NPS Form 10-900
(Oct. 1990)

OMB No. 10024-0018

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NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer to complete all items.

1. Name of Property

historic name 69th Street Transfer Bridge

other names/site number

2. Location

street & number On the Hudson River west of the West Side Highway between West 66th & West 70th Streets [ ] not for publication

city or town New York [ ] vicinity

state New York code NY county New York code 061 zip code 10069

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this [X] nomination [ ] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements as set forth in 36 CFR Part 60. In my opinion, the property [X] meets [ ] does not meet the National Register criteria. I recommend that this property be considered significant [ ] nationally [ ] statewide [X] locally. ([ ] see continuation sheet for additional comments.)

Signature of certifying official/Title — Date

New York State Office of Parks, Recreation & Historic Preservation
State or Federal agency and bureau

In my opinion, the property [ ] meets [ ] does not meet the National Register criteria. ([ ] see continuation sheet for additional comments.)

Signature of certifying official/Title — Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

[✓] entered in the National Register
[ ] see continuation sheet
[ ] determined eligible for the National Register
[ ] see continuation sheet
[ ] determined not eligible for the National Register
[ ] removed from the National Register
[ ] other (explain) _____

Signature of the Keeper — date of action 6/26/03

5. Classification

Ownership of Property
(check as many boxes as apply)

[X] private
[ ] public-local
[ ] public-State
[ ] public-Federal

Category of Property
(Check only one box)

[ ] building(s)
[ ] district
[ ] site
[X] structure
[ ] object

Number of Resources within Property
(Do not include previously listed resources in the count)

Contributing	Noncontributing	
		buildings
		sites
1		structures
		objects
1	**0**	**TOTAL**

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

N/A

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(enter categories from instructions)

TRANSPORTATION/rail-related & water-related

Current Functions
(Enter categories from instructions)

TRANSPORTATION/rail-related & water-related

7. Description

Architectural Classification
(Enter categories from instructions)

NO STYLE

Materials
(Enter categories from instructions)

foundation wood
walls
roof
other steel

Narrative Description
(Describe the historic and current condition of the property on one or more continuation sheets)

7. Narrative Description

Summary

An important landmark in New York City's industrial history is the "transfer bridge" (as it is called by engineers) or "float bridge" (as it is called by railroad workers) located on the Hudson River waterfront, west of the elevated West Side Highway, in the former New York Central Railroad 60th Street yard (the waterfront area of which is now Riverside Park South). The purpose of this structure was to transfer railroad cars from barges (known as carfloats) to land, a process once essential to the handling of freight in New York Harbor. The 69th Street Transfer Bridge of the New York Central Railroad was completed in 1911 and remains essentially as built, except for the removal of its rails, and some deterioration and vandalism. It was taken out of service but left intact not long after the 1968 merger of the New York Central and the Pennsylvania Railroads.

The Physical Structure

The heart of the 69th Street Transfer Bridge consists of two side-by-side steel plate girder bridges, each carrying a railroad track. The "transfer bridge" as a whole contains within it two "sub-bridges" suspended independently, even though both are connected to only one carfloat at a time; to distinguish them they are referred to as "girder bridges" in this context. At its land end each girder bridge rests on a pivot, which acts as a kind of hinge. At its seaward end each is suspended from a common overhead structure, shared by both spans. The overhead structure, referred to as a "machinery house" in a contemporary engineering journal, resembles a crosswise plate girder bridge, supported by towers made up of a "box structure" of steel trusses. (This overhead structure sometimes leads observers unfamiliar with railroad infrastructure to mistakenly call the transfer bridge a "gantry" which is actually a type of overhead crane.)

The operating mechanism of the transfer bridge consists of a set of cables that lead up from the outer ends of the girder bridges over sheaves (large pulleys) in the overhead structure to counterweights. The counterweights run up and down in the towers and support 90% of the weight of the outer end of each girder bridge. In addition, there is a pair of steel rods connected through eyebars to the outer ends of the sides of each of the two girder bridges. The upper portion of these rods is threaded like a screw and is acted upon by a large nut supported within the overhead structure. This nut can be rotated within its bearing by a worm drive, which is powered by an electric motor. As the nut turns it draws the threaded rod up or down within it, raising or lowering the girder bridge. The four cylindrical shapes above the roof of the machinery house, which resemble chimneys, are in reality protective caps for the threaded rods when they rise to their maximum heights. A cabin supported about halfway up one of the towers contains the controls for the motors, and gave the operator a good view of the outer ends of the girder bridges.

The outer end of the floor of each of the two girder bridges is actually a separate flexible platform, called an "apron." The two running rails continue over this platform to its end, where they meet the rails of the carfloat when in use. Carfloats are attached to the end of the apron by cables, which are drawn in by

winches on the sides of the transfer bridge. When cars are transferred between the transfer bridge and the carfloat, steel toggle bars mounted on the ends of the apron platforms are levered into corresponding sockets on the carfloat, to lock it into place.

Other elements of the transfer bridge include its foundations, consisting of pilings capped by platforms, on which the steel towers rest. Lines of piling extended out into the water on either side, to provide guidance for the incoming car floats, and to prevent the current in the river from moving the tied-up carfloats sideways. They also protected it from floating ice and other objects.

The Waterfront Setting

Each track on the transfer bridge was served by its own lead track, running into the rail yard behind the bridge. This yard was known as the 60th Street Yard, or sometimes the 72nd Street Yard, and it occupied the land between those two streets along the waterfront. It served as the primary receiving and classification yard for the New York Central's rail line into Manhattan, from the 1880s until the early 1980s. An elevated highway was built over the rail yard in 1932. In addition to the 69th Street Transfer Bridge, there were two additional transfer bridges to the south. These were each built to different, earlier designs; remnants of each remain. Further south on the waterfront were a series of about six covered piers (Piers A through F, starting at the foot of 60th Street) built diagonally 500-700 ft. into the water. Nothing remains of the nearest piers, but the metal skeletons of two of the southernmost piers remain, forming picturesque ruins after fires destroyed their outer walls many years ago. Just north of the Transfer Bridge an open pier reached diagonally into the river; this was known as "Pier I" and was used to load freight onto open barges, and also to tie up car floats waiting their turn at the transfer bridges.

The transfer bridges went out of use not long after the 1968 merger of the New York Central and the Pennsylvania Railroads made them surplus. The rest of the yard was completely out of service by about 1983, although the main line of the railroad through the yard was restored by Amtrak in 1991, and carries the intercity Amtrak trains between New York City and upstate New York. Part of the former rail yard is being made into a southward extension of Riverside Park (National Register listed 9/2/83). The surroundings of the 69th Street Transfer Bridge consist of the new waterfront park in the beneath the massive steel and concrete elevated six-lane highway soaring high above the land, just as the rail yard was shadowed by the same structure for the second half century of its existence.

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

[ ] **A** Property associated with events that have made a significant contribution to the broad patterns of our history.

[ ] **B** Property is associated with the lives of persons significant in our past.

[X] **C** Property embodies the distinctive characteristics of a type, period, or method of construction or that represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.

[ ] **D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all boxes that apply.)

[ ] **A** owned by a religious institution or used for religious purposes.

[ ] **B** removed from its original location

[ ] **C** a birthplace or grave

[ ] **D** a cemetery

[ ] **E** a reconstructed building, object, or structure

[ ] **F** a commemorative property

[ ] **G** less than 50 years of age or achieved significance within the past 50 years

Areas of Significance:
(Enter categories from instructions)

ENGINEERING

Period of Significance:

1911

Significant Dates:

1911

Significant Person:

N/A

Cultural Affiliation:

N/A

Architect/Builder:

French, James B. (engineer)

Narrative Statement of Significance
(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography
(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

[ ] preliminary determination of individual listing (36 CFR 67) has been requested.
[ ] previously listed in the National Register
[ ] previously determined eligible by the National Register
[ ] designated a National Historic Landmark
[ ] recorded by historic American Building Survey
_____
[ ] recorded by Historic American Engineering Record
_____

Primary location of additional data:

[X] State Historic Preservation Office
[ ] Other State agency
[ ] Federal Agency
[ ] Local Government
[ ] University
[ ] Other repository: _____

8. Statement of Significance

Summary

Constructed in 1911 on the Hudson River waterfront in New York City the 69th Street Transfer Bridge meets Criterion C in the area of engineering design. It is significant as the first of its design type: a contained apron bridge. Its ingenious design, by engineer James B. French, represented an advance over previous types of transfer bridges, and was patented. This historic engineering landmark is one of the most significant marine structures remaining in New York City.

The Development of Transfer Bridges

The purpose of the "transfer bridge" (or float bridge, as it is also known) is to transfer railroad cars between tracks on land and tracks on a floating barge or scow called a carfloat (a long flat barge with tracks on it). The car float can be moved around the harbor by a tug to bring the cars to another location. At the Port of New York, many different points on the islands and peninsulas surrounding the harbor waters had transfer bridges. Each railroad could interchange with any other railroad or terminal by this means, avoiding the necessity of building numerous expensive bridges and tunnels, and of laying tracks through densely built-up urban neighborhoods. The transfer bridge system generally offered a high capacity and great flexibility, and it was much more economical than laying tracks through New York real estate.

The railroad "transfer bridge" was developed in the second half of the 19th century. In fact it is one of the most efficient freight handling devices known, allowing the loading or unloading of 800 tons of cargo in about 15 minutes, faster even than modern container cranes operate. It was once common at several ports of the world, but at none was the float bridge so extensively used as at the Port of New York, where 80 or 90 of them were in active use in the 1920s. They made it possible for each railroad reaching the Port to move freight cars over the harbor waters to any point on the waterfront.

Trucks on our highway system now move most of the freight that the railroads previously handled by carfloat. Two transfer bridges remain in use at the Port, but of simpler types than the 69th Street bridge, since present volumes of traffic are much lower.

The simplest type of transfer bridge was the "pontoon" type. The first of these at the Port of New York were constructed around the late 1860s. It is essentially a railroad bridge, about 80 feet long, with one end attached to the shore by a hinge, and the other end supported by a floating pontoon that automatically rises and falls with the tide. One end of a carfloat is connected to the watery end of the bridge, the rails are joined, and freight cars can then be pulled off or onto the carfloat. This type of float bridge is relatively cheap to build but cannot be operated very rapidly as it takes considerable time to connect it to an incoming carfloat. It is also subject to stoppages by ice building up under the pontoon, or silting.

A more advanced type of transfer bridge has no pontoon. Instead its moving end is suspended from an overhead structure containing a system of motors, lifting jacks, cables, and counterweights that can directly adjust the end of the bridge to different carfloat deck heights. It is much faster in operation but also costs more to build, as the mechanical structure must be designed to support heavy changing loads and to allow for strong torsional forces. This type of bridge was introduced about 1888 and during the next 25 years was improved continuously to make it faster and stronger.

At first only the largest railroad companies could use the suspended type of transfer bridge because of its high cost. About 1905 the Long Island RR (LIRR) went in search of a different type of suspended bridge that would be much simpler than that in common use, and therefore cost less to build. A rather primitive type of bridge was built, but unfortunately the engineer who designed it overlooked certain requirements and this bridge collapsed after a few months of service, due to an unforeseen combination of low tides and a heavy carfloat. A different engineer, James B. French, was asked to rebuild the transfer bridge. He salvaged those elements of the new design that made sense, but added some missing elements to solve the original problem.

In the process of rebuilding this bridge, he began working out an ingenious new method of adjusting a float bridge to the twisting forces caused when a carfloat lists to one side due to loading or unloading. For this invention, called by him the "contained apron design," he received patent No. 983617 on Feb. 7, 1911. The first transfer bridge to be built to the new design was the 69th Street Transfer Bridge of the New York Central Railroad located on the Hudson River waterfront of Manhattan, at the foot of West 69th Street. (or what would be the foot, if it were extended to the water). This location was at the north end of the railroad's 60th Street yards, the Central's chief marshaling yard on Manhattan. Compared to earlier suspended-type designs (an example of which lies in ruins south of it) this bridge was faster and easier to operate, showed less inclination to dump boxcars into the river, and cost significantly less to build.

In his design, French kept the idea of using a separately suspended main span for each track, counterweighted to balance most of the dead load. Each one was suspended from a cross beam or yoke above it, which in turn was raised and lowered by two screws extending into the overhead structure. The counterweighting for the dead load was also attached to these yokes, and a sheave for these counterweighting cables is visible at the ends of the yokes. To isolate the twisting motion of the carfloat from the relatively rigid suspended span, he replaced the "swiveling head block" with a new type of apron. French called it a "contained apron" because it was contained within the main span, rather than suspended beyond its outer end. The apron's outer end rested loosely on a "rocker" placed on a transverse beam held between the outer ends of the girders. This allowed the apron's outer end to twist from side to side, yet gave support to both dead and live load on the apron; in effect the rocker transferred the load to the main span. The inner end of the apron was hinged to another transverse girder framed between the side girders. Because the outshore end of the apron simply rested on the rocker casting, it was free to move upward with the carfloat, e.g., when a load was removed from the float. The apron's floor structure allowed its deck to twist without damage, and without transmitting the torsional stress to the hinge.

In 1909 French showed his designs to engineers of the New York Central Railroad, who were about to build a new transfer bridge at the foot of West 69th Street on Manhattan, at the north end of the 60th Street yards. After they considered various alternatives, they built the bridge to his design. They used a "heavy traffic" version of the design, with the main spans 110 ft.long overall, containing within each a 30 ft. apron, and with four hoist screws each 7-5/8" in diameter. The main cables were 1.25" in diameter. Two 50-HP motors were provided, making the bridge capable of lifting with a full load of 50-ton freight cars. Mechanical drawings for the bridge appeared in *Engineering News*, 1911. The bridge was put into service in March 1911.

The bridge footings were built by Butler Bros.; the steel structural work was by Phoenix Bridge Co., and Steele & Condict of Jersey City provided the machinery, as they did for nearly all the later bridges of this type. R.E. Dougherty, district engineer of the NYC RR, was in charge of field construction work.

Each of the two single-track spans weighed 78.5 tons, yielding a dead load of 100,300 lbs at the outer ends, with 90% of this carried by the counterweight. The maximum live load reaction was to be 291,800 lbs on each side, with the bridge fully loaded and the carfloat bearing down on the end to the extent of 112,500 lbs on each side. This maximum load would apply a 150 ton force to each screw, though the screws were not expected to life the bridge under this much load (*Engineering News*, 1911, p. 774).

French claimed his bridge was very successful, being both more economical and easier to operate than previous suspension types, while at least matching their strength and speed. It was so successful that every subsequent new suspended transfer bridge at the Port of New York was built to that design, except for some replacements in kind of older bridges.

For example, the LIRR's Long Island City bridges on the East River were rebuilt to French's contained apron design in 1925, and the bridge at the Brooklyn Navy Yard, built in WW II, is also of this design. These bridges still stand. Those at Long Island City are disposed in two sets of paired bridges, for a total of four. The machinery in their towers is relatively intact but scrappers removed the actual bridges some time ago, so it is no longer clear to an observer how they worked or what they were for. The transfer bridge at the Navy Yard has been converted to a pontoon type and is no longer representative of the contained apron suspended type.

There is one suspended-type transfer bridge at Greenville in Jersey City that is still in use. These bridges were originally built in 1905 to the earlier, heavy-duty design, but have been extensively rebuilt and simplified in the intervening years. They are interesting, and show some evidence of their original design, but do not embody one consistent historical design.

With declining traffic and the merger with Penn Central in the late 1960s, the 69th Street Transfer Bridge was taken out of service but left intact, except that the rails were lifted about 1982. Of the remaining suspended bridges in the harbor, the 69th Street bridge is certainly the most historically significant of the

bridges, as well as the one with the most integrity of original structure. It is arguably one of the most historically significant industrial marine structures in the port, because of its innovative design and its relevance to the colorful working port that New York once was.

9. Bibliography

Anon.: "The 69th St. car-transfer bridge of the New York Central & Hudson River at New York City" in *Eng. News*, Vol. 66, 28 Dec. 1911, pp. 770-774.

Flagg, Thomas: "The Transfer Bridge at the Port of New York: Part III, The "Contained Apron" Type", in *Transfer No. 15*, July-Sept. 1995, 10-18. (publication of the Rail Marine Information Group)

Flagg, Thomas: 2002: *New York Harbor Railroads in Color, Vol. 2* (Morning Sun Books, 2002; ISBN 1-58248-082-6), includes historic photos of the 60th St. yard and the float bridges (p. 76).

10. Geographical Data

Acreage of Property less than one acre

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing		Zone	Easting	Northing
1	18	585177	4514498	3	18		
2	18			4	18		

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By **See continuation sheet for author**

name/title Contact: Kathleen A. Howe, Historic Preservation Specialist

organization NYS Office of Parks, Recreation and Historic Preservation date January 9, 2003

street & number P.O. Box 189, Peebles Island telephone 518-237-8643, ext. 3266

city or town Waterford state NY zip code 12188-0189

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location
A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items
(Check with SHPO or FPO for any additional items)

Property Owner (Complete this item at the request of the SHPO or FPO)

name Hudson Waterfront Associates, L.P. Contact: Paul VanDien Davis, Chief Executive Officer

street & number 175 Riverside Boulevard telephone (212) 888-0880

city or town New York state NY zip code 10069

10. Geographical Data

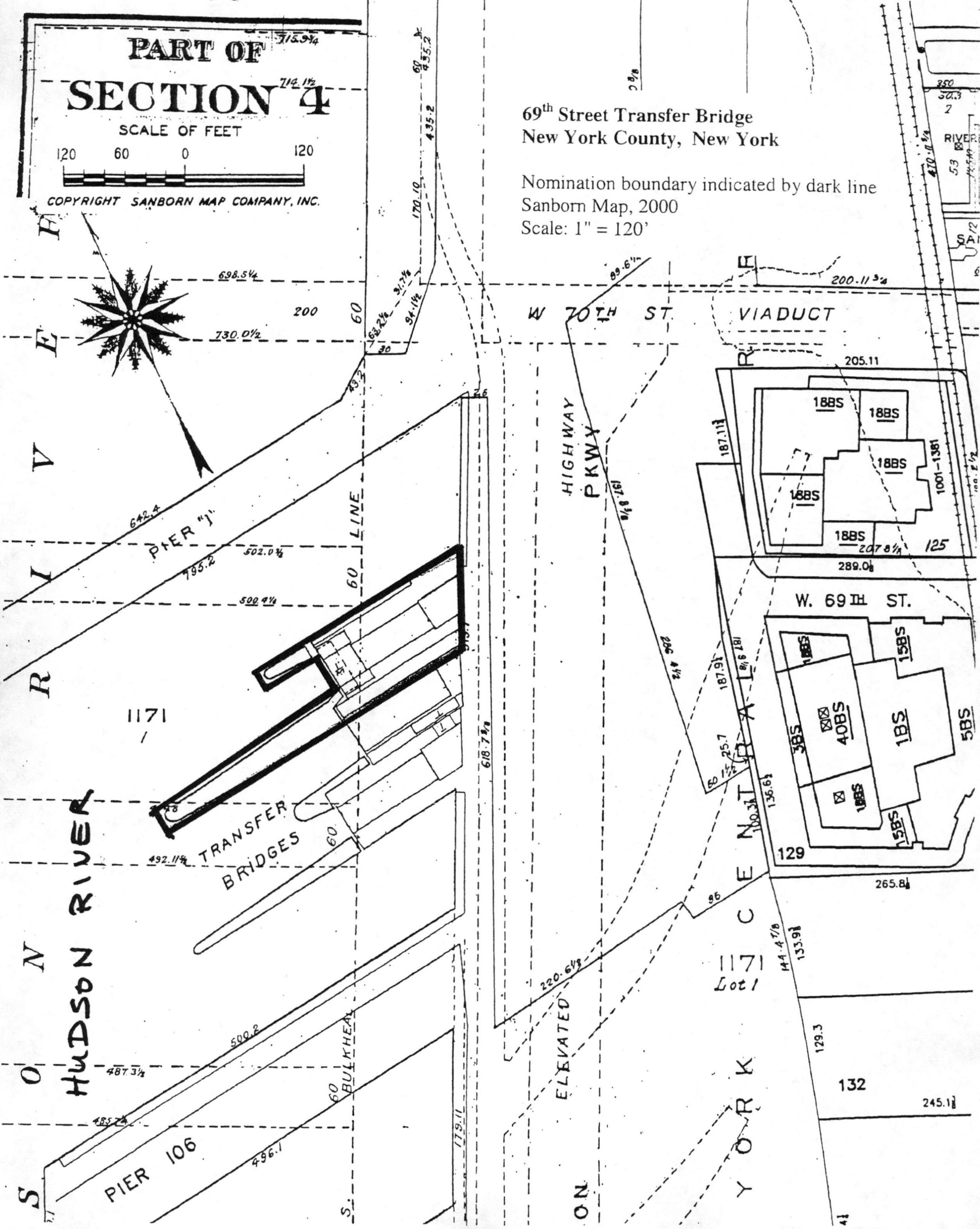
Verbal Boundary Description

The nomination boundary for the 69th Street Transfer Bridge is indicated on the attached Sanborn map.

Boundary Justification

The nomination boundary is drawn to encompass the entire engineering structure located on the Hudson River waterfront.

PLATE 88



69th Street Transfer Bridge
New York County, New York

Nomination boundary indicated by dark line
Sanborn Map, 2000
Scale: 1" = 120'

11. Form prepared by

Thomas R. Flagg
Roebling Chapter, Society for Industrial Archeology
70 West 95th Street, #234
New York, New York 10025

(212) 780-5155

Additional Documentation

List of Photographs

69th Street Transfer Bridge
on the Hudson River
New York County, New York
Photographer: Kathleen Howe
Date of photographs: 1/6/03
Location of negatives: NYSOPRHP
Peebles Island, P.O. Box 189
Waterford, NY 12188

1. North and west elevations, facing southeast.
2. East and north elevations, facing southwest.
3. North and west elevations, facing southeast.
4. East and north elevations, facing south.
5. East elevation, facing west.
6. East elevation, facing west.
7. South and east elevations, facing northwest.

Appendices

A. "The Transfer Bridge at the Port of New York: Part III - The 'Contained-Apron' Type," by Thomas R. Flagg, *Transfer no. 15 (*July-September 1995), pp. 10-17.
B. Plan: Preservation and Adaptive Reuse of Historic West 69th Street Float Bridge (Goodkind & Odea, Inc., 2001).
C. "Going Downtown, Downstream," by David W. Dunlap, *New York Times* (December 10, 2001).

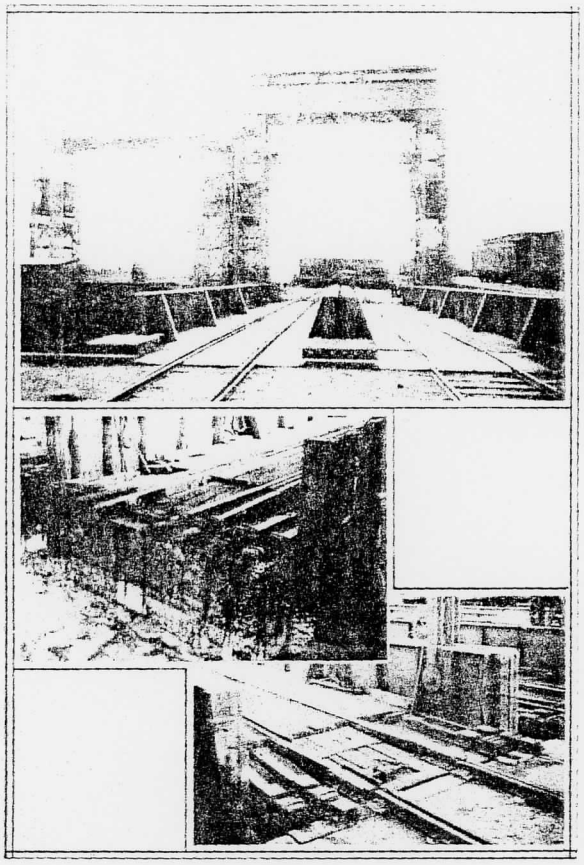


PLATE III.
Illustrating the suspended transfer bridges of the Long Island R. R. at Long Island City.

Fig. 5 shows one of the Original and one of the Reconstructed Bridges.
Fig. 6 shows the swivelling head block and end of cantilever pin.
Fig. 7 shows the Compromise Rails and Float attachment.

Above: Figure 1—Plate III from French, 1917

THE TRANSFER BRIDGE AT THE PORT OF NEW YORK: PART III THE "CONTAINED-APRON" TYPE

BY THOMAS R. FLAGG

A NEW DESIGN GAINS IMMEDIATE DOMINANCE

This is the third of a series on the evolution of the transfer bridge ("float bridge") at the Port of New York. Previously we noted that float bridge design was driven by the need to create a track between a fixed point on land and a carfloat constantly changing its position as it is loaded and unloaded. During unloading a standard steel three-track carfloat can rise 5 to 6 ft., and will twist considerably as one side and then the other is unloaded. This is in addition to adjusting for the 4-6' daily tidal range. In Part I we described the first solution: floating the outer end of the bridge on a pontoon. Because it floats, it reacts the same way to the forces as does the carfloat locked to its end, which makes for good stability, but of course requires great flexibility in the structure of the transfer bridge. As we saw, the slowness of the pontoon bridge and other disadvantages led to the introduction of the suspended bridge by the Pennsylvania RR in 1888.

As we saw in Part II, the rigidity of any suspension system strong enough to efficiently lift the bridge required a separate, very flexible bridge segment between the bridge proper and the carfloat. This segment was termed the "apron" (emphasizing once more that the term "apron" is used differently in other parts of the U.S., where it is used to mean the whole movable span, though perhaps only when the float bridge was a single span, not made up of two or more articulated segments. Aside from the Great Lakes carferries, most articles on transfer bridges in engineering journals dealt with developments at the Port of NY and since 1888 have used the term "apron" as we use it here).

As also described previously, a "second generation" of this separate-apron type was built between 1903 and 1910 by the PRR and the New Haven RR. These were expensive, but powerful and flexible, with counterweights and lift systems that allowed the operator to constantly adjust the apron as well as the main bridge as the work proceeded. Yet they were made obsolete by an even more ingenious, even more efficient, and much less expensive design first built in 1911 at the foot of West 69th St., in the New York Central RR's 60th St. yard on Manhattan's Upper West Side. In this bridge, to be illustrated shortly, the flexible apron is contained within the main bridge and no longer needs a separate suspension system. (Amazingly, this historic structure is still standing, as shown in the aerial photo on p. 12 of *Transfer No. 12*; though abandoned for a quarter century, much of its original mechanism remains.) This design swept the field: at New York, every new suspended bridge thereafter was built to this design (the *non*-suspended, pontoon type was also still built). But there were some painful birth pangs on the way to this new design.

A PRECURSOR: MALLERY'S LONG ISLAND RR DESIGN

Only the richest roads could afford the Greenville-type bridge. In an effort to create a transfer bridge that retained some of the virtues of the suspended bridge but without its high cost, A.H. Mallery, an engineer for the Long Island RR, designed and patented a new suspended bridge, U.S. Patent No. 743,901, Nov. 10, 1903 (Figure 2, p. 18). In 1904 two of these were built at the LIRR's Long Island City terminal. With a primary emphasis on economy, Mallery avoided the cost of the apron suspension system by eliminating the apron, employing instead two innovations to incorporate the needed flexibility. First, he replaced the standard double track bridge with two separate suspended spans side by side, one for each track, hung from a common framework. This allowed one track to be raised higher or lower than the other, taking up some of the torsional stress. There was just enough clearance between tracks on the standard carfloat to allow for two complete sets of girders and suspensions (French, 1917, 65). This ingenious innovation was not claimed in the patent, perhaps because in itself it was not a patentable idea.

Second, Mallery substituted for the regular apron a "swiveling head-block," simply a 2 ft. deep spacer block at the outer end of each half bridge, pivoted at its center on a 10" cantilevered pin going into the middle of the beam under the track ends; in effect, this was a rocking transverse girder. This block carried the outer ends of the bridge rails which were designed to flex as the block swiveled. Mallery relied on the use of separate bridges for each track to take up the overall twisting and these blocks would only need to take up the twisting within the track gauge. The swiveling head-block was essentially the only new feature claimed in his patent. The design was ingenious, but the kind of service these bridges perform puts a great deal of stress on every connection, and a swivel pin supported at only one end cannot take such stress. In addition, the block was too short to serve the various functions of an apron; in particular it did little to ease the vertical angle between freight cars going onto the carfloat.

Another change made to save on cost was the elimination of the rigid system of screw rods and eyebars that lifted the main spans. Mallery employed the usual counterweight to balance most of the dead weight, but the actual lifting or lowering of the bridge was done by

Appendix A

differential chain pulley blocks, operated by hand. Presumably this lifting apparatus was used only to adjust an empty bridge to the height of an incoming carfloat, much as pontoon-type bridges of the time were adjusted (as we saw in Part I). After the carfloat was attached, the dead weight in excess of the counterweight, plus all the live load, was transferred via the toggles to the carfloat. Thus the weight put onto the carfloat was probably more than in any previous bridge, whether pontoon or suspended type (French, 1917, 66). In addition, the supporting structure for the counterweight system was not strong enough, as was shortly made evident.

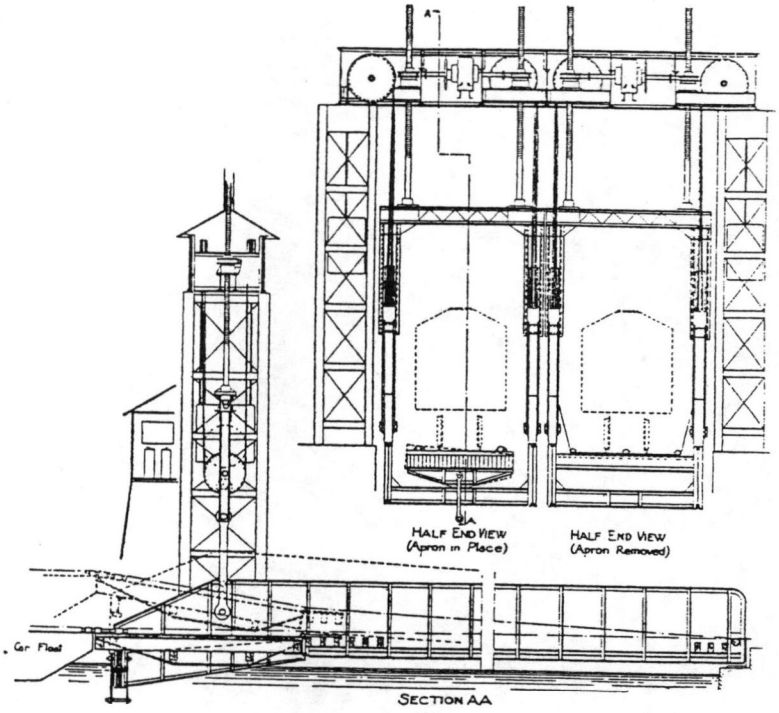
The design of these bridges caused the end of the carfloat to sink more than usual while being loaded, but apparently this greater submergence was not taken into consideration when deciding how high to make the towers supporting the counterweights. One day, not long after these bridges were put into operation, the combination of a low tide and a heavily loaded float caused the counterweights to go all the way to the top of the towers and strike an obstruction. This threw the entire live load onto the cables; the resulting stress caused a sheave to give way, dropping the bridge and the cars on it into the river. The counterweight dropped 30 ft. and broke through the timber foundation. A similar but less serious accident had already happened to the other bridge (French, 1917, 65-67; *Engineering News*, 1911). (A. H. Mallery's son, Paul Mallery, in his 1992 book on bridges for model railroaders, presents a very brief description of the suspended-type bridge that omits the incident and gives A. H. Mallery all the credit for Bensel's and French's innovations - see references.)

French's Contained-apron Design

After this debacle, a new engineer, James B. French, was brought in to correct things. Since the bridge was urgently needed, he did the minimum: in 1905 he repaired the bridge using Mallery's design, but raised the tower to allow more play for the counterweight. In addition, to handle the live load and also to allow efficient raising and lowering of the bridge he added screw supports raised by rotating nuts in an overhead structure, the standard system used at other suspended float bridges. He also strengthened the pivots of the head blocks and made other improvements. The same changes were made to the other bridge in 1906. But there were still problems, including the frequent breaking of the 10" cantilever pins, so French added further support for these pins at their outer ends.

While making these repairs and additions, French worked out a new way of building a transfer bridge that, like the Mallery ones, did not require a separate support system for the apron. But unlike the Mallery bridges, his design would have all the advantages of a full working apron. He patented it in 1911 (*Engineering News*, 1911, 770; French, 1917; French: U.S. Patent No. 983,617, Feb. 7, 1911).

In his design, French kept the idea of using a separately suspended main span for each track, counterweighted to balance most of the dead load. Each one was suspended from a cross beam or yoke above it, which in turn was raised and lowered by two screws extending up into the overhead structure. The counterweighting for the dead load was also attached to these yokes, and a sheave for these counterweighting cables is visible at the ends of the yokes.



Contained Apron Type- Car Float Transfer Bridge
Apron Support Patented Feb. 7 1911.

PLATE IV.

Above–Figure 3: Drawing from the French 1911 patent illustrating the "contained apron" type of transfer bridge–69th St. style
Below–Figure 4: Plan view of the 69th St. NYC RR transfer bridge (Figures 4-11 all retain their numbers from Eng/g. News. *1911.)*

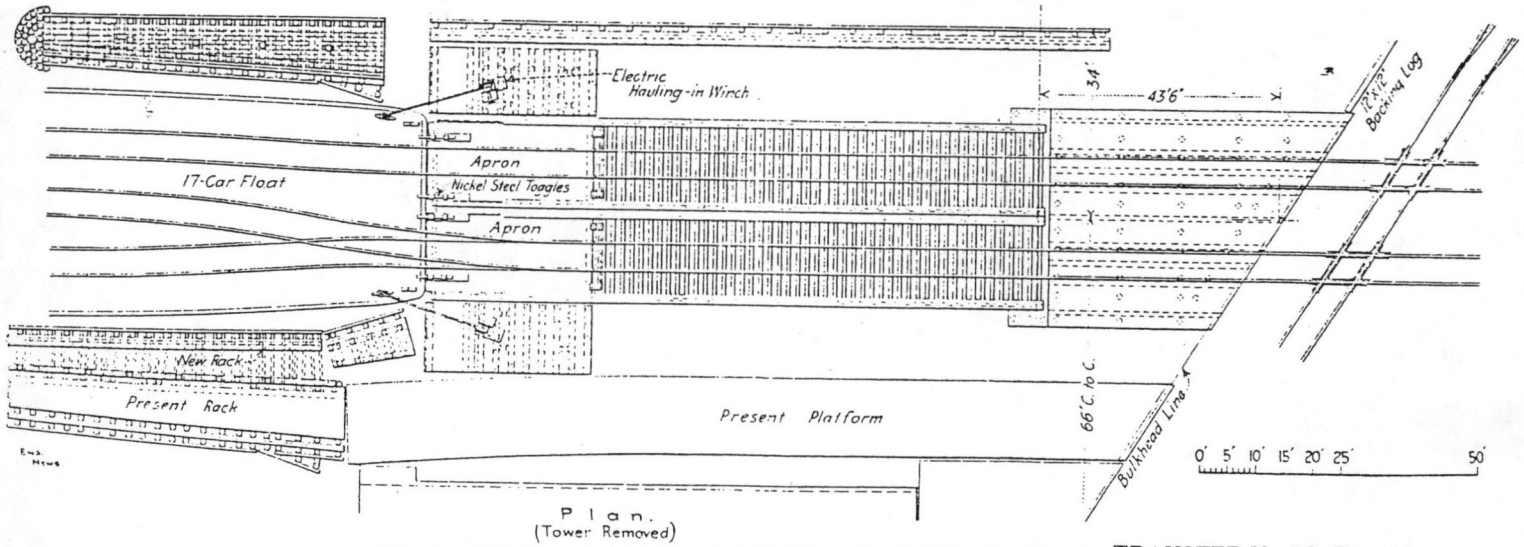


FIG. 4. GENERAL DRAWINGS OF THE 69TH ST. TRANSFER BRIDGE.

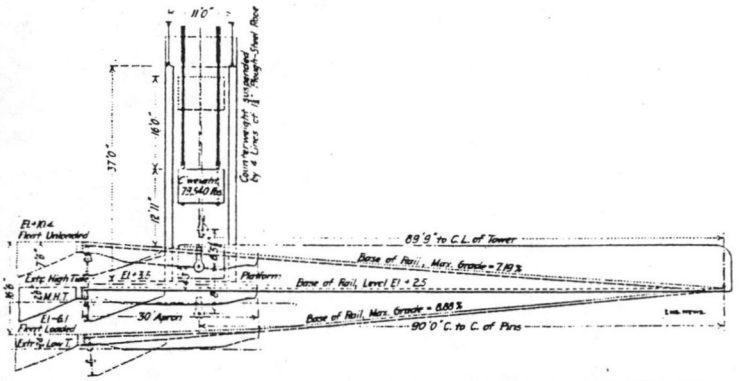


FIG. 5. DIAGRAM OF POSITIONS OF 69TH ST. TRANSFER BRIDGE UNDER TIDE AND LOAD CHANGES.

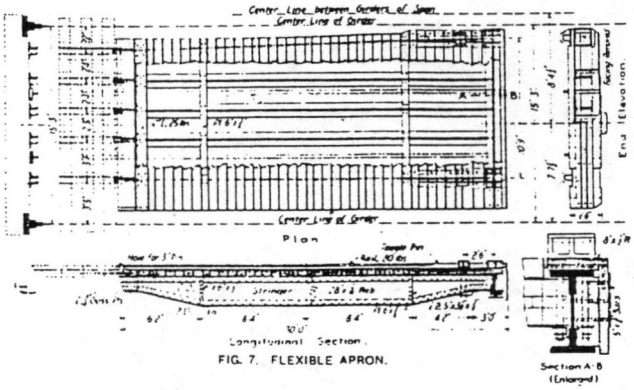


FIG. 7. FLEXIBLE APRON.

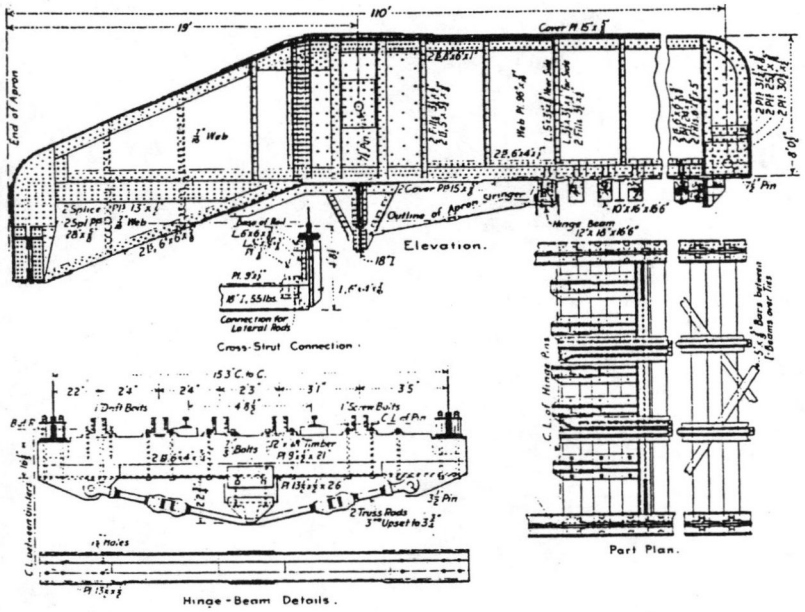


FIG. 6. CONSTRUCTION OF MAIN GIRDERS AND CROSS-FRAMING.

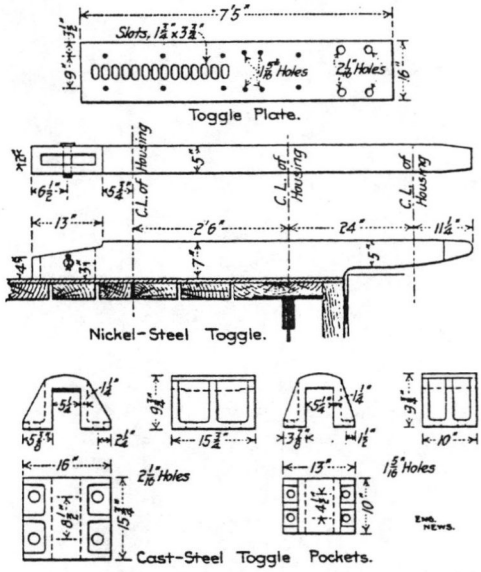


Fig. 9. Toggles With Toggle Pockets and Plates.

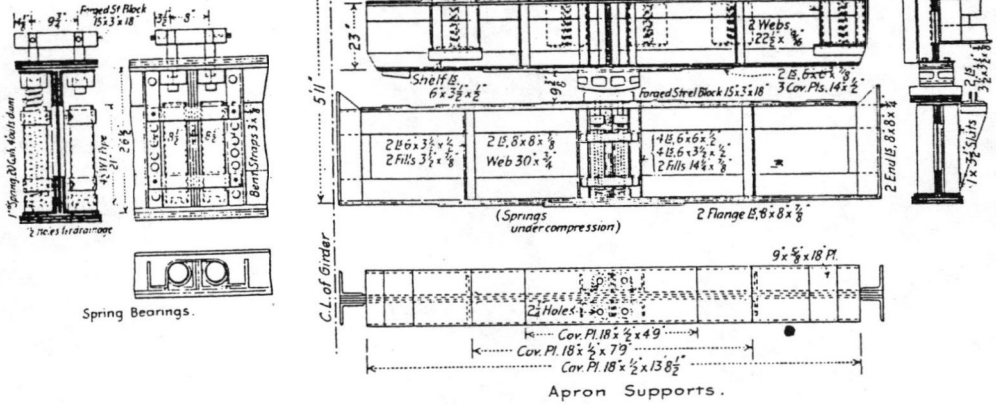


FIG. 8. APRON SUPPORTS AND SPRING BEARINGS.

Top Left–Figure 5: Drawing showing the positions of the bridges at various conditions of tides and loading of float; note the resulting grades which reach a maximum of almost 9% under certain conditions

Center Left–Figure 6: Construction details of the NYC RR 69th St. transfer bridge

Top Right–Figure 7: Flexible apron of NYC RR 69th St. transfer bridge

Bottom Right–Figure 8: Apron support and end view of apron, giving exact measurements of toggle bar spacing at NYC RR 69th St. transfer bridge

Center Right–Figure 9: Plans for toggle bars and sockets, sometimes termed "boxes;" these were standard design at Port of NY, 1911

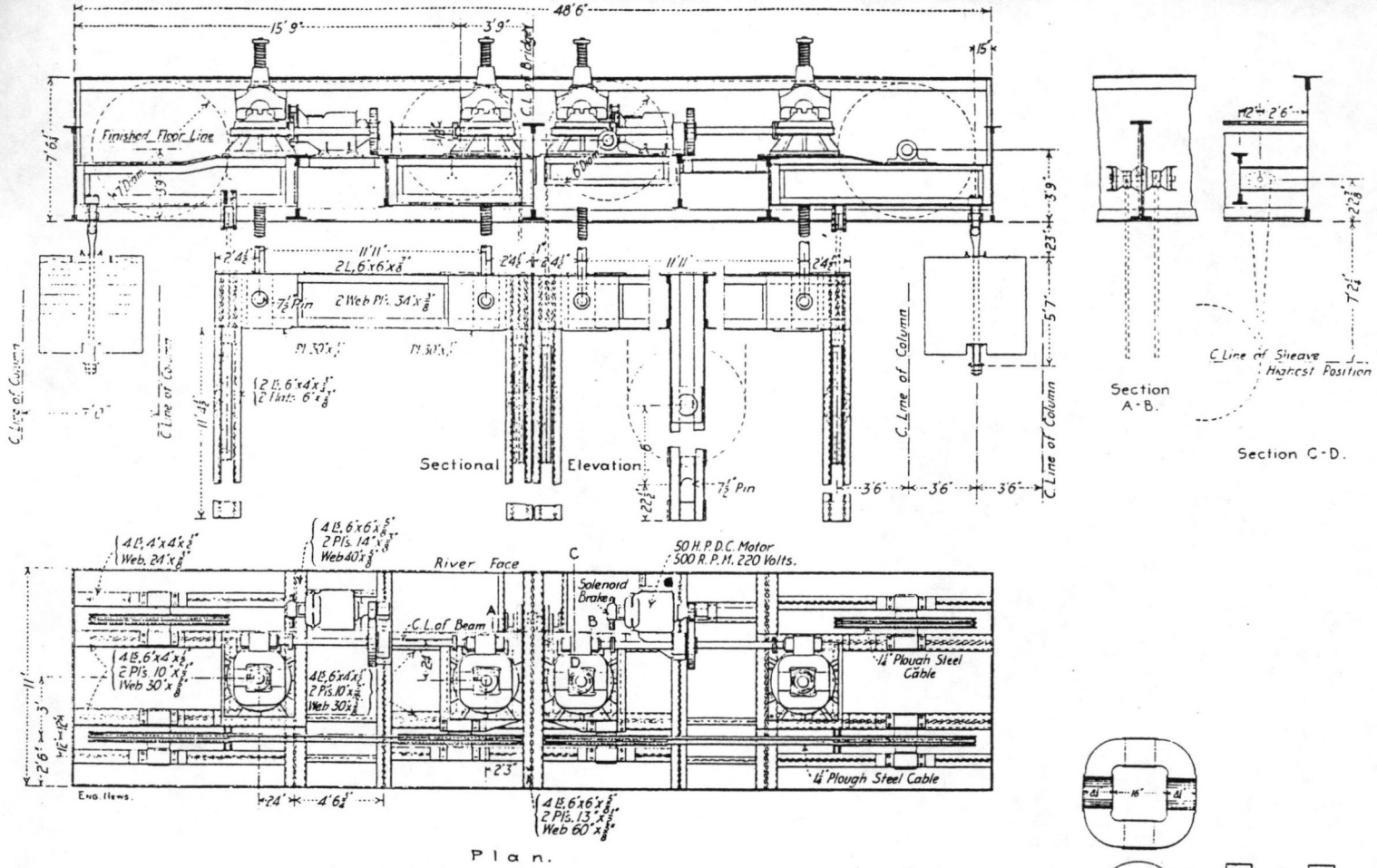


FIG. 10. LIFTING YOKES, HOIST SCREWS AND DRIVE, 69TH ST. TRANSFER BRIDGE.

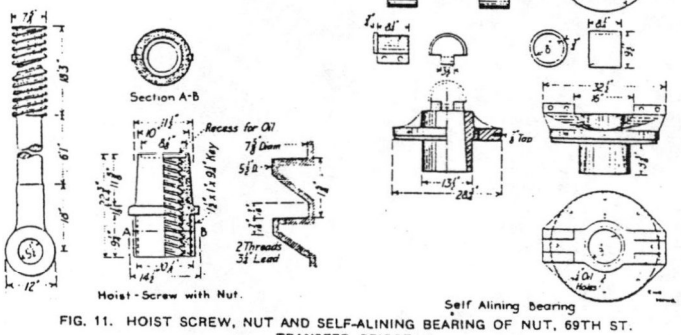


FIG. 11. HOIST SCREW, NUT AND SELF-ALINING BEARING OF NUT, 69TH ST. TRANSFER BRIDGE.

To isolate the twisting motions of the carfloat from the relatively rigid suspended span, he replaced the "swiveling head block" with a new type of apron. French called it a "contained apron" because it was contained within the main span, rather than suspended beyond its outer end, as in the suspended-type bridges described in Part II of this series. The side girders of each span were extended outward far enough to enclose a 30 ft. apron set between them. The apron's outer end rested loosely on a "rocker" placed on a transverse beam held between the outer ends of the girders. This allowed the apron's outer end to twist from side to side, yet gave support to both dead and live load on the apron; in effect the rocker transferred the load to the main span. The inner end of the apron was hinged to another transverse girder framed between the side girders. Because the outshore end of the apron simply rested on the rocker casting, it was free to move upward with the carfloat, e.g., when a load was removed from the float. The apron's floor structure allowed its deck to twist without damage, and without transmitting the torsional stress to the hinge. This design, according to French (1917, p. 69), secured all the advantages of the Greenville type of bridge with simpler construction and much less machinery, since it eliminated the need for a separate support system for the outshore end of the apron, so doing away with the live load counterweight system and its support framework, and also simplifying the operator's control of the bridge.

To save still more money (according to French), under conditions of light traffic the apron could be shorter (its upward movement therefore necessarily more restricted), and slower machinery substituted.

In 1909 French showed his designs to engineers of the New York Central RR, who were about to build a new transfer bridge at the foot of West 69th St. on Manhattan, at the north end of the 60th St. yards. After they considered various alternatives, they built the bridge to his design. They used a "heavy traffic" version of the design, with the main spans 110 ft. long overall, containing within each a 30 ft. apron, and with four hoist screws each 7-5/8" in diameter. The main cables were 1.25" in diameter. Two 50-HP DC motors were provided, making the bridge capable of lifting with a full load of 50-ton freight cars. Figures 4-11 are taken from *Engineering News*, 1911, which should give our modelers sufficient detail to reconstruct it with complete fidelity. It was put it into service in March, 1911.

The rails on the main spans were supported in an interesting way: instead of the usual floorbeam and stringer construction, the girders were connected by long wooden ties suspended from their bottoms; on these were laid longitudinals and the rails were laid on these (shown in Figure 6). In addition there were I-beams tying together the main girders.

The bridge footings were built by Butler Bros.; the steel structural work was by Phoenix Bridge Co., and Steele & Condict of Jersey City provided the machinery, as they did for nearly all the later bridges of this type. R. E. Dougherty, district engineer of the NYC RR, was in charge of field construction work.

Each of the two single-track main spans weighed 78.5 tons, yielding a dead load of 100,300 lbs. at the outer ends, with 90% of this carried by the counterweight. (The load was 56,700 lbs. at the "heel" or inshore ends.) The maximum live load reaction was to be 291,800 lbs. on each side, with the bridge fully loaded and the carfloat bearing down on the end to the extent of 112,500 lbs. on each side. This maximum load would apply a 150 ton force to each screw, though the screws were not expected to lift the bridge under this much load (*Engineering News*, 1911, p. 774).

French claimed the bridge was very successful, being both more economical and easier to operate than previous suspension types, while at least matching their strength and speed. His claim is supported by the choice of his design for the 1916 bridges at the new Bay Ridge terminal constructed by the Long Island and New Haven RRs in Brooklyn to cut short the long carfloating route between Jersey City and the south Bronx, for Pennsylvania RR traffic (other roads continued to deliver to Oak Point). In Part II of this article we described the New Haven's 1908 Oak Point bridges (in the south Bronx) as the most advanced version yet of the "Greenville type" bridge. But the Bay Ridge bridges were even more important: they were to receive the cars sent from the PRR's Greenville bridges, so they could be forwarded to New England via the newly completed (1917) Hell Gate Bridge, and were thus a vital link in the freight portion of the Northeast Corridor. Given the Pennsy influence in this whole project, and the success of the Oak Point bridges, the choice of the new "contained apron" type for the Bay Ridge bridges is very strong testimony for French's new design.

These bridges were of an even heavier design than that of the 69th St. (1911) bridge. They were also 110 ft. long, but used two 75 HP AC electric motors. Here the rails were supported on the usual system of steel stringers and floorbeams. These bridges were capable of carrying on each track a heavy steam locomotive with tender, followed by a train of 70-ton coal cars, and of lifting the bridges when thus loaded at a speed of 5 ft. per minute, measured at the bridge end (French, 1917, 73)! See the perspective sketch below, figure 13.

The four bridges at Bay Ridge were divided into two pairs: each pair was operated by a crew of three: one operator handled the electric controllers, located in a cabin suspended between the two sets, and two "bridgemen" did the work at track level. A single maintenance man looked after the oiling and general maintenance of all the bridges; in particular it was necessary to keep the hoisting nuts and screws well lubricated with a combination of grease and oil, in a manner depending on the weather. French reported that it took about 3 or 4 minutes to make the connections between bridge and float, after the latter had been warped into the slip. Under favorable conditions a loaded float could be bridged, unloaded, reloaded and released in less than 30 minutes. This was normally much faster than the cars could be switched in the yard, or floats handled in the water, at that time (French, 1918, 94-95). Space was set aside to build two additional bridges later (French, 1917, 71), but this was never found necessary, even though at Greenville six bridges *were* found necessary during World War II. By that time, both yard handling and carfloat handling were made efficient enough to match the bridging time; as we saw in Part II, under the extreme pressure of wartime traffic each set of bridges handled an average of 90 cars per hour continuously, 24 hours a day, 7 days a week!

A fine color picture of one of these bridges appears in Kalis, 1993, p. 56 (mislabeled in its caption as a Long Island City bridge). It shows the New Haven RR's 11,000 volt catenary going right out to the yokes that suspended the outer ends of the bridges. It also shows clearly the longitudinal planking on the bridge's deck, for the benefit of the bridgemen.

This design was successful enough that after 1911, every new suspension-type float bridge was built to this design, except that the PRR stayed with the Greenville design where it was rebuilding, or adding to, sets of bridges already built to that design. Yet even the Pennsy chose to build a pair of French's contained-apron bridges in 1929 at Jersey City, when it needed bridges at a new location.

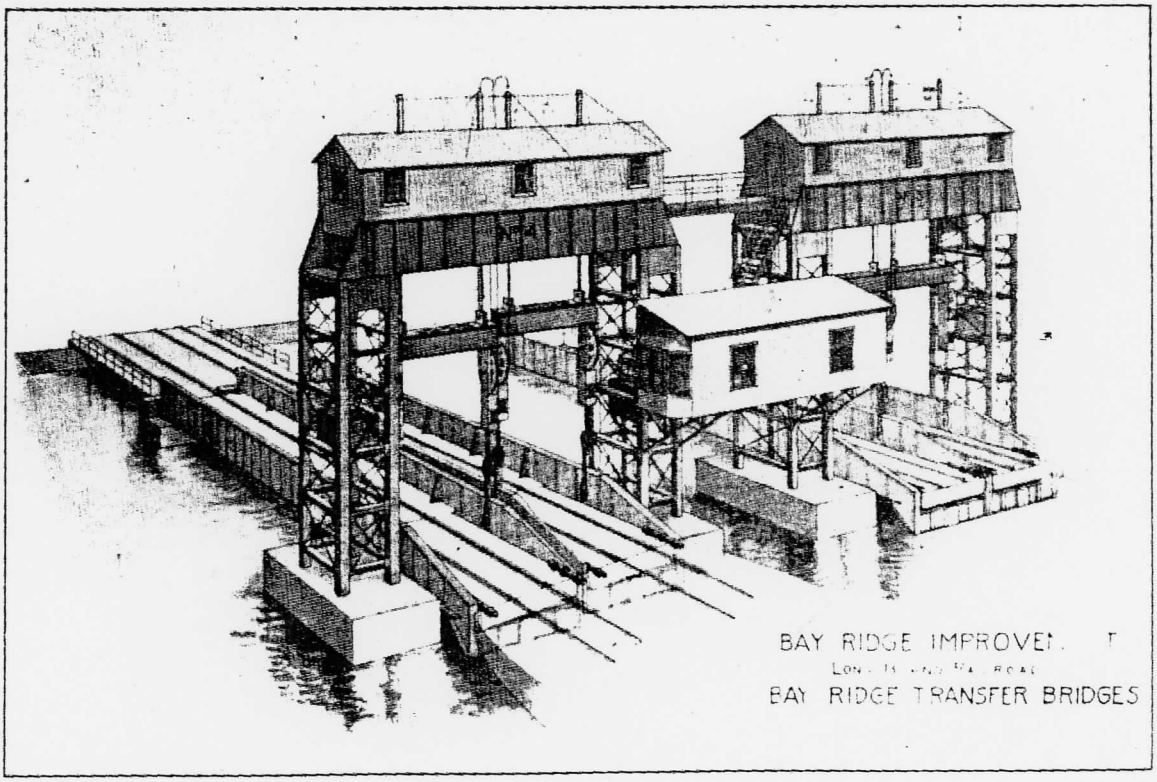


PLATE VI.

Showing Perspective Sketch of two of the new Bay Ridge Transfer Bridges of the Long Island R. R.

TRACKING THE CONTAINED-APRON BRIDGES

(Note: Most of the dates for removal of the bridges are based on the author's notes and photos of the past 25 years. Space limitations prevent printing many of these photos here.)

The original bridge of this design, the NYC's 69th St. bridge, led a useful life and was apparently never much modified. With declining traffic and the Penn Central merger in the late 1960s, it was taken out of service but left intact, except that the rails were lifted about 1982. The author has caused it to be listed by the State Historic Preservation Office as eligible for the Register of Historic Places. However this historic engineering landmark is not physically protected in any way, and is being slowly destroyed by weather and vandalism.

The Bay Ridge bridges were in constant service (refer to the 1960s interchange reports in Part II of this series, p. 18) right up until the Penn Central merger of 1968, when the PC chose to send all its New England traffic via a circuitous northern route. They were completely removed 1972-1973.

Three more contained-apron bridges were built for the New York Central at its West Shore Weehawken Yard, about 1914-1915 (French, 1917), working alongside one earlier bridge of separate-apron design. They too were taken out of service after the Penn Central merger and torn down not long after, though the steel towers of two of them remained for a time. An early-1960s photo with these in the distance and the supporting float yard in the foreground is in Baxter and Adams, 1987, p. 160.

The Lehigh Valley RR built two bridges of this design at Jersey City about 1920 (according to LV RR Ann. Report). These were removed in the 1970s. Photos of them in service can be found in the Archer and Yanosey books on the LV RR listed in the RMIG East Coast bibliography [*Transfer* No. 10 & 11 inserts].

The Erie RR built two at Jersey City in 1927 (Port Auth. Ann. Report); these were probably removed in the 1970s. They are nicely shown in a photo in the Erie-Lackawanna Historical Society publication *The Diamond*, vol. 1, #2.

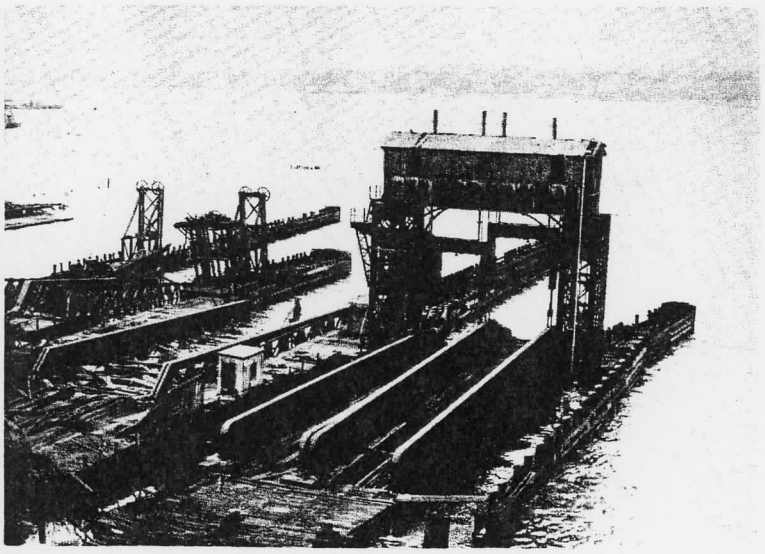
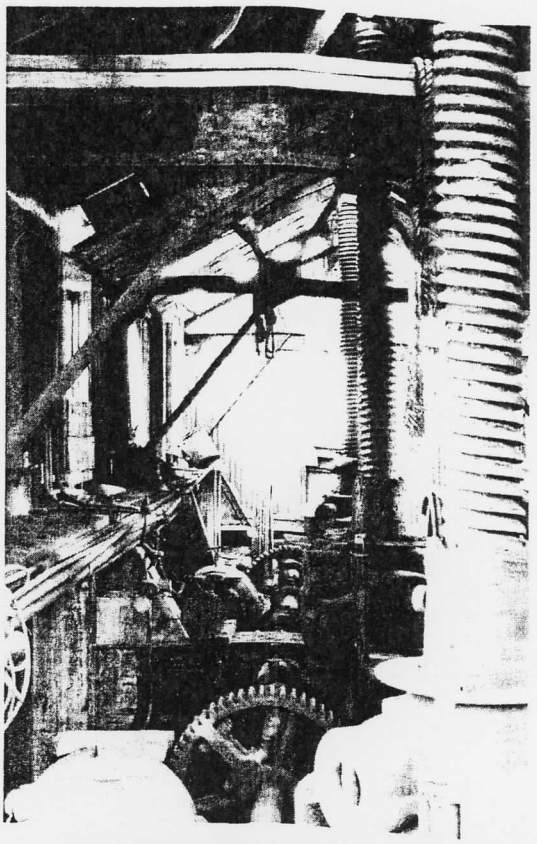
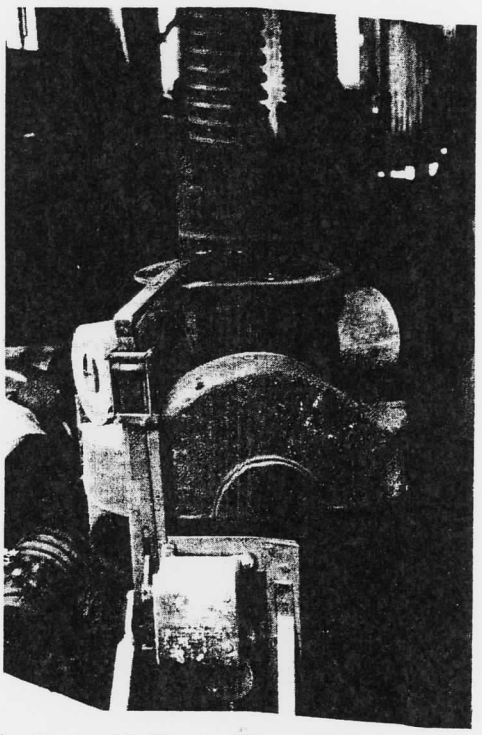


Figure 14: View of 69th St. transfer bridge from the West Side Highway, more or less in its current state. Compare with the aerial photo in Transfer *No. 12 (p. 12, top left), taken when the other two bridges were in better shape. This photo emphasizes the provision of separate spans for each track. (Photo by T. Flagg, Nov. 1987)*





Top Right—Figure 15: View inside machinery house of 69th St. transfer bridge. showing three of the four lifting screws (Photo by T. Flagg, May 1977)

Bottom Right—Figure 16: Closer view of the nut that lifts the screw,and its self-aligning bearing (see plan in Figure 8), with the pinout of its socket here (Photo by T. Flagg, May 1977)

As mentioned above, the Pennsylvania RR built two at Harsimus Cove in 1929, replacing bridges removed to make way for Harborside Terminal. For photos see Witmer's article on PRR tugs in *Keystone*, Spring 1992, pp. 46 & 62. These bridges were removed some time after 1965.

Another was built on the Harlem River by the City of New York for the Bronx Terminal Market about 1925, but not used until 1935 (NY Times, Oct. 5, 1935, p. 28). It was removed in the mid-1970s, after being out of service for many years. Still another was built in the Brooklyn Navy Yard during WW II, then converted to a pontoon type in the late 1970s (although the tower structure was left in place), and in this form was last used about 1990.

Possibly the most well known bridges of this design are the LIRR Long Island City bridges, the remains of which are still highly visible from across the East River. The LIRR's 1903 Mallery bridges, as

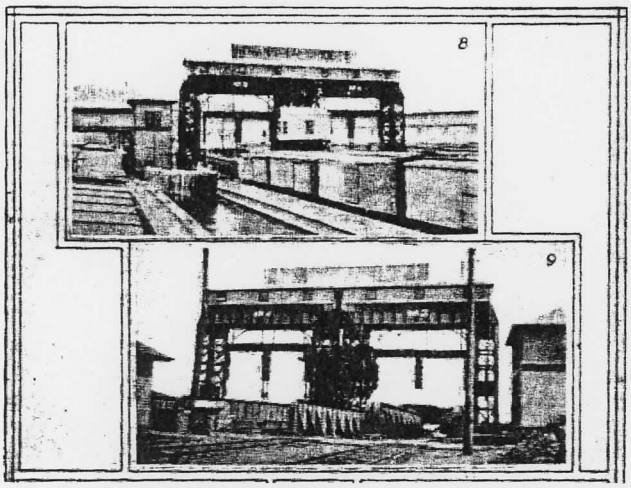
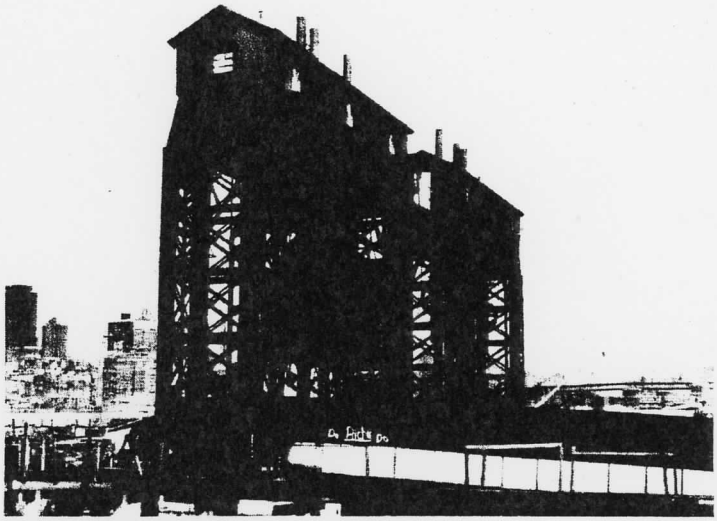


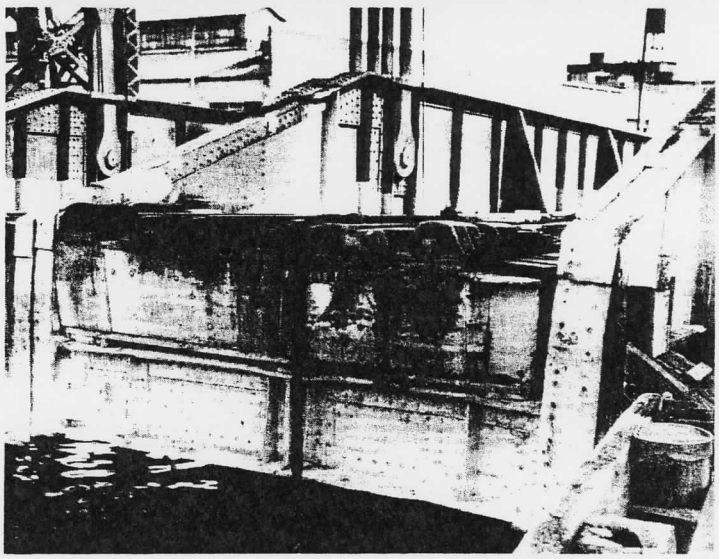
Figure 12: The New York Central's bridges at Weehawken, the second place where contained apron bridges were installed. (Figures 8 and 9 from French, 1917.)

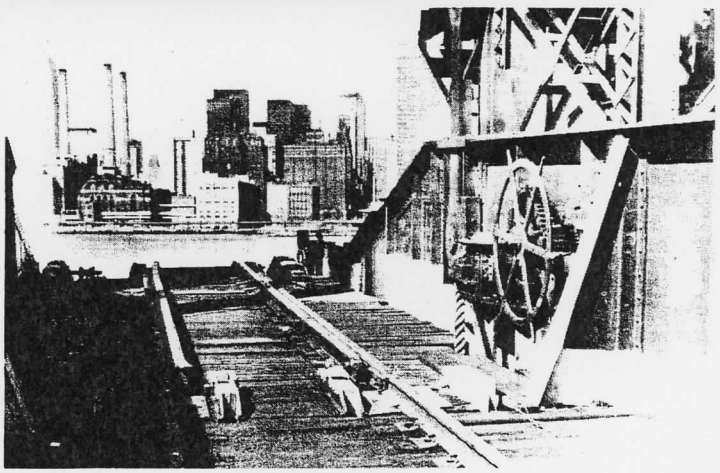
bridges, as partially rebuilt by French 1905-1906, apparently continued in service for some time, presumably due to the LIRR's chronic poverty. In fact, for many years the slowness of the bridging of carfloats at this location was so well known in rail marine circles as to become a standard joke at the meetings of the Railroad Club of New York (e.g., in the March 1904 Proceedings of the Club, p. 121).

These bridges were finally rebuilt to French's contained-apron design in 1925 and after; an interesting description of the rebuilding of the first two was published in the *LIRR Information Bulletin* in 1925, and was reprinted in Kalis' 1993 article on LIRR operations, p. 61 (see references). Kalis provides color photos of these bridges; it is clear from inspection of these that the overhead structure was rebuilt at some point, perhaps in the 1950s.

These bridges were last used in 1976 (*Rails Northeast*, Sept. 1976), then simply left in place, with the overhead apparatus intact. Unfortunately some time in the early 1980s thieves cut away much of the girders in the main spans after illegally placing fill in the water around them for access. This destruction, plus the fill, has led uninformed observers to think the remaining structures were some kind of railroad gantry crane. They are currently supposed to be stabilized and retained as the centerpieces of "Gantry Plaza", a waterside promenade to be constructed as part of a massive redevelopment of the Long Island City waterfront (*Transfer* No. 14, p. 38.)







Figures 17-22: All LIRR Long Island City transfer bridges, built 1925 to replace the reconstructed Mallery bridges. (Photos by T. Flagg)
Top--Figure 17: View from south , March, 1977.
Center--Figure 18: The outer end of the apron and its support beam of one span showing the wear of 50 years of service; note that the rocker casting is worn down or missing. Ignore the rope which the photographer neglected to remove. March, 1977.
Bottom--Figure 19: The contained apron, seen from the shore end. You can see why the apron is called "contained." In the foreground are the apron hinges; note the guard rails present only on the apron. In this view, somewhat foreshorted, it's hard to tell the apron is actually 30 feet long. March, 1977.

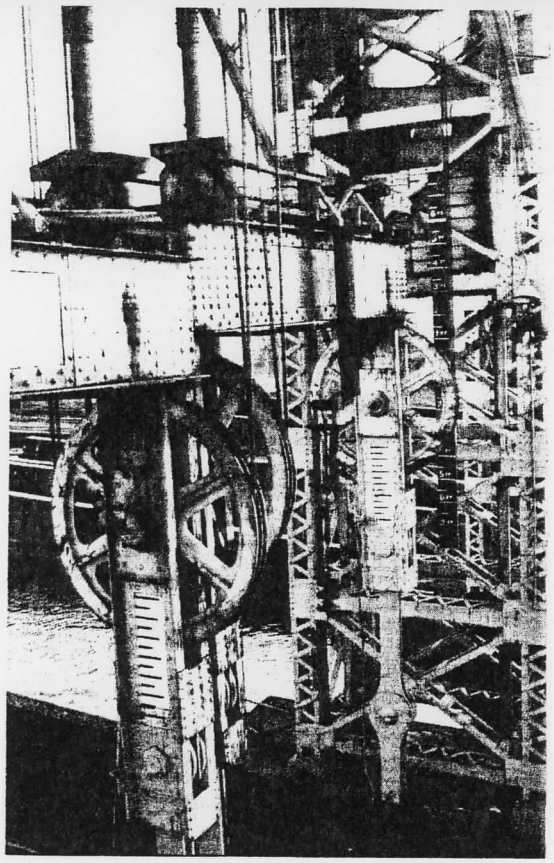


Figure 20: Suspension yoke showing operator's view of the "gauge boards" used for gauging the bridge height. The further of the bridge's two spans is slightly higher than the nearer in this photo. Jan. 1972.

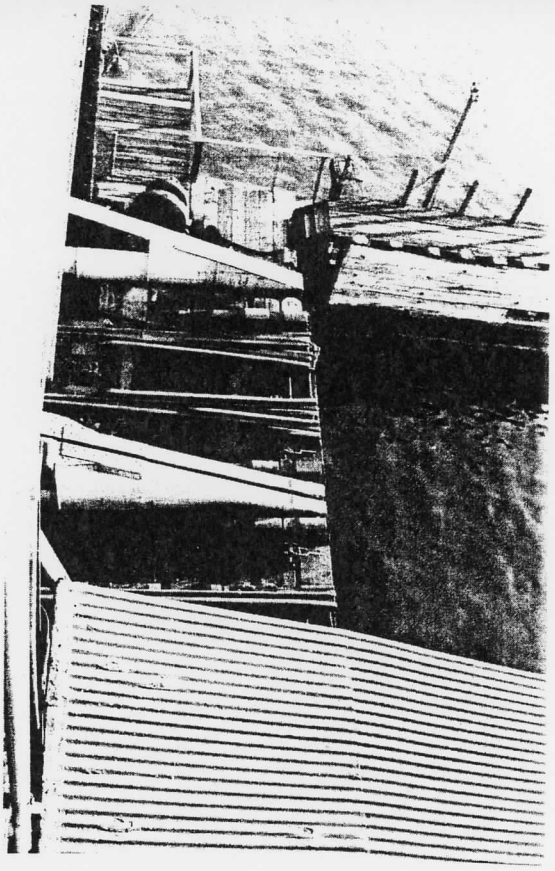


Figure 21: The aprons seen from the upper machinery house with the roof of the operators cabin below. March, 1977.

Figure 22: See back cover.

REFERENCES

Part I of this series appeared in *Transfer* No. 12, Oct.-Dec. 1994, pp. 12-18. Part II appeared in *Transfer* No. 13, Jan.-Mar. 1995, pp. 10-18. Part IIA with supplemental graphics was in *Transfer* No. 14, Apr.-June 1995, pp. 8-12 .

Baxter, Raymond J., and Adams, Arthur G: *Railroad Ferries of the Hudson* (Woodcliff Lake, NJ: Lind Publications, 1987)

Engineering News, 1911: "The 69th St. Car-transfer bridge of the New York Central & Hudson River RR at New York City," vol. 66, 28 Dec. 1911, pp.770-74

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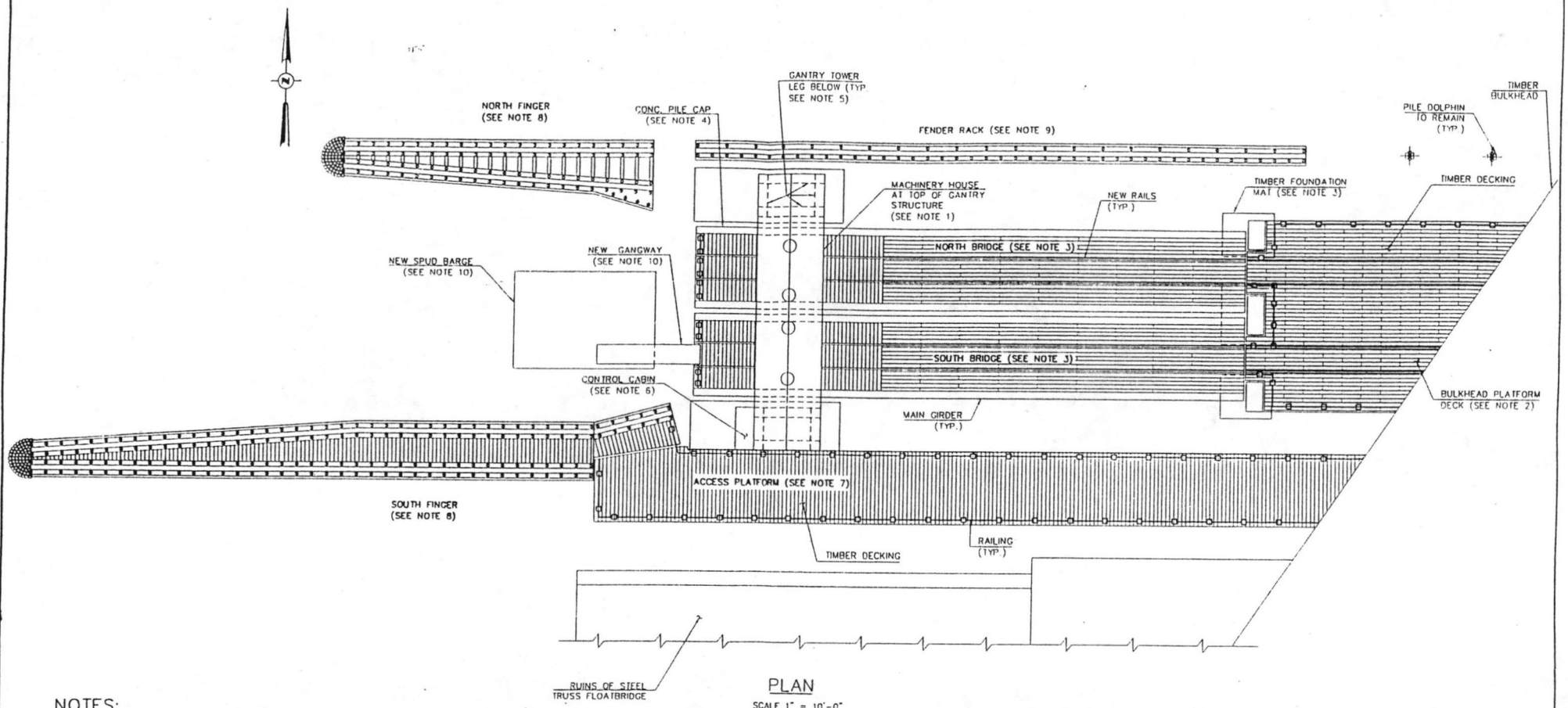
French, James B., 1918: "Car float transfer bridges in New York Harbor," *Proc. of Brooklyn Engineers' Club*, Paper No. 149, pp. 75-96, presented 10 Jan. 1918, including interesting discussion

Kalis, Nicholas, 1993: "Long Island City Float Yard Operations," in *Keystone* (publication of the Pennsylvania RR Technical & Historical Society),Summer 1993, pp. 54-62

Mallery, A. H.: U.S. Patent No. 743,901, Nov. 10, 1903 (Fig. 2, p. 18)

Mallery, Paul, 1992: *Bridge and Trestle Handbook*, Fourth Edition (Newton, NJ: Carstens Pub.), p. 121-122. Paul here implies that his father, A. H. Mallery, built the first non-pontoon (i.e., suspended-type) transfer bridge, and that this bridge was still in service at Long Island City in 1976. Presumably Paul had no knowledge of the prior separate-apron bridges covered in Part II of our series. This author wrote to Paul Mallery in 1977 to ask for documentation and was given a copy of the A. H. Mallery 1903 patent. That patent is described in the text above and the graphical plates reproduced, albeit small, on the next page; but in fact the drawing in the Bridge and Trestle Handbook, p. 121, labeled "A. H. Mallery patent", is actually a drawing of a bridge built to the F. B. French patent of 1911, not to the A. H. Mallery patent of 1903. The Handbook (p. 122) mentions that the flexible rocker beam (which Paul calls a "flexible steel unit") was the main subject of the 1903 patent, but the one patented there was never used again. French's apron was clearly a descendant of Bensel's 1888 design. Unfortunately the Handbook does not show the workings of the counterweights, the suspension screws, or the apron of the suspended-type transfer bridge. It does show a typical float-yard design. The rest of Mallery's book is probably the best popular work in print on the engineering of bridges, and is a must-have reference for the model bridge builder.

Appendix B



PLAN

SCALE 1" = 10'-0"

NOTES:

1. REPAIR BUILDING ENVELOPE FOR MACHINE HOUSE INCLUDING REPLACEMENT OF SIDING, ROOFING, WINDOWS AND DOOR, PAINT GIRDERS, REPAIR VENTS AS REQ'D.
2. RECONSTRUCT BULKHEAD PLATFORM DECK USING EXISTING PILES. REPLACE FRAMING AND DECKING. ADD NEW RAILING.
3. REMOVE, REHABILITATE AND RESET BRIDGE GIRDERS. REPLACE ALL TIES AND FLOOR BEAMS. REPAIR KNEE BRACES AND STIFFENERS AS REQUIRED. REPLACE DECKING. REPLACE TRACK. ADD RAILINGS AT WEST END. REPAIR TIMBER FOUNDATION MATS. PAINT GIRDERS AND NEW STEEL.
4. REMOVE DETERIORATED CONCRETE AT GANTRY TONER FOUNDATIONS. ENCAPSULATE PILES AND TIMBER MATS.
5. REPAIR GANTRY TOWER LEGS AS REQ'D. BLAST AND PAINT WITH APPROPRIATE CONTAINMENT.
6. REPLACE ROOFING AND SIDING AT CONTROL CABIN.
7. RECONSTRUCT SOUTH ACCESS PLATFORM USING NEW PILES, FRAMING AND DECKING. EXISTING PILES TO REMAIN. ADD NEW RAILINGS.
8. REMOVE AND DISPOSE EXISTING FINGER PIERS. CONSTRUCT NEW FINGER PIERS WITH NEW PILES, FRAMING AND DECKING
9. REMOVE AND REPLACE DETERIORATED PILES AND SHEATHING AT NORTH FENDER RACK.
10. INSTALL NEW SPUD BARGE AND GANGWAY FOR FERRY STOP.

FIGURE 1 (HALF SIZE PRINT)

PRESERVATION AND ADAPTIVE REUSE OF HISTORIC WEST 69TH STREET FLOAT BRIDGE

PREPARED BY:

Goodkind & O'Dea, Inc.
A Dewberry Company

FOR:

NEW YORK CITY DEPARTMENT OF TRANSPORTATION AND RIVERSIDE SOUTH PLANNING CORPORATION TEA-21 APPLICATION UNDER THE TRANSPORTATION ENHANCEMENTS PROGRAM

The New York Times

MONDAY, DECEMBER 10, 2001

Going Downtown, Downstream

Ferry at Riverfront Park Seen as Gateway to Wall St.

By DAVID W. DUNLAP

Travelers who funnel through the overcrowded subway station at Broadway and 72nd Street are so accustomed to feeling like cattle that they may welcome the chance to be treated like freight.

Waterborne freight, that is.

Under a new plan for Riverside Park South, being built between the Hudson River and the 13-block-long Trump Place development, a 90-year-old New York Central Railroad float bridge at the foot of 69th Street would be turned into a landing for small, high-speed ferries.

Abandoned as a gateway to America, it would re-emerge as a gateway to Wall Street. And, Donald J. Trump said last week, "It will take a lot of pressure off the 72nd Street subway."

That was not its original purpose. The float bridges that once lined the Port of New York were designed to transfer freight cars from waterside rail yards to barges called car floats, on which they were taken out to ships or to rail lines in New Jersey that connected with the rest of the country.

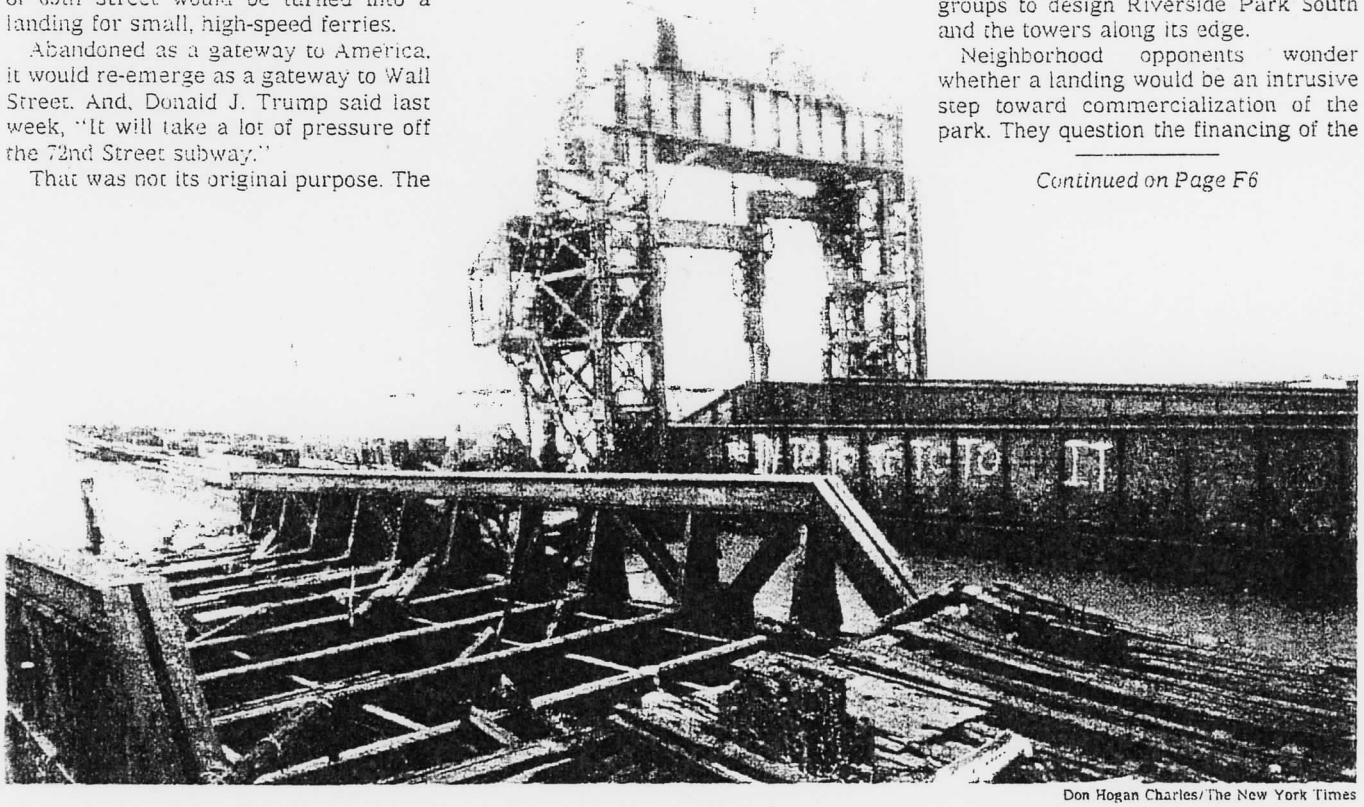
Like many such structures, Float Bridge No. 4 at 69th Street has a pair of hinged bridge decks suspended by cables from a barnlike overhead housing. Motors inside that housing lifted and lowered the decks to align them with the floats, whose position depended on the tides and the loads they carried.

Unused for decades, the renovated 69th Street bridge would be adapted for commuters through the addition at the far end of a gangway and a boarding platform known as a spud barge.

The landing could open in the fall of 2003, said Michael W. Bradley, executive director of the Riverside South Planning Corporation, a nonprofit organization formed by Mr. Trump and five civic groups to design Riverside Park South and the towers along its edge.

Neighborhood opponents wonder whether a landing would be an intrusive step toward commercialization of the park. They question the financing of the

Continued on Page F6

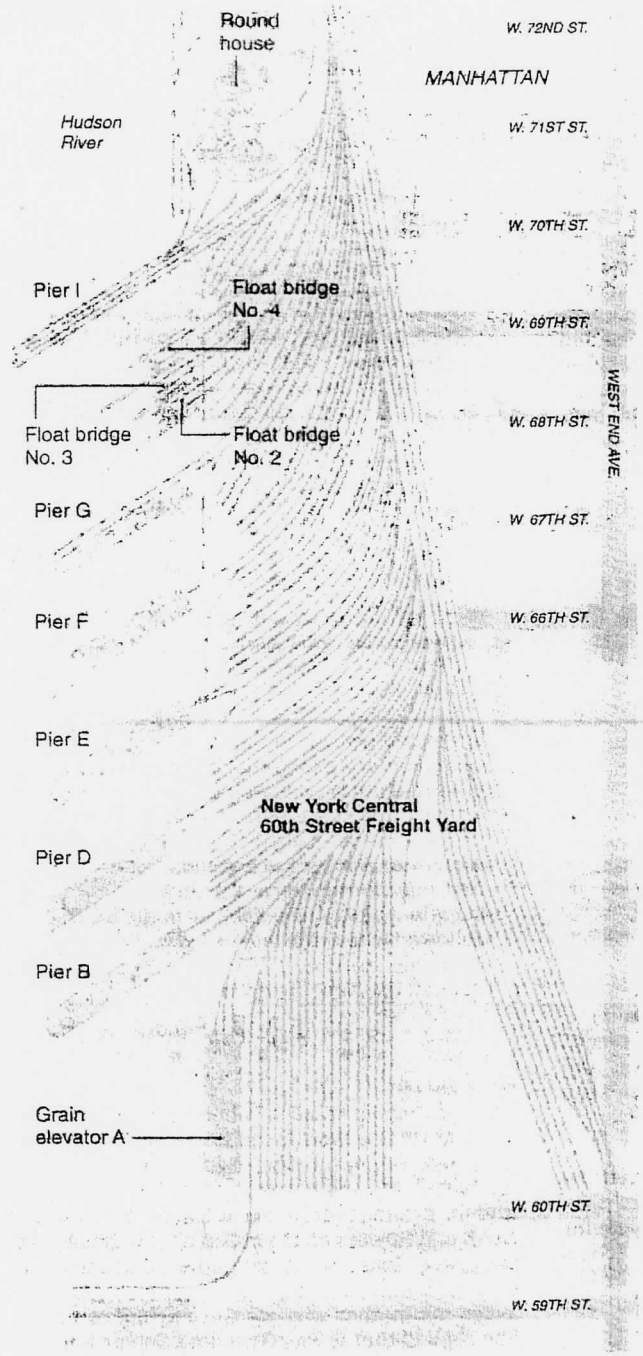


Don Hogan Charles/The New York Times

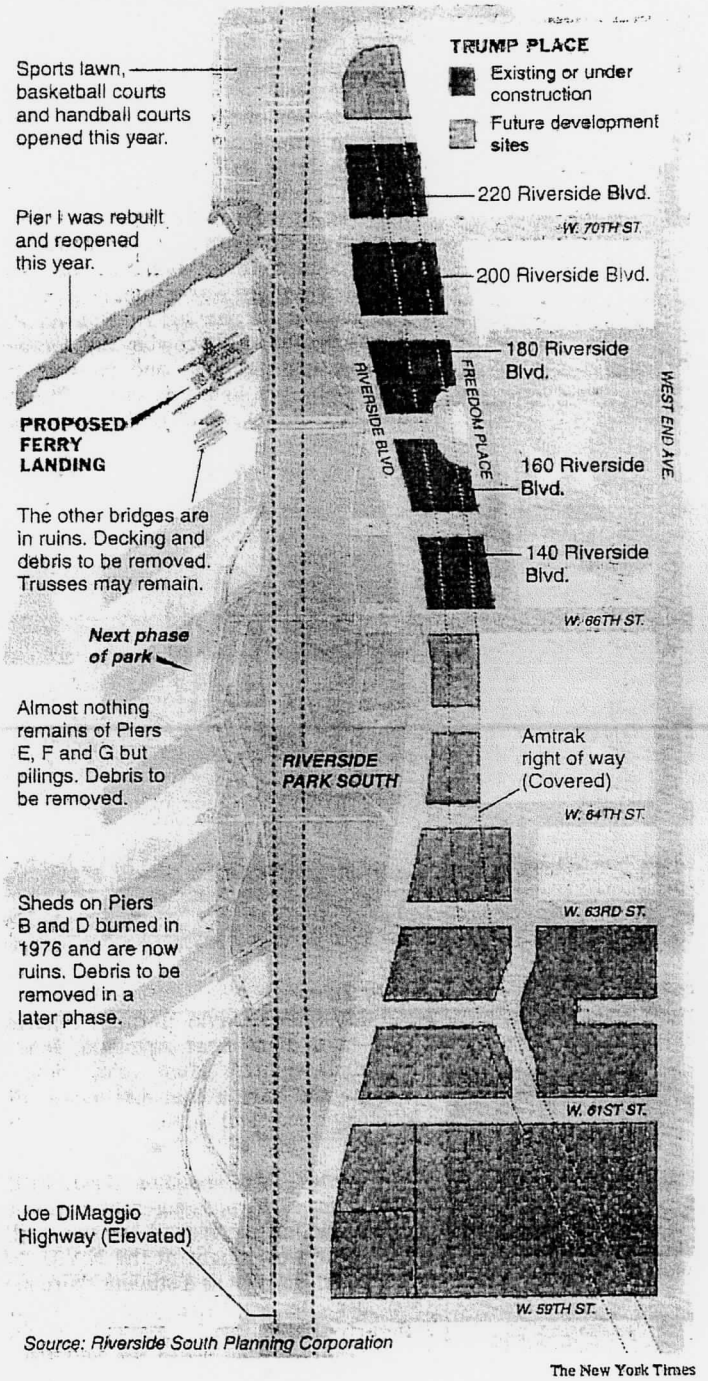
This float bridge at 69th Street may be turned into a landing for ferries that would carry passengers go to Wall Street. Part of the plan for Riverside Park South, it would ease congestion at the subway station at 72nd Street and Broadway.

Appendix C

Past



Present and Future



Source: Riverside South Planning Corporation

The New York Times

For Ferry, Downtown Is Simply Downstream

Continued From Page F1

project and the speed with which it is being reviewed. And they ask how many people would forgo the subway for a ferry that could only be reached on foot across steeply sloping riverfront parkland.

"There are no buses," said Madeleine Polayes, president of the Coalition for a Livable West Side. "You couldn't get a car or a cab down there. And if we ever get a real winter, who's going to walk down there?

"It's not that we're against ferries," she said. "We just think there's a better place to put it."

But Arthur E. Imperatore Jr., president of NY Waterway, said a 69th Street stop would present a "very attractive opportunity for creating a new commuter ferry to Lower Manhattan."

He envisions service from the World Financial Center or Pier 11, near Wall Street, to 69th Street, where there might be a ticket office, waiting room and perhaps a coffee stand.

"It need not be too elaborate," he said. "It can be designed into the fabric of the park so that it can be used by the community."

Last month, NY Waterway began ferry service linking East 90th Street and Pier 11. A one-way ticket is $5; a monthly pass costs $150. On this line are new 97-passenger, 65-foot Super Otter class ferries that reach a top speed of 35 miles per hour.

Built by Allen Marine in Sitka, Alaska, they are, in essence, successors to the "railroad navy" — hundreds of lighters, barges, tugs, scows and tankers that moved railroad freight around the archipelago of New York Harbor and across 80 or 90 float bridges in the port.

Float Bridge No. 4 is "one of the most significant marine structures remaining in the city," said Thomas R. Flagg, author of "New York Harbor Railroads in Color" (Morning Sun Books, 2000).

Designed and patented in 1911, it corrected for the twisting forces encountered when car floats listed during loading and, Mr. Flagg said, "showed less inclination to dump boxcars into the river." Almost every subsequent transfer bridge in the Port of New York had that design, he said.

Preservation of the bridge was required in the plan for Riverside Park South, which shares the former rail yard with Trump Place and is being built in phases corresponding with the construction of the Trump towers. The first segment, including the renovated Pier I, opened in April. The second phase is being triggered by the construction of 140 and 220 Riverside Boulevard.

The park is financed by the developers, a partnership of Mr. Trump and Henry Cheng, David Chiu, Vincent Lo, Charles Yeung and Edward Wong of China. On completion, each segment is to be turned over to New York City.

The original plan called for stabilization of the 69th Street bridge as an artifact and visual amenity, not unlike the Long Island Rail Road float bridges at Gantry Plaza State Park in Long Island City, Queens.

Then a few months ago, Mr. Bradley got to thinking.

"Here you have all these people," he said as he stood near the bridge, arms open to encompass Trump Place and Lincoln Towers. "And everyone of them complains about the 72nd Street subway station."

As a vice president of the Hudson River Park Trust, which is developing the waterfront south of 59th Street, Mr. Bradley oversaw the restoration of a wooden float bridge that once served a Baltimore & Ohio Railroad freight yard at 26th Street. That project is nearing completion.

Quickly — too quickly, critics have said, for a meaningful study of financing, practicality, demand or environmental impact — Mr. Bradley drew up a $2.7 million plan for a ferry landing at 69th Street.

This would involve renovating the housing from which the decks are suspended, repairing the pilings, cross-bracing the bridge girders, adding timber planking, attaching the spud barge and even replacing the missing train tracks, Mr. Bradley said, "so you would understand what this thing did."

The remnants of two other float bridges immediately to the south would be cleared away, though the bridge trusses may be kept in place. The most monumental ruin of the rail yard is the shed on Pier D, transformed by fire 25 years ago into an undulating skeleton almost worthy of Frank Gehry. To its south, Pier C is a tangled spaghetti-like mass of rusting steel.

Don Hogan Charles/The New York Times

Float bridges were once used to transfer freight cars from rail yards to barges. Then the cars were taken out to ships or to rail lines in New Jersey.

Last week, the planning corporation applied for a $2 million federal grant for the ferry landing project. It would be managed by the city's Transportation Department, which is excited about the potential, said Tom Cocola, a spokesman. The developers had budgeted $250,000 for stabilization and $450,000 would be needed to redesign the park to accommodate the landing.

"It's terrific," Parks Commissioner Henry J. Stern said of the new plan. "They're obligated to stabilize it. But making it functional would be even better."

The application was supported narrowly at Community Board 7 on the Upper West Side. Ethel Sheffer, chairwoman of the board's Riverside South task force, said she personally found the idea appealing but that it needed "hard study to see whether it really can work."

The Manhattan borough president, C. Virginia Fields, was more enthusiastic.

"Adaptive re-use of this magnificent transfer bridge," she said, "will enable residents and visitors to reconnect to New York City's industrial history."

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: 69th Street Transfer Bridge

MULTIPLE NAME:

STATE & COUNTY: NEW YORK, New York

DATE RECEIVED: 5/15/03 DATE OF PENDING LIST: 6/06/03
DATE OF 16TH DAY: 6/22/03 DATE OF 45TH DAY: 6/29/03
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 03000577

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	N	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	N	SAMPLE:	N	SLR DRAFT:	N	NATIONAL:	N

COMMENT WAIVER: N

____ACCEPT ____RETURN ____REJECT 6/26/03 DATE

ABSTRACT/SUMMARY COMMENTS:

Entered in the
National Register

RECOM./CRITERIA_____

REVIEWER_____ DISCIPLINE_____

TELEPHONE_____ DATE_____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N


TRUMP PLACE
678-1000
RENTALS

69th Street Transfer Bridge
New York County, NY

1

69th Street Transfer Bridge
New York County, NY

2


TRUMP PLACE
878-1000
RENTALS

69th Street Transfer Bridge
New York County, NY

3

69th Street Transfer Bridge
New York County, NY

4

69th Street Transfer Bridge
New York County, NY

5

69th Street Transfer Bridge
New York County, NY

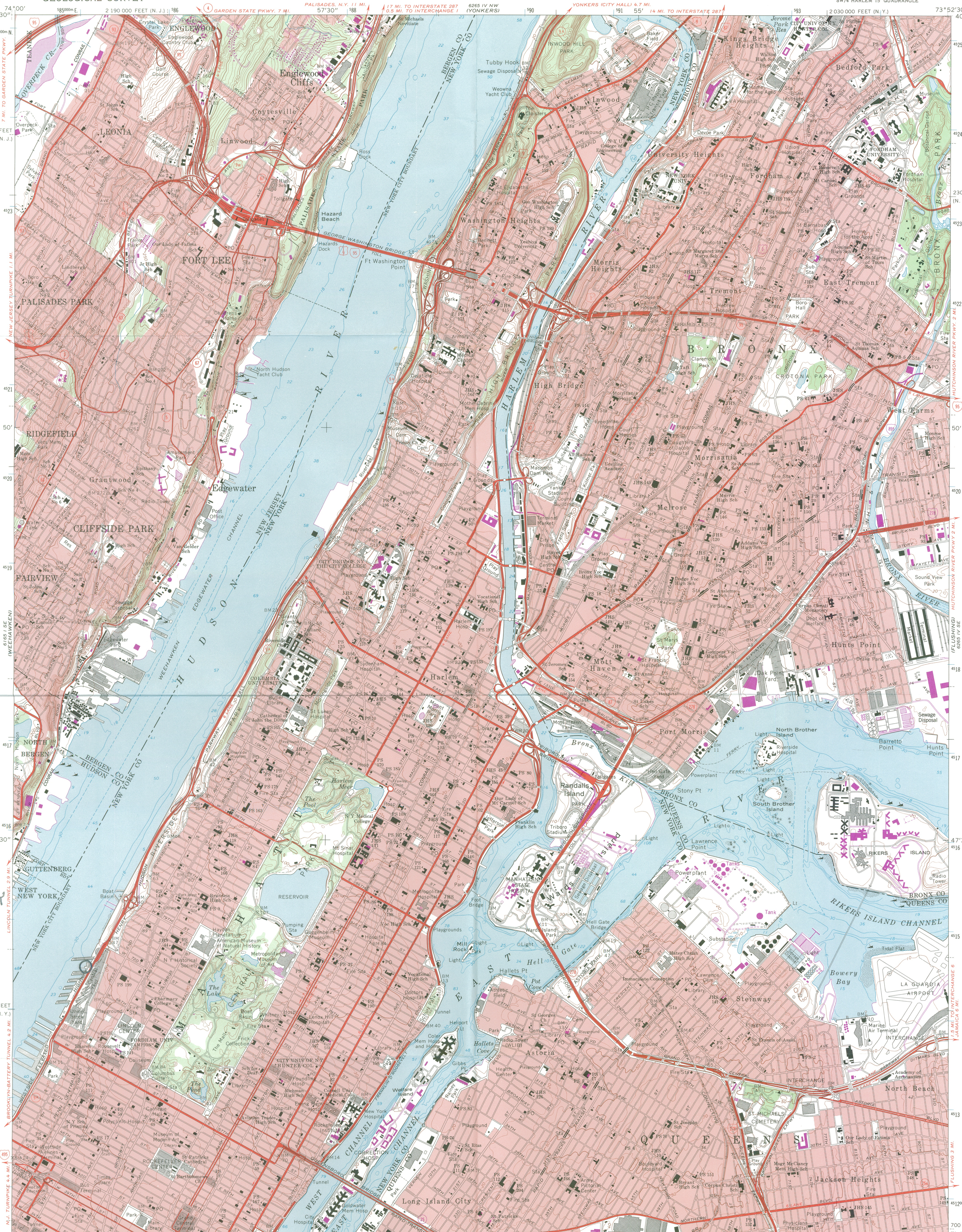
6

69th Street Transfer Bridge
New York County, NY

7

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

CENTRAL PARK QUADRANGLE
NEW YORK – NEW JERSEY
7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 HARLEM 15' QUADRANGLE



69th Street
Transfer Bridge
New York County, NY

Zone 18
Easting 585177
Northing 4514498

Central Park
Quad
Scale 1:24000

Mapped, edited, and published by the Geological Survey
Revised in cooperation with New York
Department of Transportation

Control by USGS, USC&GS, and New Jersey Geodetic Survey

Planimetry by photogrammetric methods and from USC&GS Charts T-4567, T-5089, T-5264, T-5278, T-5448, T-5449, T-5451, T-5452, T-5453, T-5458, and T-5778. Topography by photogrammetric methods from aerial photographs taken 1954 and planetable surveys 1956
Revised from aerial photographs taken 1966. Field checked 1966

Selected hydrographic data compiled from USC&GS Charts 226, 274, 745, 746, and 747 (1966). This information is not intended for navigational purposes

Polyconic projection. 1927 North American datum
10,000-foot grids based on New York coordinate system, Long Island zone, and New Jersey coordinate system
1000-meter Universal Transverse Mercator grid ticks, zone 18, shown in blue

Red tint indicates areas in which only landmark buildings are shown

UTM GRID AND 1979 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

MN 12° 213 MILS — GN 0°42' 12 MILS

To place on the predicted North American Datum 1983, move the projection lines 6 meters south and 35 meters west as shown by dashed corner ticks

SCALE 1:24 000

1 — ½ — 0 — 1 MILE
1000 — 0 — 1000 — 2000 — 3000 — 4000 — 5000 — 6000 — 7000 FEET
1 — .5 — 0 — 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 2 FEET
4 FEET IN THE HUDSON RIVER AND 5.7 FEET IN THE EAST RIVER

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

NEW YORK
QUADRANGLE LOCATION

Revisions shown in purple compiled from aerial photographs taken 1977 and other source data. This information not field checked. Map edited 1979

There may be private inholdings within the boundaries of the National or State reservations shown on this map

ROAD CLASSIFICATION

Heavy-duty	Light-duty
Medium-duty	Unimproved dirt
Interstate Route	U. S. Route
State Route	

CENTRAL PARK, N. Y. – N. J.
SW/4 HARLEM 15' QUADRANGLE
40073-G8-TF-024

1966
PHOTOREVISED 1979
DMA 6265 IV SW–SERIES V821

City of New York
Parks & Recreation

The Arsenal
Central Park
New York, New York 1 021

Adrian Benepe
Commissioner

Joshua R. Laird
Chief of Planning

(212) 360-3402
joshua.laird@parks.nyc gov

February 26, 2003

Hon. Bernadette Castro
Commissioner
New York State Office of Parks, Recreation, and Historic Preservation
Agency Building No. 1
Empire State Plaza
Albany, NY 12238

Dear Commissioner Castro: Bernadette

I would like to express the Department of Parks and Recreation's strong support for the proposed nomination of the West 69th Street Transfer Bridge, in Riverside Park South on the Hudson River in Manhattan, to the State and National Registers of Historic Places. This nomination will be considered at the March 14 meeting of the State Board for Historic Preservation. Title to the structure will be conveyed to Parks this spring after completion of Riverside Park South Phase II by the Riverside South developers.

The West 69th Street Bridge was built by the New York Central Railroad in 1911 to allow rail cars to be barged from New Jersey into the NYCRR 60th Street rail yard. Its revolutionary design was then replicated all over New York Harbor, including at the Long Island Railroad yard in Long Island City, now site of Gantry Plaza State Park, where two sets of these bridges were rehabilitated. Because of this design, the West 69th Street Bridge was determined by SHPO to be eligible for the Register in 1986.

The New York City Department of Transportation plans to rehabilitate the structure as a public pier highlighting the history of the rail yard, with a dock for commuter ferry service from the Upper West Side to lower Manhattan. City DOT has just received an award of $1 million in TEA-21 Transportation Enhancement Program funds for this project. After the structure is listed on the Registers, its rehabilitation will also be eligible for funding from other sources such as the Environmental Protection Fund.

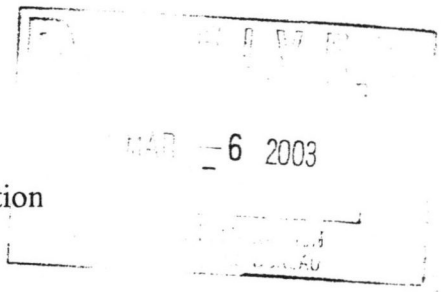
I look forward to working with you and your staff to help restore and reuse this surviving remnant of New York City's maritime industrial heritage.

Sincerely,

Adrian Benepe

HUDSON WATERFRONT ASSOCIATES, L.P.

175 Riverside Boulevard
New York, New York 10069
tel: 212-888-0880 fax: 212-496-8206



March 4, 2003
State Historic Preservation Officer
c/o Ms. Kathy Howe
Historic Preservation Field Services Bureau
New York State office of Parks, Recreation and Historic Preservation
Peebles Island
P.O. Box 189
Waterford, New York 12188-0189

Re: **69th Street Transfer Bridge**
New York, New York County

Dear Ms. Howe:

In response to the letter dated February 14, 2003 from Ms. Ruth L. Pierpont, copy attached hereto, I wish to express the support of Hudson Waterfront Associates, L.P. for the nomination of the above referenced property to the National and State Registers of Historic Places. Hudson Waterfront Associates, L.P. is the owner of the property on which the 69th Street Transfer Bridge is situated and we will convey title to the property to the City of New York as part of the second phase of Riverside Park South. We expect the title transfer to take place this spring, upon completion of our Riverside Park South Phase 2 construction activities. As you may be aware, the Riverside Park South Phase 1 construction received the Governor's Waterfront Re-Discovery award in 2001.

Hudson Waterfront Associates, L.P. fully supports the planned rehabilitation of the 69th Street Transfer Bridge by the New York City Departments of Parks and Transportation into a public park pier and ferry landing, a project which has recently been awarded $1 million from the TEA-21 Transportation Enhancements Program. We understand that upon the property being listed on the Registers, this project will become eligible for funding from additional sources.

Please do not hesitate in contacting me in the event I may provide additional assistance.

Best regards,

Paul VanDien Davis
Hudson Waterfront Associates, L.P.
Chief Executive Officer
attachment as stated

The New York City Landmarks Preservation Commission

1 Centre Street, 9th Floor North, New York NY 10007 TEL: 212-669-7922 FAX: 212-669-7797
http://nyc.gov/landmarks/

RONDA WIST
EXECUTIVE DIRECTOR
rwist@lpc.nyc.gov

March 4, 2003

Ms. Ruth Pierpont, Director
New York State Office of Parks Recreation
and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island
P.O. Box 189
Waterford, New York 12188-0189

Re: 69th Street Transfer Bridge, New York, New York

Dear Ms. Pierpont:

I write on behalf of Chair Robert B. Tierney in response to your request for comment on the eligibility of the 69th Street Transfer Bridge in Manhattan for the State and National Registers of Historic Places.

Mary Beth Betts, the Commission's Director of Research, has reviewed the materials submitted by the Historic Preservation Field Services Bureau and recommended that the 69th Street Transfer Bridge appears to meet the criteria for inclusion on the State and National Registers of Historic Places.

Sincerely yours,

Ronda Wist

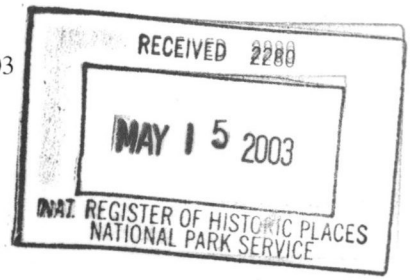
Ronda Wist

cc: Robert B. Tierney, Chair
Mary Beth Betts

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

May 13, 2003



Ms. Alexis Abernathy
National Park Service
National Register of Historic Places
1201 Eye St. NW
8th Floor
Washington, D.C. 20005

Re: Transmittal of National Register
Nomination

Dear Ms. Abernathy:

I am pleased to transmit one new National Register nomination to be considered for listing by the Keeper of the National Register as follows:

69th Street Transfer Bridge, New York, New York Co., NY

Thank you for your assistance in processing this proposal. Please feel free to call on me at 518-237-8643 ext. 3258 if any questions arise.

Sincerely,

Mark L. Peckham
National Register
Program Coordinator

enclosure