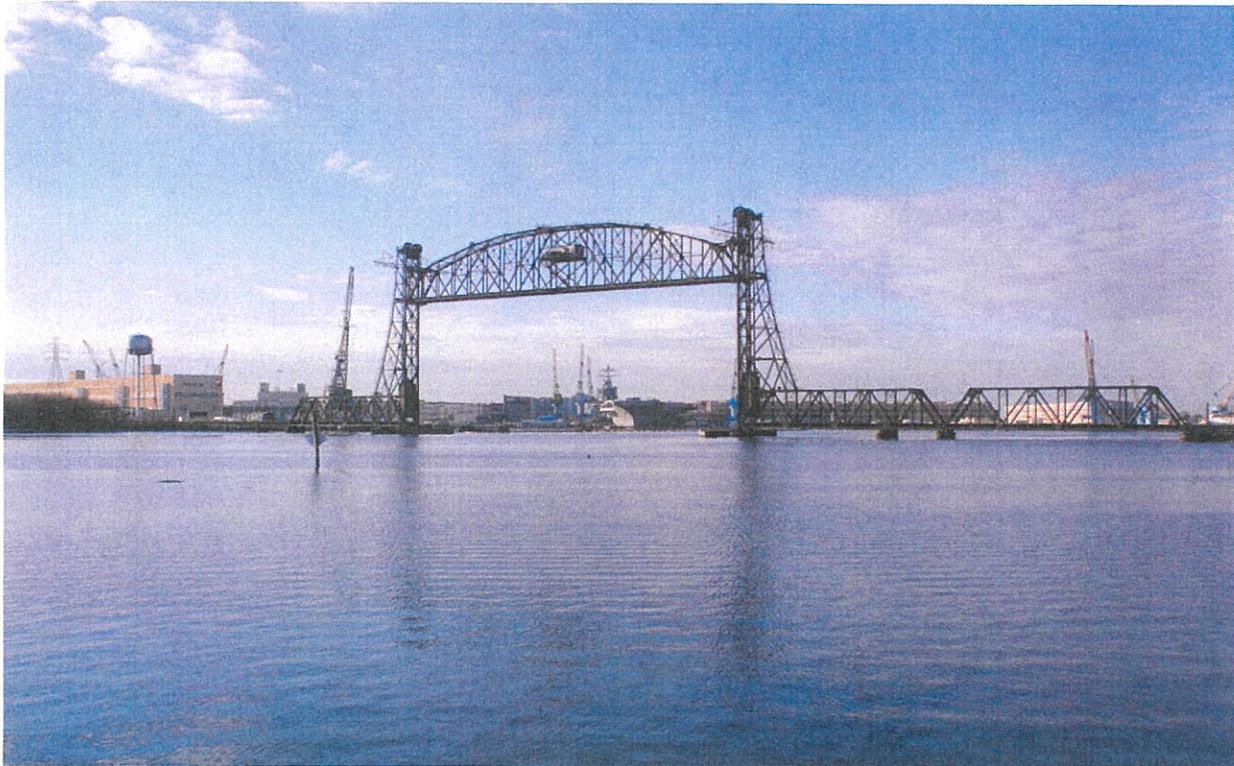


Current Bridge - working drawing section (1948)

Photos:



Current Bridge (Shown with rail cars carrying wind mill blades)



Current Bridge