FOI #15853

Torres Rojas, Genara

From: crossharbor11@gmail.com
Sent: Thursday, March 05, 2015 10:44 PM
To: Duffy, Daniel
Cc: Torres Rojas, Genara; Van Duyne, Sheree; Ng, Danny
Subject: Freedom of Information Online Request Form

Information:

First Name: Paul
Last Name: Strubeck
Company: Gotham Rail Services
Mailing Address 1: 5227 North 37th St
Mailing Address 2:
City: Galesburg
State: MI
Zip Code: 49053
Email Address: crossharbor11@gmail.com
Phone: 6312557007
Required copies of the records: Yes

List of specific record(s):
-Railroad Float Bridge Improvements, Conceptual Design Report, Frederic R. Harris, 112598. - Corps Of Engineers, Port Series, The Port of NY NJ, in Three Volumes, Data on Piers, Warves Docks, - Documents relating to the construction or demolition of Transfer of Float bridges in New YorkNew Jersey.

THE PORT AUTHORITY OF NY & NJ

FOI Administrator

June 6, 2015

Mr. Paul Strubeck
Gotham Rail Services
5227 North 37th St.
Galesburg, MI 49053

Re: Freedom of Information Reference No. 15853

Dear Mr. Strubeck:

This is in response to your March 5, 2015 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code", copy enclosed) for copies of the following records: -Railroad Float Bridge Improvements, Conceptual Design Report, Frederic R. Harris, 112598. - Corps Of Engineers, Port Series, The Port of NY NJ, in Three Volumes, Data on Piers, Warves Docks, - Documents relating to the construction or demolition of Transfer of Float bridges in New York/New Jersey.

Material responsive to your request and available under the Code can be found on the Port Authority's website at http://www.panynj.gov/corporate-information/foi/15853-O.pdf. Paper copies of the available records are available upon request.

Pursuant to the Code, certain portions of the material responsive to your request are exempt from disclosure as, among other classifications, security.

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,

Danny Ng
FOI Administrator

Enclosure

4 World Trade Center, 18th Floor
150 Greenwich Street
New York, NY 10006
T: 212 435 3642 F: 212 435 7555

THE PORT AUTHORITY
OF NEW YORK & NEW JERSEY

Federal Highway Administration

April 4, 2013

Daniel Saunders
Deputy State Historic Preservation Officer
New Jersey Historic Preservation Office
Mail Code 501-04B
501 East State Street
P.O. Box 420
Trenton, NJ 08625

Dear Mr. Saunders:

The Port Authority of New York and New Jersey (PANYNJ) is advancing the Cross Harbor Freight Program with the goal of improving goods movement across New York Harbor. As part of the overall environmental review process for the Program, PANYNJ, acting as co-lead agency with the Federal Highway Administration (FHWA) is preparing a tiered National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) to evaluate alternatives to improving the regional freight network, reducing traffic congestion, improving air quality, and providing economic benefits. The PANYNJ is simultaneously pursuing a project to upgrade the rail infrastructure at Greenville Yard, Jersey City, New Jersey, in order to keep the sole remaining cross-harbor marine railroad system functioning, This system is operated by New York New Jersey Rail, LLC, which is wholly-owned by PANYNJ.

On March 14, 2011, FHWA, PANYNJ, and the New Jersey Historic Preservation Office (NJHPO) signed a Memorandum of Agreement (MOA) for the Greenville Yard Lift Bridge Acquisition and Replacement Project in Hudson County, New Jersey (see attached). This agreement identified measures to minimize and/or mitigate adverse effects on Historic Properties, including the preparation of a Relocation/Salvage and Marketing/Implementation Plan to assess the prudence and feasibility of preserving the entire Greenville Yard Lift Bridge and/or portions or elements thereof at another location (Section I.B.).

After the MOA was signed, and while preparation of mitigation documents was still underway, a catastrophic storm event (Superstorm Sandy) severely damaged the infrastructure of the Greenville Lift Bridge. PANYNJ engineers deemed the structure unsafe and emergency demolition occurred in late November of 2012. This emergency demolition has precluded the continued evaluation of the relocation and preservation of the Greenville Yard Lift Bridge or substantial portions thereof. However, before demolition occurred, workers were able to recover a number of electrical components from the Lift Bridge.

As you know, PANYNJ, FHWA, and SHPO met on January 28, 2013 to discuss the status of Greenville Yard Project and to devise a path for moving forward with the MOA provisions. In this meeting, PANYNJ agreed to continue to pursue the identification of an appropriate location where some or all of the salvaged Lift Bridge components can be preserved and accessed by the public. These potential locations and the logistics of relocation would be included in a Salvage Plan and Marketing/Implementation Plan, as per MOA stipulations. The FHWA and PANYNJ agreed that funding would be provided (up to $300,000) for transporting and installing the chosen electrical components at a museum or other suitable location, and that such funding was eligible for federal reimbursement as part of the Greenville Yard Project.

The PANYNJ will continue to fulfill the other requirements of the MOA, including preparation of Historic American Engineering Record (HAER) documentation. In addition to the mitigation measures outlined in the MOA (Section I.A), PANYNJ has created a 25-minute film documenting the history, operations, and emergency demolition of the Greenville Yard Lift Bridge and proposes to create a webpage that would make this documentary and other materials pertaining to the history and engineering of the historic resource available to the public.

Although the storm damage and emergency demolition has expedited the bridge reconstruction schedule, there are no new project elements or planned construction activities proposed within the area of potential effect (APE). The FHWA and PANYNJ believe that the change in approach to the Relocation/Salvage Plan caused by the emergency demolition does not necessitate an amendment to the existing MOA. Thus with this letter we consider the Section 106 consultation process to be complete.

If you have any questions or concerns regarding our proposed approach to the continued fulfillment of the terms of the MOA, please contact Evelyn Shapiro of the PANYNJ at (212) 435-4235 or eshapiro@panynj.gov.

Sincerely,

John Formosa
Major Projects Manager
Federal Highway Administration

Mark D. Hoffer
Director, New Port Initiatives, Port Commerce
Port Authority of New York and New Jersey

encl:
Memorandum of Agreement (MOA) for the Greenville Yard Lift Bridge Acquisition and Replacement Project in Hudson County, New Jersey

cc: *Carlos Padilla (FHWA)*
Matt Masters (PANYNJ)
Evelyn Shapiro (PANYNJ)

9.26.13

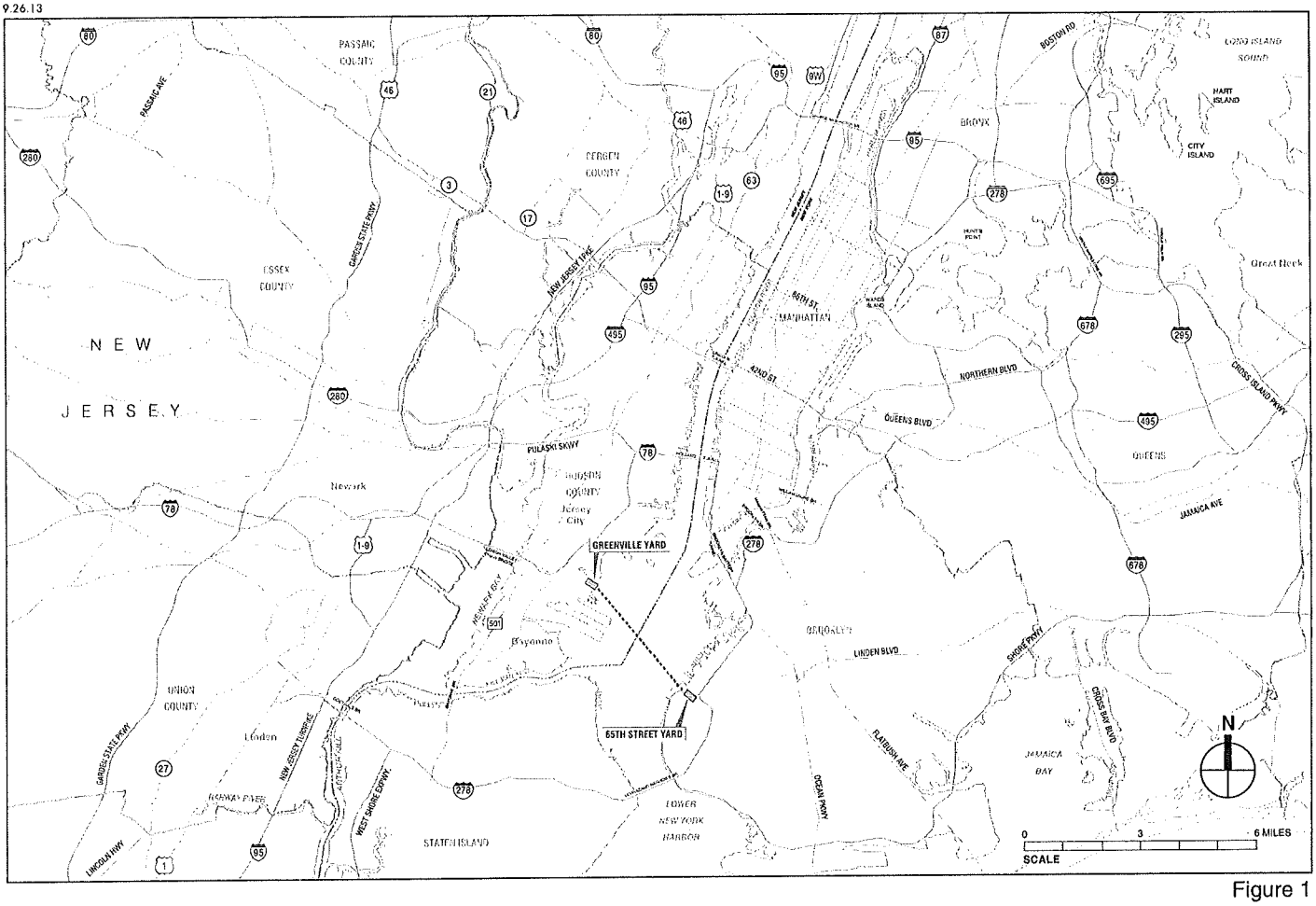
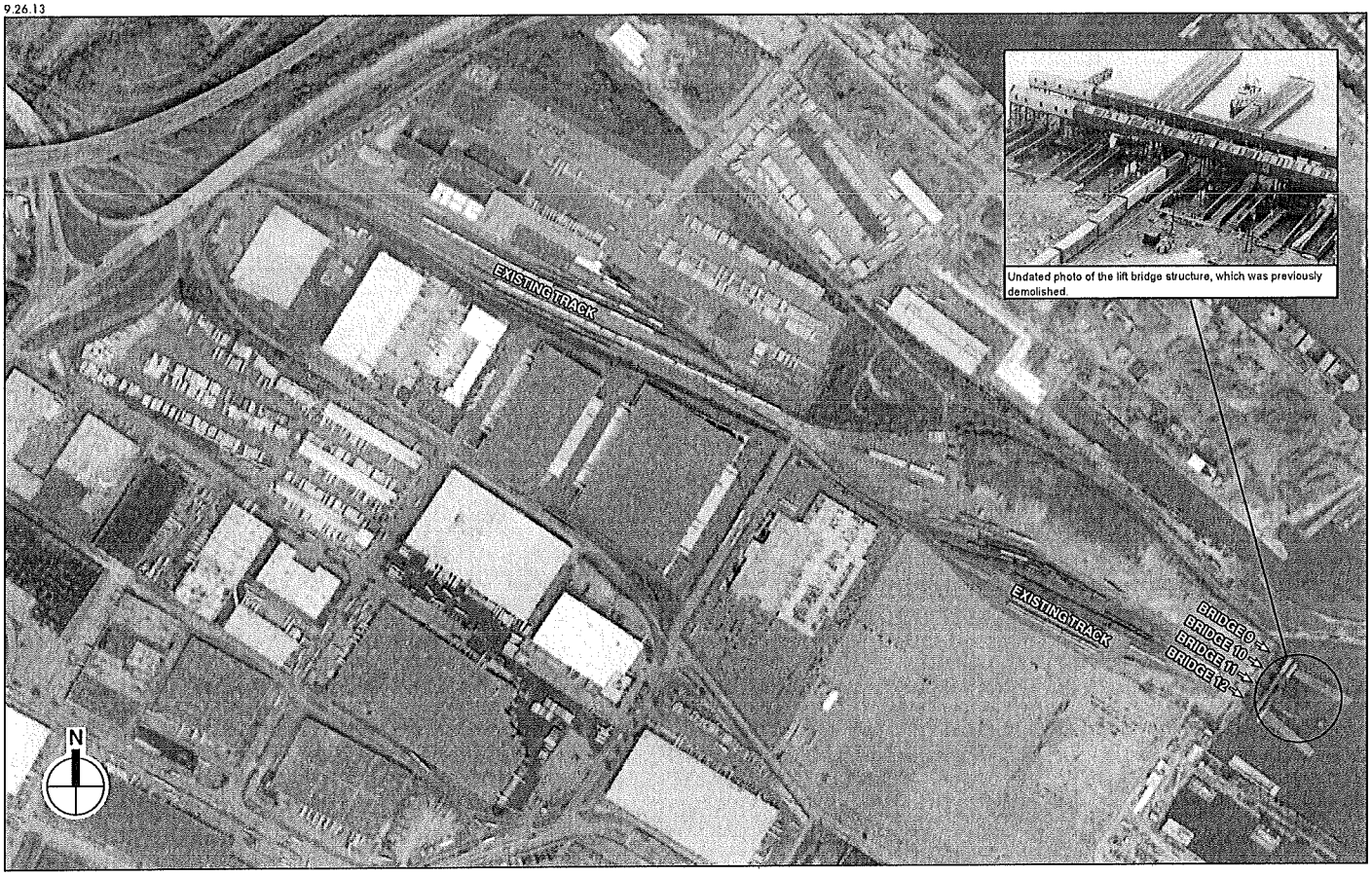


Figure 1
Study Area

CROSS HARBOR FREIGHT PROGRAM • Greenville Yard Salvage and Marketing Plan

9.26.13



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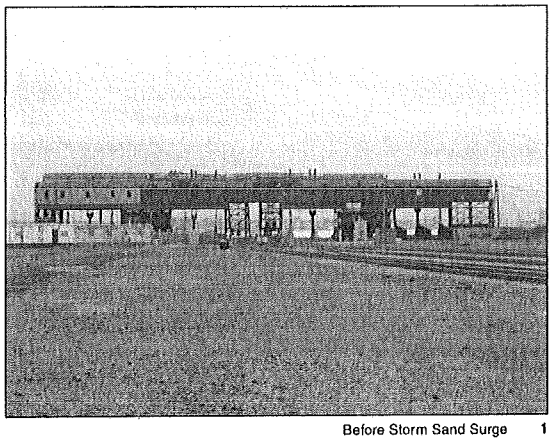
SCALE

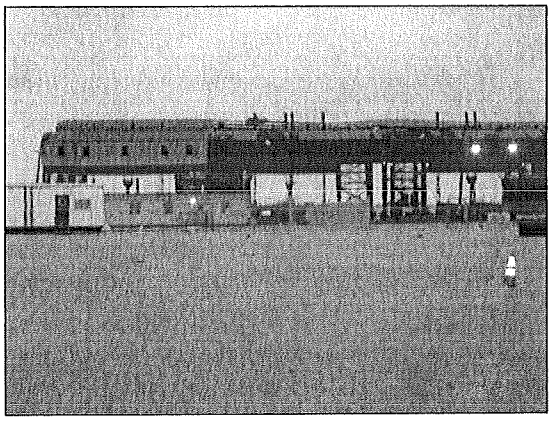
Figure 2
Existing Conditions

CROSS HARBOR FREIGHT PROGRAM • Greenville Yard Salvage and Marketing Plan

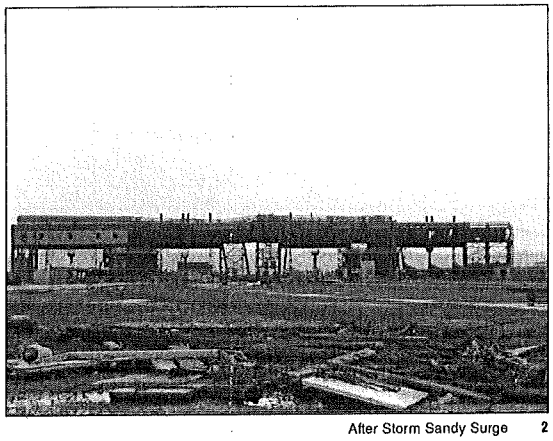
9.26.13



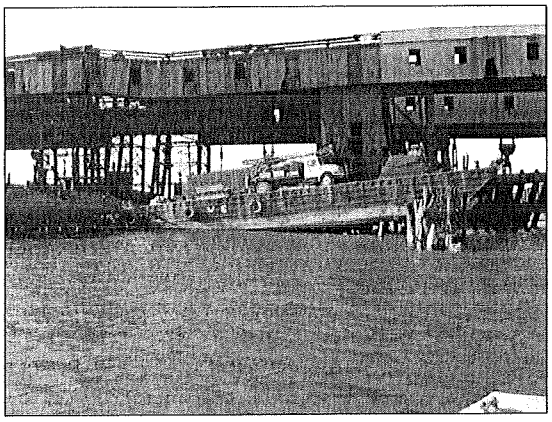
Before Storm Sand Surge 1



During Storm Sandy Surge 3



After Storm Sandy Surge 2



After Storm Sandy Surge - Barge Impact Area 4

Figure 3a
NYNJR Storm Sandy Damage

9.26.13

Figure 3b
Greenville Yard and Lift Bridge Before Storm Sandy

9.26.13

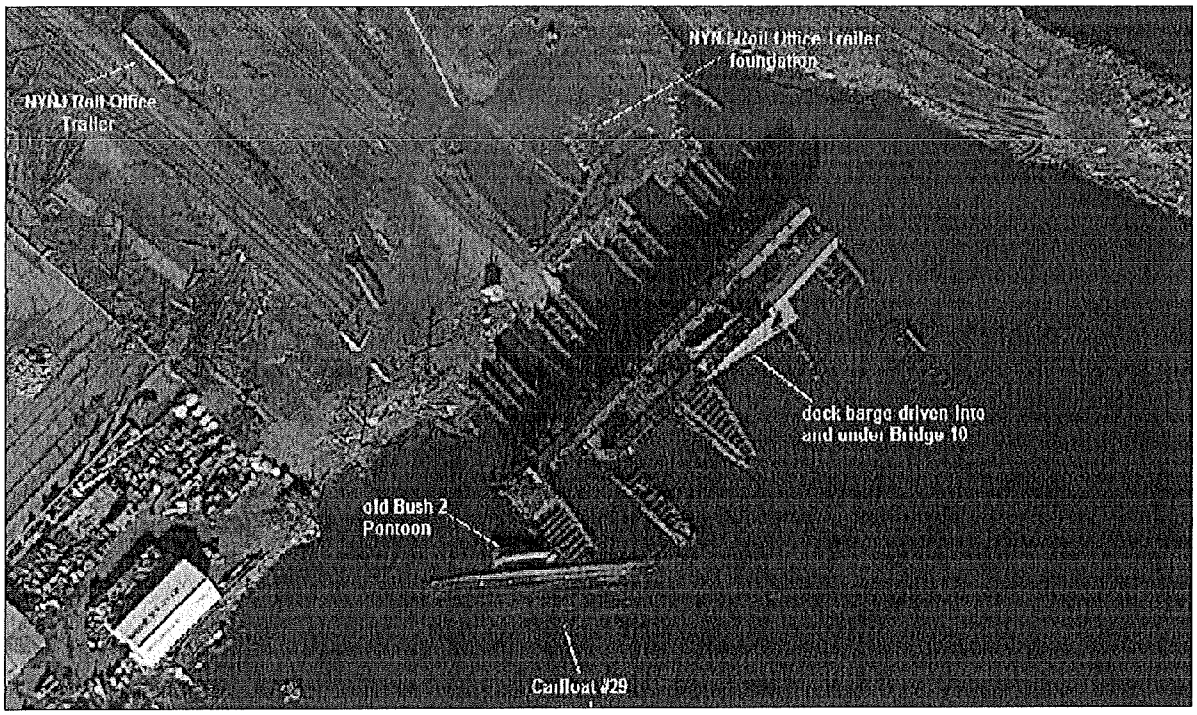
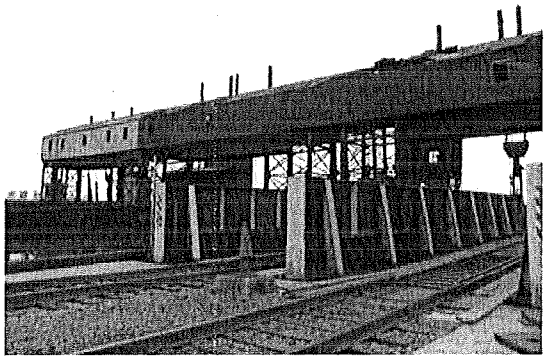
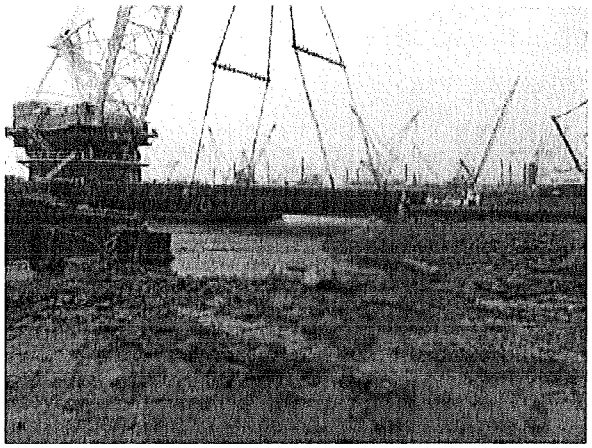


Figure 3c
Greenville Yard and Lift Bridge After Storm Sandy

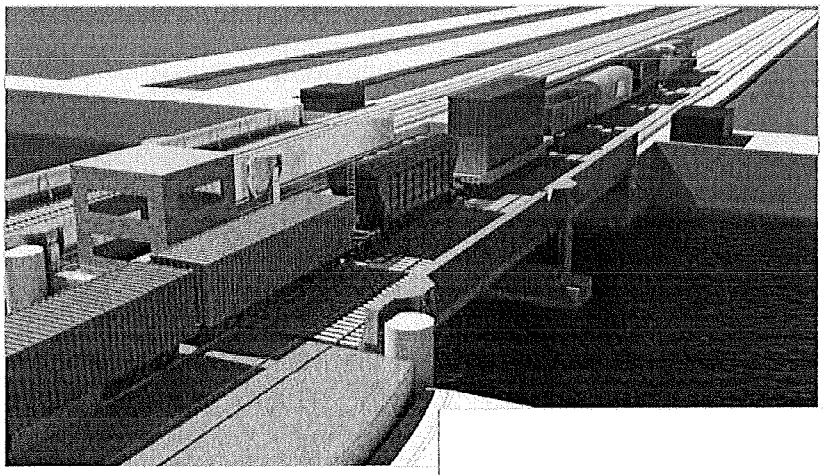
Cross Harbor Freight Program
Contract #9 -Bridge 10
Design Presentation
May 2, 2013





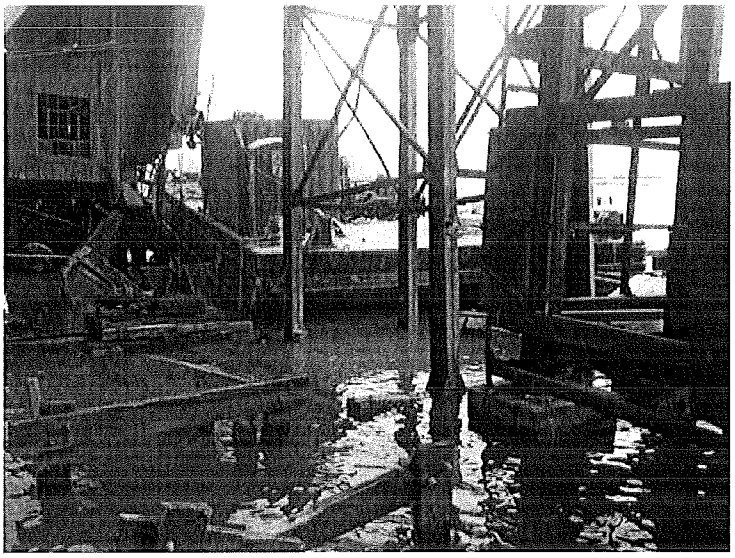
Agenda

- Project Overview
- Bridge Design
  - Structural
  - Mechanical
  - Electrical
- Control House Design
- Foundation Design
- Fenders Design
- Open Items



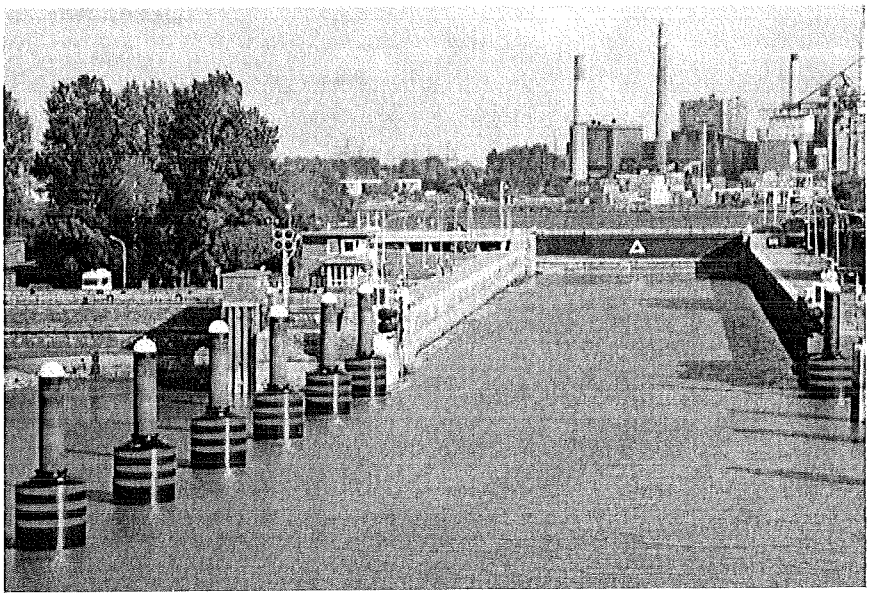
Project Overview

- Existing Transfer Bridges Damaged by Hurricane Sandy
- Temporary Pontoon Bridge Constructed as Stop Gap
- Bridge 10 to be Designed on Fast Track



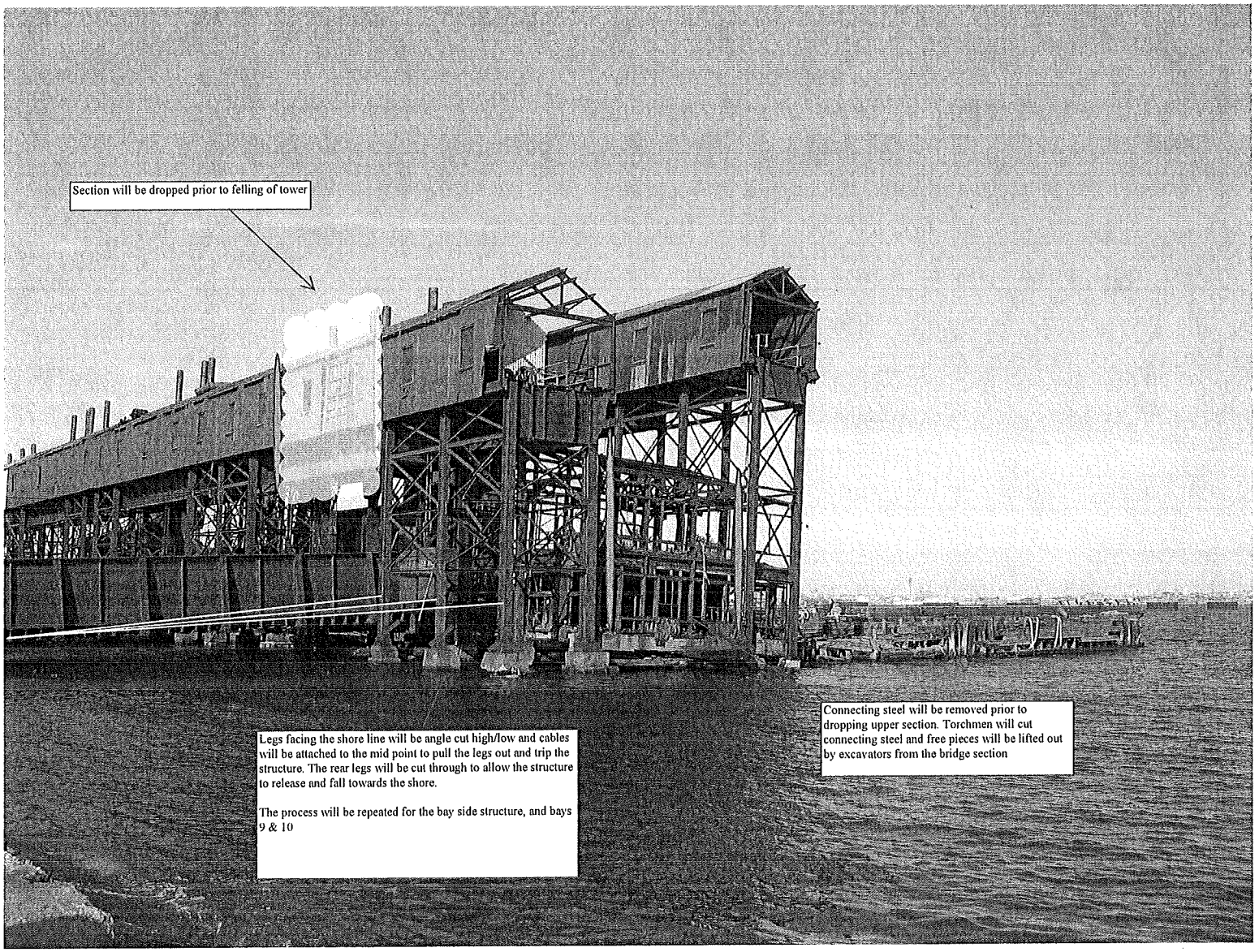
Fender Design

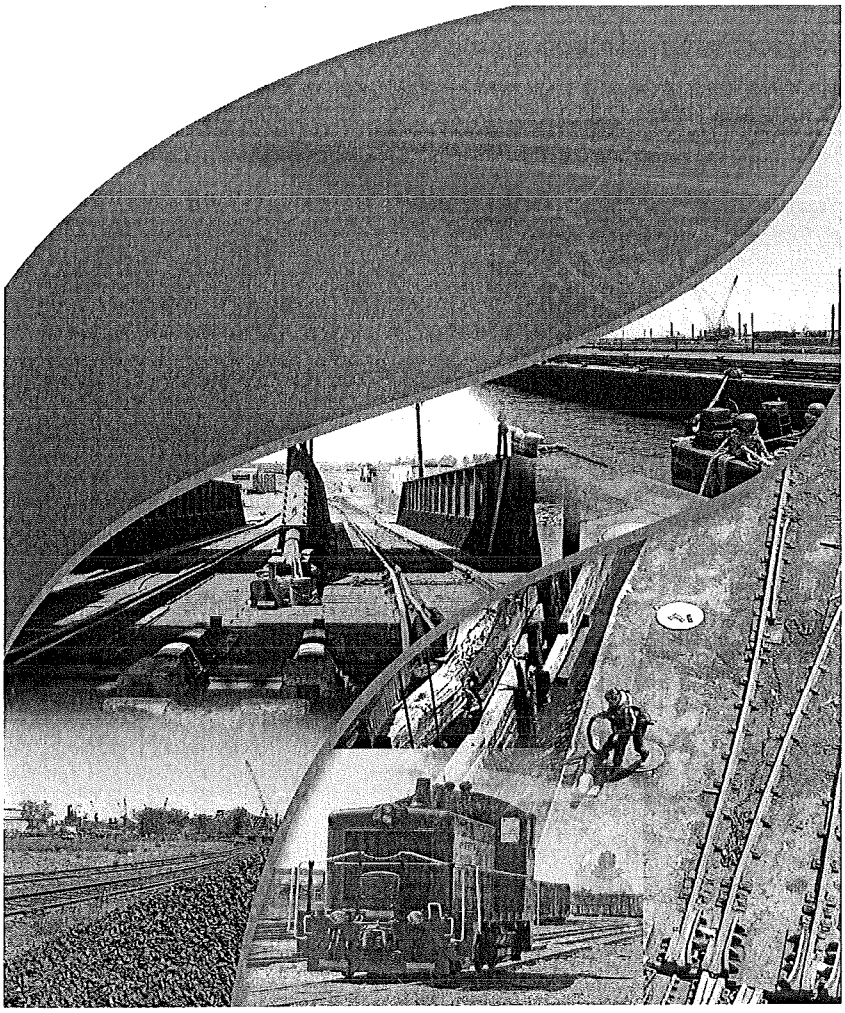
- Simple system of mooring and berthing dolphins.



Open Items

- Will Bridge 9 be built?
- Will Bridge 9 be controlled from Control House?
- Temporary Power Requirements?
- Should Track on Bridge be included in yard work?
- Security/ Fire / CCTV Requirements?


Section will be dropped prior to felling of tower
Legs facing the shore line will be angle cut high/low and cables will be attached to the mid point to pull the legs out and trip the structure. The rear legs will be cut through to allow the structure to release and fall towards the shore.
The process will be repeated for the bay side structure, and bays 9 & 10
Connecting steel will be removed prior to dropping upper section. Torchmen will cut connecting steel and free pieces will be lifted out by excavators from the bridge section



THE PORT AUTHORITY OF NY & NJ

Greenville Yard

Cross Harbor Freight Program

Design Development Report
50% Submission

Contract No. 5 –
Demolition of Bridges #9, 10, & 12

Prepared by
HDR Engineering, Inc.
1037 Raymond Blvd
1 Riverfront Plaza 14th Floor
Newark, NJ 07102

February 17, 2012

PID# 10197000

Contents

Executive Summary

Introduction

This Design Development Report (DDR) for Contract 5-Demolition of Bridges #9, 10, &12 is one of ten Contract DDRs to restore operations and improve capacity of the Cross Harbor Freight Program at Greenville Yard. The DDR involves the design development of all involved engineering discipline components involved in the work required to remove Bridges Nos. 9, 10, &12. The DDR includes drawings technical evaluations, calculations, construction cost estimates, construction schedules and staging plans, The DDR provides coordination between the work for all involved disciplines and will resolve discrepancies for final approval by the Port Authority of New York and New Jersey. Furthermore the DDR will coordinate and resolve issues between the design development for Contract 5 and the design development for Contracts 1 through 4 and Contracts 6 through 10.

Electrical

The Electrical section discusses the demolition options for the electrical systems. The discussion includes the equipment in the bridge and apron gantries, equipment in the control houses, and other electrical equipment, such as winch motors and exterior lighting. The electrical section discusses electrical components that require special attention during the demolition and electrical components to be salvaged, if required.

Mechanical

The Mechanical section discusses the demolition options for the mechanical equipment. The discussion includes the equipment in the bridge and apron gantries, equipment in the control houses, and other mechanical equipment, such as lift screws and reducers. The mechanical section discusses mechanical components that require special attention during the demolition and mechanical components to be salvaged, if required.

Structural

The Structural section discusses the demolition of the transfer bridges, gantries, control houses and other ancillary structures. The structural section discusses the staging of the work and provides support details required for other disciplines.

Geotechnical

The Geotechnical section discusses pile and fender system removal options.

Environmental

The Environmental section discusses the hazardous materials that are present at Bridge Nos. 9, 10, and 12; and the remediation that would be required. The environmental section also discusses the impact that the hazardous materials have on the work in other disciplines. This section also discusses the permitting issues.

Construction Cost Estimate

A Construction Cost Estimate is included for each discipline with a summary of the total estimated construction cost.

Construction Schedule and Staging

The Construction Schedule and Staging section provides a detailed construction schedule that takes into account the staging requirements for Contract 5.

Chapter 1 - Contract Overview

1.01 Program Overview

Greenville Yard is the western terminus of the current railcar float (barge) system, which operates between Jersey City and Bush Terminal on the Brooklyn waterfront. The barge system that moves goods across the New York Harbor has been in existence since before the growth of the national highway system and before the construction of vehicular bridges spanning the Hudson River. The Cross Harbor rail freight operation at Greenville Yard once encompassed six rail transfer bridges, as many as thirty-nine rail barges, and upland rail support facilities. Today only one remaining transfer bridge structure (Bridge No. 11) is operational in Greenville Yard. Transfer Bridge Nos. 9, 10 and half of 12 are still standing but inoperable. Transfer Bridge No. 11 is in need of immediate repairs to the structural, mechanical, electrical, and fender systems in order to ensure its continuing operational reliability. The system currently operates with Bridge No. 11 and Barge No. 16. Barge No. 29, which is currently docked at Greenville Yard, is in need of repairs before it can be placed back into service.

The operator of the railcar float system is New York New Jersey Rail, LLC (NYNJ Rail), a switching and terminal railroad owned by the PANYNJ since November 2008. Since freight trains are not allowed in Amtrak's North River Tunnels, and the Poughkeepsie Bridge was closed in 1974, the ferry is the only freight crossing of the Hudson River south of the Alfred H. Smith Memorial Bridge, 140 miles to the north of New York City. The Cross Harbor rail freight operation is the last remaining car float operation in the Port of New York and New Jersey.

Ultimately, the Greenville Yard area will contain three distinct rail transfer sections: an Intermodal Container Transfer Facility (ICTF) to support the Global Terminal operations at Port Jersey Peninsula, a barge-to-rail container transfer facility, and an expanded Cross Harbor Rail Freight Program (CHFP).

Under its CHFP, the PANYNJ, with funding from the Federal Highway Administration (FHWA), is redeveloping the Greenville Yard in Jersey City as required to increase the amount of freight moved by rail; thereby reducing the region's dependence on trucks. The major goal of the CHFP is to improve goods movement by rail across New York Harbor.

This program is divided in to the following ten (10) Contracts as follows:

- *Contract 1 – No. 11 Bridge and Slip Repairs*

  Contract 1 includes all of the work required to bring Bridge No. 11 and Slip No. 11 to a safe operating state with a reliable service life of seven (7) years. Due to the poor condition of the existing Transfer Bridge 11 structure, emergency monitoring, temporary and shoring repairs are required. These emergency repairs are a subset of Contract 1 "Repair of existing transfer Bridge No. 11 and existing fender system for Slip No. 11". These repairs will remain in place and supplement the original scope repairs performed under Contract 1 work as applicable.

- *Contract 2 – Rehabilitation of Barge No. 29*

  Contract 2 includes all of the work required to bring Barge No. 29 to an operational state and provide safe and continued operation of Barge No. 29.

- *Contract 3 – Support Tracks for Transfer Bridge No. 9*

  Contract 3 includes all of the work required to construct new railroad tracks to Bridge No. 9, the construction of two new prefabricated trailers for site personnel, and required yard improvements including drainage, lighting, and other utilities.

- *Contract 4 – Off-Site Tracks (Tropicana) and Reconfigure "A" Yard Tracks*

  Contract 4 includes all of the work required to construct new lead in track to the Tropicana site and connections to A Yard.

- *Contract 5 – Demolition of Bridge Nos. 9, 10, and 12*

  Contract 5 includes all of the work required to demolish Bridge Nos. 9, 10, and 12. This work will be combined with Contract 1 emergency shoring due to the connection of all bridge gantries. Shoring work for the Apron Gantry at Bridge No. 11 which is to be done under Contract 1 must be in-place prior to the demolition of adjacent gantries.

- *Contract 6 – Transfer Bridge No. 9 (Pending)*

  Contract 6 includes all of the work required to construct a new transfer Bridge No. 9, new fenders for Bridge No. 9, and all dredging required for barge operations from the new bridge. No work is proceeding at this time.

- *Contract 7 – New Barge*

  Contract 7 includes all of the work required to construct a new railcar barge to be used at all NYNJ Rail locations. A new barge capacity study is underway at this time.

- *Contract 8 – Tracks for Transfer Bridge No. 10 (Pending)*

  Contract 8 includes all of the work required to construct new railroad tracks to Bridge No. 10. No work is proceeding at this time.

- *Contract 9 – Transfer Bridge No. 10 (Pending)*

  Contract 9 includes all of the work required to construct a new transfer Bridge No. 10 and new fender system for Bridge No. 10. No work is proceeding at this time.

- *Contract 10 – Demolition of Transfer Bridge No. 11 (Pending)*

  Contract 10 includes all of the work required to demolish Bridge No. 11. No work is proceeding at this time.

The HDR team was authorized to proceed with Contracts 1 thru 5 in September 2011. The HDR team was authorized to proceed with Contract 7 on January 12, 2012. As additional contracts are authorized, this report will be updated and further developed.

1.01 Contract Scope

At the Greenville Yard facility, there are four bridge structures: Bridge Nos. 9, 10, 11, and 12. Bridge No. 11 is the only operational bridge at this time. The bridge structures at Greenville Yard are currently connected together through the gantry structure. These structures have begun to degrade at a rapid rate. The bridge structures must be removed to make way for the new bridge structures. The structures and foundations have degraded to a point where the repair or removal of these structures is time critical.

An emergency shoring design is underway for the gantry structure at Bridge No. 11. The development of this shoring design will provide analysis data required to separate the Bridge Nos. 9, 10, and 12 gantry structures and allow subsequent demolition. Bridge No. 11 must be maintained during this demolition since it is currently the only operating transfer bridge, and demolition work must not affect the useful life of Bridge No. 11.

The scope of Contract 5 is to completely remove Bridge Nos. 9, 10, and 12. As part of the removal of these bridges, the following will be required:

- Hazardous and regulated materials assessment and remediation, if necessary.
- Removal of Bridge Nos. 9, 10, and 12.
- Coordinate with separate PA consultant on NJSHPO requirements on the demolition and removals.
- Provide contract documents.
- Provide post award services.

Chapter 2 - Field Evaluation

2.01 Electrical

2.01.01 General

The electrical field evaluation of Bridge Nos. 9, 10, and 12 was conducted on January 31, 2012. Photos from the field evaluation can be found in Appendix G.01.

The circuits could not be traced within the control house for Bridge Nos. 9 and 10; however, it appears that all wiring originated from each shared control house. There were no aerial conductors to the control house for Bridge Nos. 9 and 10 (see Photo G.01.01) and no conduit entering the bottom of the control house; therefore, it is inferred that there was no power to the circuits for these bridges.

A weatherhead with disconnected conductors was identified on the exterior of the Bridge No. 9 gantry towards the shore, which may have been an incoming source of power for lighting or other circuits (see Photo G.01.02). It is thought that this was not the main incoming power line due to the small conductors within the weatherhead. Similar conductors were also identified for Bridge Nos. 10 and 12 (see Photos G.01.03 and G.01.04).

There were aerial incoming power conductors to the Bridge No. 11 gantry and the control house for Bridge Nos. 11 and 12. All equipment within the control house for Bridge Nos. 11 and 12 will be removed as required during Contracts 1 and 10. However, this source of power must be confirmed to be completely isolated from Bridge No. 12.

2.01.02 Bridge Gantry

All accessible locations within the bridge gantry were inspected. Each bridge appeared to have circuits separate from the other bridges. Items such as lights and outlets, which could have been considered a common circuit throughout the gantry or could have originated from the same conduit from the shared control houses, appeared to have separate origins from separate conduits.

Bridge No. 9 contained one complete bridge drive motor (see Photo G.01.05) and one partial bridge drive motor (see Photo G.01.06) in the bridge gantry. Both motors were disconnected with conductors visibly severed and wrapped with electrical tape, with nine conductors for each motor (see Photo G.01.07). Four lever arm limit switches were located on the machinery (see Photo G.01.08) as well as a rotary cam limit switch, all of which had been abandoned. One lever arm limit switch cover was removed, and two connected conductors could be seen within the limit switch (see Photo G.01.09). The rotary cam limit switch cover was removed; revealing eight connected contacts (see Photo G.01.10). Three light fixtures that were missing light bulbs were identified within the bridge gantry (see Photo G.01.11), with another potential light location where the conduit was removed and only dangling wires remained (see Photo G.01.12), for a total of four lights within the bridge gantry. Two outlets were also identified, but they had been abandoned and were interpreted to be non-functional (see Photo G.01.13).

Bridge No. 10 contained two complete bridge drive motor and brake assemblies (see Photo G.01.14). These assemblies were completely disconnected (see Photo G.01.15), with nine conductors for each motor and three conductors for each brake. Four lever arm limit switches were located on the machinery, all of which had been abandoned (see Photo G.01.16). These limit switches were completely enclosed, so the number of conductors within the conduit to these limit switches is unknown. Because the limit switches appear to be similar to those on Bridge No. 9, it is assumed that each limit switch had two conductors. Three light fixtures were identified within the bridge gantry. Two of the light fixtures were missing light bulbs, and the third light was not lit (see Photo G.01.17). Three outlets were also identified, but they had been abandoned and were interpreted to be non-functional (see photo G.01.18).

Bridge No. 12 contained one partial brake (see Photo G.01.19), and all motor and brake conductors were disconnected (see Photo G.01.20). Four lever arm limit switches were located on the machinery (see Photo G.01.21) as well as a rotary cam limit switch, all of which have been abandoned. The lever arm limit switches were completely enclosed, so the number of conductors within the conduit to these limits switches is unknown. Because the lever arm limit switches appear to be similar to those on Bridge No. 9, it is assumed that each limit switch has two conductors. The rotary cam limit switch cover was removed, revealing six connected contacts (see Photo G.01.22). Three light fixtures that were missing light bulbs were identified within the bridge gantry (see Photo G.01.23). One outlet was also identified, but it had been abandoned and was interpreted to be non-functional (see Photo G.01.24).

For additional information regarding equipment within the bridge gantry, see 2.02 Mechanical.

2.01.03 Apron Gantry

The apron gantry was not closely inspected. Due to the lack of as-built drawings and inaccessibility of the apron gantry, the number of lights for the apron gantry is assumed to be a similar quantity as those in the bridge gantry. Each apron is assumed to have three light fixtures, for a total of twelve light fixtures within the apron gantry for Bridge Nos. 9 through 12. It is assumed that none of the lights for Bridge Nos. 9 and 10 are powered because all power most likely originated from the control house, which is cut off from any utility power source.

For additional information regarding equipment within the bridge gantry, see 2.02 Mechanical.

2.01.04 Bridge Nos. 9 and 10 Control House

The control house for Bridge Nos. 9 and 10 was not closely inspected. Three control desks could be seen within the control house for Bridge Nos. 9 and 10 (see Photos G.01.25 and G.01.26). The other components within the control house could not be quantified due to inaccessibility and lack of as-built drawings, but it is assumed that the following items are located within the control house: two wall heaters, four outlets, five light fixtures, six switches (including light switches and disconnect switches), two panelboards, two fuse boxes, two transformers, two sets of motor control equipment (one set for each bridge), twenty-four resistor banks, and two electrical cabinets. These are similar quantities as those that are in the control house for Bridge Nos. 11 and 12.

Eight conduits exited the control house for Bridge Nos. 9 and 10 to the bridge gantry. Four conduits exited the control house from the side near Bridge No. 9 (see Photo G.01.26), two conduits exited the control house from the side near Bridge No. 10, and two conduits exited the control house near the center (see Photo G.01.27). It is unknown what loads were carried within each conduit. However, it is inferred that all incoming utility power to the control house and all power, control, and lighting circuits to the bridge gantry were carried through these conduits.

Other conduits exited the control house for the electrical control stations and lighting circuits around the structure and to the apron gantry. These conduits were supported on various structural elements.

2.01.05 Winch Motors

Two winch motors were located on the structure for Bridge No. 10 (see Photos G.01.28 and G.01.29). One winch motor was seen for Bridge No. 12 (See Photo G.01.30); it is assumed the second winch

motor was underwater. The expected locations of the winch motors for Bridge No. 9 had no winch motors secured in place; these motors may also be located underwater.

For additional information regarding equipment within the bridge gantry, see 2.02 Mechanical.

2.01.06 Exterior Light Fixtures

Light fixtures and conduits were identified on each bridge. Bridge No. 9 had two light fixtures for the bridge area (see Photo G.01.31), Bridge No. 10 had three light fixtures in the bridge area (see Photos G.01.31 and G.01.32), and Bridge No. 12 had one light fixture in the bridge area (see Photo G.01.33). Lights for the barge area of Bridge No. 9 could not be identified, but Bridge Nos. 10 and 12 each had one light fixture in their respective barge areas (see Photos G.01.30 and G.01.34), so it is assumed that there is a light fixture in the Bridge No. 9 barge area as well.

2.01.07 Electrical Control Stations

On the exterior of the structure, there were at least four electrical control stations for Bridge No. 10. Two electrical control stations were for the winch motors, with one for each winch (see Photo G.01.35). The purpose of the remaining two electrical control stations is unknown, but may have been lighting controls or outlets (see Photos G.01.36 and G.01.37). It is assumed that Bridge Nos. 9 and 12 also had a similar number of winch motor control stations for any remaining winch motors and miscellaneous electrical control stations.

2.02 Mechanical

2.02.01 General

On January 31, 2012 an HDR mechanical inspector visited the project site to perform a visual inspection and make field evaluations of the mechanical equipment contained in Bridge Nos. 9, 10 and 12. The field inspection showed that the operating machinery for these transfer bridges is in poor condition and has been abandoned.

The operating machinery design in the bridge gantries is similar for Transfer Bridge Nos. 9, 10, and 12. Each transfer bridge was constructed with two bridge drive motors. Each motor was equipped with a rear shaft extension for a thrustor style motor brake. The drive shaft off of each motor is connected to the primary gear reducer. In contrast to the helical gears on Bridge No. 11, the gears on Bridge Nos. 9, 10, and 12 were designed as straight spur gears. The output of the primary gear reducer drives four lifting screws which raise and lower the transfer bridges. The lifting screw system consists of four lift screws and four worm gear reducers per bridge. A number of limit switches were observed on the operating machinery for these bridges. See electrical section of this report for detailed condition statements on limit switches.

The apron gantries on all of the transfer bridges contained a series of counterweight ropes, sheaves, and sheave bearings, which serve to counter the dead load of the apron.

Other miscellaneous mechanical equipment located outside of the gantries is also outlined in this report.

2.02.02 Bridge Gantry

Bridge No. 9 contains two partial drive motors. The remains of the north motor are bolted to its support and are coupled to the bridge drive machinery (See Photo G.02.01). The south motor has been unbolted from its support, and has physically been turned ninety degrees so that the drive shaft is facing east (See Photo G.02.02). The south motor brake has been removed, as well as the main drive pinion. Bridge No. 9 currently contains partial machinery supports for motor brakes, previously coupled to the span drive motors (See Photo G.02.03), but there are no complete brake assemblies present. The south pinion on Bridge No. 9 is currently missing (See Photo G.02.04), while the north gear reduction set is complete. The north gear housing is complete, but the top half of the south gear reducer has been removed and placed on the structural steel supporting the counterweight sheave bearings (See Photo G.02.05). Both of these gear housings contain gear lubricant. Lifting screws and worm reducers on this transfer bridge are all intact. The worm reducers have been abandoned and contain old contaminated lubricant. As a result, the lead screws and the worm gears are dry and covered in a layer of dirt and debris (See Photo G.02.06). The caps bolts on the bearings supporting the lead screws are generally loose or missing. All line shafting, drive bearings, and couplings are present and are generally unpainted, having light corrosion. Many of the cap bolts are loose or missing on the drive bearings.

Bridge No. 10 contains two drive motors which remain coupled to the span drive machinery (See Photos G.02.07 and G.02.08). The motors have been exposed to the elements due to the lack of a roof over the machinery house. As a result there is a moderate level of corrosion covering this set of motors. There are two thrustor brakes which currently are assembled with their respective bridge drive motors and in poor condition. They display moderate corrosion and are covered in a layer of dirt and debris. Bridge No. 10 has two primary gear reducers which contain gear lubricant (See Photo G.02.09). Lift screws and worm reducers on this transfer bridge are all intact but are in poor condition. The worm reducers do not contain lubricant, and are dry and covered in a layer of dirt and debris (See, Photo G.02.10). Most of the bearing caps on these worm reducers have been completely removed and are missing (See Photo G.02.11). All line shafting, drive bearings, and couplings are present and are generally unpainted with light corrosion. The drive bearing adjacent to the south drive motor on this bridge is missing its cap. Many of the cap bolts are loose or missing on all bearings.

There are no motors present in the bridge gantry of Bridge No. 12. The bridge contains only parts of the motor brakes and brake frames (See Photo G.02.12). One brake drum is on the floor of the machinery house near the north end of the bridge drive machinery (See Photo G.02.13). One of the remaining frames has a thrustor cylinder (See Photo G.02.14). Both gear reducer housings are complete, but the pinions were removed with the motors (See Photos G.02.15 and G.02.16). The worm reducers on Bridge No. 12 contain a mixture of old lubricant and water. This water infiltration has led to a layer of light corrosion on the contact face of each lifting screw (See Photo G.02.17). All line shafting, drive bearings, and couplings are present and are generally unpainted with light corrosion throughout.

The counterweight ropes, sheaves, and bearings are present in each of the three transfer bridges. Each bridge contains sixteen (16) counterweight sheaves, eight (8) counterweight ropes, and sixteen (16) sheave bearings. The counterweight ropes on each of these bridges show no signs of recent lubrication. Most of the sheaves have rope corrugations worn into the grooves (See Photo G.02.18). The bearings typically have large clearances. The only condition that was observed that was not typical to all bridges was that many of the mounting bolts have been removed from the northern most sheave bearings on Bridge No. 9 (See Photo G.02.19).

2.02.03 Apron Gantry

The apron gantry was not closely inspected due to inaccessibility. It is assumed that the apron gantry machinery of Bridge Nos. 9, 10 and 12 are similar in quantity and condition to the machinery contained in Bridge No. 11 (See Photo G.02.20). The quantities observed during the field inspection of Bridge No. 11 revealed that there were sixteen (16) sheaves, four (4) counterweight ropes, and twenty-two (22) sheave bearings. The counterweight ropes on Bridge No. 9 are still present and the connections with the counterweights are still intact. Even with the absence of an apron on Bridge No. 12 and the fact that there are no rope connections present on Bridge No. 10, remnants of the apron counterweight and operating ropes are present on all transfer bridges. Ropes still hang from the sheaves even though the ropes appear to have been broken for several years.

2.02.04 Apron Struts

Only Bridge 12 contains an apron strut (See Photo G.02.21). The cylinder is present on this bridge despite the lack of an apron connected to the transfer bridge. Bridge No. 9 currently has no apron strut. The apron is being supported solely by the counterweights. Bridge No. 10 has no apron strut, and the apron is submerged in the water (See Photo G.02.22).

2.02.05 Apron Operating Machinery

Components of the apron operating machinery in the form of bearings, gearing, and operating rope drums are present east of the operator's house between Bridge Nos. 9 and 10 (See Photo G.02.23). This operating machinery was not observed on Bridge No. 12.

2.02.06 Electric Winches

Three electric winches were observed during the course of the field inspection. Two electric winches are located on the fender system adjacent to Bridge No. 10 (See Photos G.02.24 and G.02.25). One is located north of the apron and one is located south of the apron. The other winch is located on the fender south of Bridge No. 12 (See Photo G.02.26).

2.02.07 Hand Winches

Parts of the hand winches for Bridge No. 9 are still located on the apron structure, but all that remains of them are the machinery bases (See Photo G.02.27). The winches have been removed. The winches for Bridge No. 10 could not be located because the apron is submerged at the location where the winches are mounted. Bridge No. 12 does not have winches since the apron is no longer attached to the transfer bridge.

2.02.08 Lock Bars

Each apron was designed with four (4) lock bars to connect the apron to a barge during loading operations. Components of lock bars are present on the apron for Bridge No. 9. The lock bar guides are present, but there are no lock bars (See Photo G.02.27). The lock bars for Bridge No. 10 could not be located because the apron is submerged at the location where the lock bars are mounted. Bridge No. 12 has no lock bars, since the apron structure is missing.

2.03 Structural

2.03.01 General

The field evaluation of Bridge Nos. 9, 10, and 12 was conducted on January 31, 2012. Photos from the field evaluation can be found in Appendix G.03.

The inspection was focused on documenting the quantities for removal and determining issues that may arise from the demolition of the structural components. Some of the facility is inaccessible and could only be inspected from a distance. The areas that are inaccessible are the Apron Gantry; Bridge Nos. 12, 10, and 9; the control house for Bridge Nos. 9 and 10; and the steam pump house at the base of the Bridge No. 12 apron gantry's columns.

2.03.02 Bridge Gantry

The bridge gantry consists of two rooms, which are 150' long by 15' wide for a total of 300' long, and contain the electrical and mechanical equipment to raise and lower the four transfer bridges. Currently, Bridge No. 11 is the only one in operation. The floor beams are supported by columns on either side of each transfer bridge and is located approximately 30' above the column foundations (See Photo G.03.01). The two rooms' roofs are constructed from sheeting supported by trusses. Approximately 50% of the roof sheeting is broken away. The trusses are supported by steel framing which also support the wall sheeting. Approximately 25% of the wall sheeting is missing. The walkways are covered by steel plate in Bridge Nos. 10, 11, and 12. Bridge No. 9 has a concrete floor. The openings in the floor are protected by hand railing.

The longitudinal floor beams span across each bridge and frame into the tower columns. There are four per bridge. The two western beams support the counterweight machinery. The two eastern beams support the operating machinery (screw jacks, motors, gearing, etc.).

The tower columns are built up members that run from the gantry floor beams to the foundations. The columns are braced back into the adjacent columns with angles. The north side of the Bridge No. 9 gantry is supported by four braced columns (See Photo G.03.02). The south side of Bridge No. 9 gantry and the north side of Bridge No. 10 gantry share supports. They are supported by six braced columns (See Photo G.03.03). The south side of Bridge No. 10 gantry is supported by four braced columns along with the north side of Bridge No. 11 (See Photo G.03.04). The south side of Bridge No. 11 gantry and the north side of Bridge No. 12 gantry share supports. They are supported by six braced columns (See Photo G.03.05). The south side of Bridge No. 12 gantries and the north side of Bridge No. 13 gantry share supports, but Bridge No. 13 has previously been removed. They are supported by six braced columns (See Photo G.03.06).

2.03.03 Apron Gantry

The apron gantry consists of two rooms, which are 150' long by 11' wide for a total of 300' long, and contain the mechanical sheaves that support the four aprons and their respective sheaves. Currently, the Bridge No. 11 apron is the only one in operation and the apron 12 gantry has been removed along with the south apron gantry support columns. The floor beams are supported by columns on either side of each transfer bridge and is located approximately 40' above the column foundations (See Photo G.03.07). The two rooms' roofs are constructed from sheeting supported by trusses. Approximately 75% of the roof sheeting is broken away. The trusses are supported by steel framing which also support the wall sheeting. Approximately 25% of the wall sheeting is missing. The

walkways are covered by steel plate. The openings in the floor are protected by hand railing (See Photo G.03.08).

The longitudinal floor beams span across each apron and frame into the tower columns. There are two beams per apron which support the counterweight sheaves (See Photo G.03.09).

The tower columns are built up members that run from the gantry floor beams to the foundations. The columns are braced back into the adjacent columns with angles. The north side of the apron 9 gantry is supported by four braced columns. The south side of apron 9 gantry and the north side of apron 10 gantry share supports. They are supported by six braced columns. The south side of apron 10 gantry is supported by four braced columns along with the north side of the apron 11 gantry. The south side of apron 11 gantry and the north side of apron 12 gantry share supports. They are supported by six braced columns.

The apron gantry is currently leaning toward the east (toward the water) (See Photo G.03.10). The foundation of the apron 10 south tower columns have shifted south (toward apron 11 north tower columns) and therefore the columns are no longer vertically plumb (See Photo G.03.11).

2.03.04 Bridge Nos. 9, 10, and 12

Bridge Nos. 9 (See Photo G.03.013), 10 (See Photo G.03.14) and 12 (See Photo G.03.15) consist of three built up riveted through girders which support 48 two span continuous rolled steel floor beams. The bridge is supported on the land side by a concave pivot bearing which allows rotation so that the bridges can be raised and lowered. For dead load the bridge spans between the pivot bearing and the counterweights rope connection near the east end of the girders. For live load the bridge spans between the pivot bearing and the pin connection for the lifting screw at the east end of the girders. The counterweights and the lifting screws are supported from the overhead bridge gantry.

The bridges are in poor condition due to severe rust and scale with significant loss of floorbeam sections. There are large holes rusted through the floorbeams at many locations. Rails have been removed from bridge 9, and there are no timber walkways. Rails have been removed from Bridge No. 10, and there are scattered areas of wood debris on the bridge span. The end floorbeams at Bridge No. 10 have been distorted because of the unsupported end of apron (see section 2.03.05). Bridge No. 12 still has the rails present, but also has some wood debris on various areas.

2.03.05 Apron Nos. 9, 10, and 12

The three aprons consist of a timber deck supported by10 rolled steel stringers. For dead load the stringers span from the cantilevered pin connection at the end of the bridge span to the east end floorbeam. For dead load the east end floorbeam is simply supported by counterweight rope at either end. For live load the apron spans from the cantilevered pin connection at the end of the bridge span to the centerline of the lock bar receivers on the car float.

The Aprons are in poor condition due to the severe rust and scale with significant section loss at the apron stringers and end floorbeams. Apron No. 9 is still intact (See Photo G.03.16). Some of the stringers and the wooden deck are missing or damaged and the rails have been removed. The counterweights have been removed from the apron gantry at Bridge No. 10. Therefore the east end of the apron is unsupported and the apron has rotated so that the east end is submerged (See Photo G.03.17). The rails are still present at Apron No. 10. Apron No. 12 has been removed and the only remnants are the two center stringers that are attached to the apron strut (See Photo G.03.18).

2.03.06 Bridge 9 and 10 Control House

The control house is located between the bridge gantry and apron gantry, and between Bridge Nos. 9 and 10. It is supported by three beams that run from the bridge gantry tower columns to the tower gantry tower columns. The roof and walls are comprised of corrugated steel sheeting supported by steel framing attached to the gantry columns.

2.03.07 Abandoned Power House

There is an abandoned brick structure/building located to the south of Bridge No. 12 and east of the bridge gantry (See Photo G.03.18). It is thought that this structure may have housed machinery that generated steam power, although this has not been confirmed. It appears that the structure extended under what would have been the apron gantry on the south side of the Apron No. 12. It appears that structure was supported by the bridge gantry columns at the west end and the apron gantry columns at the east end. There may be supplemental pile supports between the bridge and apron gantry, but an underwater inspection has not been performed. . The building is constructed of brick and steel. The east side of the building appears to be sinking into the water, but is still above the water line. It doesn't appear that the building has any mechanical or electrical equipment inside, however this has not been confirmed at this time.

2.04 Geotechnical

The existing apron and bridge gantry tower columns of Bridge No. 11 are supported on individual concrete/granite block pedestals supported on interconnected, timber grillage and pile cap system supported on timber pile clusters. Pile clusters are concentrated beneath each column. The number of piles in each cluster varies from 6 to 20 timber piles, depending upon column load. Timber pile caps and horizontal bracing extend between piles to adjacent columns, connecting the timber substructure to each grouping of columns. The purpose of this type of construction limited differential settlement of the superstructure and helped distribute lateral load between clusters.

No Geotechnical inspection was done for Bridge Nos. 9, 10 and 12. However an underwater inspection of the of existing pile foundations between Bridge Nos. 10 and 12 was performed by Atlantic Engineering part of the HDR Team over several days between December 22, 2011 and January 6, 2012. The inspection was performed to determine the conditions of the foundations for Bridge No. 11. It can be assumed that similar conditions are present at Bridge Nos. 9, 10, and 12. The following is a brief summary of the findings at Bridge No. 11:

- Access in some areas is limited due to debris and/ or low clearance between the cap beam and mudline.
- The piles beneath pedestals 4,8,11,12,15,16 have been encased in a concrete block. These pedestals may be supported on helical piles that were installed in a previous stabilization effort (see field notes in Appendix F).
- The masonry portion of the pedestals is in fair condition with a few in satisfactory condition that have been encapsulated. The concrete exhibits some spalling and cracking. Stone masonry joints are missing pointing.
- All exposed timber members exhibit signs of significant marine borer damage and rot.
- The timber substructure grillage (12x12 and 6x12) are in poor to fair condition and exhibit 10% to 6% loss of section in some areas.
- The timber pile caps are in poor to fair condition and exhibit10% to 60% loss of section.
- The interior timber piles of several pedestals were inaccessible.

- Of the piles inspected, approx. 50% are in poor condition with significant marine borer activity and rot, 40% were in fair condition and 10% in satisfactory condition.

A photo inspection report is included in Appendix F.

2.05 Environmental

Field evaluation of Bridge Nos. 9, 10 and 12 found multiple suspect asbestos containing materials associated with the building structure itself, the slip fender system (creosote coating) , and within electrical components. The extent of the homogenous suspect materials were determined as was its quantity, condition and friability (ability to reduce to a powder by hand pressure). Certain areas or materials could not be sampled:

- Areas that were not accessible due to safety concerns (Apron Tower and Control House 9/10); and
- Components that were designated not to be disturbed but saved for display (power distribution panel and control consoles in Control House 9/10).

Materials were either presumed present from similar functional spaces or assumed asbestos from visual identification at a distance.

Laboratory analysis of suspect asbestos materials confirmed that the following materials are asbestos containing:

- Tar coated metal panels that comprise the walls and ceilings of Bridge and Apron Towers Nos. 10 and 12 and Control House 9/10 (including associated weight shafts that are enclosed);
- Flat washers that are a part of the wall and ceiling panel mounting hardware for the tar coated panels;
- Corrugated cement panels that comprise the walls and ceiling of Bridge and Apron Tower No. 9;
- Machine brake pads found in Bridge Tower No. 10;
- Internal Electrical Components of the Limit Switches of Bridge Tower No. 9 and 12;
- Window & door perimeter caulks found in Bridge No. 9 and 12; and
- Tar plugs over bolt heads on transfer bridge railroad ties on Transfer Bridge ramp No. 9.

The following components are assumed to contain asbestos:

- Electrical equipment components within the Main Power Distribution Panel, Control Consoles and wall electrical panels of Control House 9/10 (visible through windows but not accessible);
- Flat cement panels found below and in Control House 9/10 as ceiling and wall panels (visible through windows but not accessible); and
- Window perimeter caulks (visible through windows but not accessible).

During the field evaluation the fender system creosote coating was sampled for Poly Chlorinated Biphenyl content (PCBs) (in addition to being sampled for asbestos). These samples are composited samples (three samples combined from locations sampled for asbestos). Although laboratory analysis revealed detectable levels of PCBs, 0.97 parts per million (PPppm), it was less than the 50 parts per million (ppm) that would characterize the material as hazardous.

Field evaluation of Bridge Nos. 9, 10 and 12 noted several paints that are assumed heavy metal containing (lead primarily) due to the age of the structure and the high probability of containing heavy metals. The coatings noted are high visibility safety coatings such as yellow, orange and red on railings and /or doors. Factory pre-finished coatings such as gray and black on electrical cabinets and equipment within the Control Rooms and Towers were all assumed heavy metal containing. Bulk samples were collected to verify the lead content of the structural steel columns; it was confirmed between 10.22 and 22% lead by weight.

Chapter 3 - Design Alternatives

These alternatives were evaluated; do nothing, remove bridges Nos. 9 and 10, and remove bridges Nos. 9, 10, and 12. The Cross Harbor Freight Program contemplates the demolition of bridge No. 11 in the future. Based upon the planned demolition of bridge No. 11, it seemed logical to consider the demolition of bridge No. 12 at that time.

3.01 Alternative 1 – Do Nothing

3.01.01 Electrical

Alternative 1 requires no demolition work to be done on the transfer bridges or other structures. This is the least expensive option from an economic standpoint, as it requires no material or labor costs. It would require no removal of any motors, brakes, limit switches, light fixtures, outlets, motor control equipment, and other electrical equipment within the gantries and control houses and on the structure.

The issues regarding Alternative 1 are as follows:

- The electrical system for the transfer bridges is not officially documented with as-built drawings of the equipment currently installed. There may be live unidentified electrical power connected to the electrical equipment on these bridges. This electrical power could harm personnel who do not know that these items are powered even though Bridge Nos. 9, 10, and 12 are not in use or who are unaware of the danger of handling electrical equipment.
- Due to the poor condition of the structure, there is the chance of the bridge gantry structure collapsing. If this occurs, asbestos could be released into the air or water from the rotary cam limit switches and wiring insulation which contain these materials. Clean up of these hazardous materials after a collapse could be more expensive than staged demolition of all equipment with proper disposal techniques.
- Maintaining the structure in the current state would also not allow any electrical equipment within the control house for Bridge Nos. 9 and 10 to be historically preserved. Historical preservation of this equipment is a priority for PANYNJ and for NJHPO. The transfer bridges at the Greenville Yard are a unique set of infrastructure that have been historically important to the economy by providing a rapid method of transporting goods via rail across the Hudson River.
- Leaving the equipment in place may also lure vandals into the area. Much of the copper wiring, though containing insulation with asbestos, is still installed within the bridge gantry and potentially the control houses. The wiring could be alluring to vandals who wish to steal and sell the copper.

3.01.02 Mechanical

Alternative 1 requires no demolition work to be done on the transfer bridges or other structures. This alternative is the most cost-effective of the three alternatives presented. It would not require removal of any of the machinery located in the bridge or apron gantries, or any of the ancillary equipment located outside of these structures.

The issues regarding Alternative 1 are as follows:

- If the structure is left abandoned and unattended to, it is unknown how long it will remain standing. There is a risk that the structure will fail based on its present condition and anticipated continued deterioration, especially under load of the counterweights. Future weather events may accelerate this deterioration.
- Leaving the existing structure in place without removal of any mechanical components may interfere with the future construction of new transfer bridges which will replace the existing ones.
- Maintaining the current structure with mechanical components intact would not allow for the salvage or historical preservation of any of these items, and would only lead to further deterioration of the existing machinery.
- The collapse of the existing structures could have a significant environmental impact due to the presence of lead paint, asbestos and old lubricants in the mechanical components. The environmental remediation cost of a structural failure could be significant.

3.01.03 Structural

Alternative 1 intends that no demolition work be done to the structure of the facility.

The advantage to this is that there will be no construction cost towards this contract.

One of the main disadvantages is that Bridge Nos. 9 and 10 are intended to be replaced with two new transfer bridges. This work cannot begin until most of the existing structure around Bridge Nos. 9 and 10 are removed. The other disadvantage is that the structure is in poor condition and could possibly fall over if the structural members here to deteriorate more. This is a safety concern for operators and maintenance workers attending to Bridge No. 11.

3.01.04 Geotechnical

This alternative requires no work at this time. The existing pile foundations would remain in place until such time that New Transfer Bridge Nos. 9 and 10 will be constructed.

3.01.05 Environmental

Federal and State regulations require that any asbestos material that is impacted by proposed renovations must be removed prior to disturbance. The scope of this alternative is to leave the structure as is with no associated renovations. This seemingly would have no associated cost. However the structure is in disrepair and if it is to be utilized at all would require some renovations to be performed and therefore some asbestos materials to be removed.

Disturbance of heavy metal coating is federally regulated, specifically by OSHA Lead In Construction Rule 1926.62. If a heavy metal based coating is to be impacted in any way by proposed renovations, what is impacted is required to be done so in a manner not to cause an exposure and its waste must be properly handled and disposed of. The scope of this alternative is to leave the structure as is with no associated renovations. This seemingly would have no associated cost. However the structure is in disrepair and if it is to be utilized at all would require some renovations to be performed and could involve some coating disturbance.

This alternative requires no work at this time. The existing corrugated roof and wall panels do contain asbestos in the tar coating. The panel system is deteriorating at a rapid pace with panel sections

continuing to fall off of the structure. Therefore, from the environmental perspective doing nothing would not be considered as a viable option.

3.02 Alternative 2 – Remove Bridge Nos. 9 and 10

3.02.01 Electrical

Alternative 2 requires the electrical equipment used for Bridge Nos. 9 and 10 to be removed in order to accommodate building new transfer bridges where these bridges are currently located. This alternative will provide NJHPO with the equipment from the control house for Bridge Nos. 9 and 10, which will facilitate creating a replica of a control house as was originally used to operate the transfer bridges at Greenville Yard. The cost of this option is approximately $210,000. See Appendix B for detailed cost information.

Much of the electrical equipment may be removed using general demolition methods, which will require no special handling or other procedures, including eight lever arm limit switches, thirteen light fixtures in the gantries, five outlets, eight electrical control stations, seven light fixtures around the transfer bridge structure, and 1300 linear feet of conduit. This equipment is neither being preserved for historical purposes nor does it contain hazardous materials which require special removal methods. Some of the electrical equipment may contain a coating of lead paint, but the paint is not anticipated to be disturbed in a way which would require special handling. See Appendix A for locations of electrical equipment which may follow general demolition procedures.

The issues regarding Alternative 2 are as follows:

- All electrical equipment on Bridge Nos. 9 and 10 must be disconnected prior to demolition. This will ensure that all personnel are protected from any danger of handling live electrical equipment during demolition. Electrical equipment located in the control house which may have powered the bridge and apron gantries as well as any exterior lights and electrical control stations around the transfer bridge structure must be disconnected before any demolition work is performed. It is inferred that this equipment is already disconnected due to the condition of the control house and the equipment within the gantries and around the transfer bridge structure. However, all conduits must be traced and confirmed to be disconnected from all utility power and any other sources of electrical power. See Appendix A for locations of electrical equipment to be disconnected.
- The NJHPO Memorandum of Understanding (MoU) has not yet been finalized. However, the following items may be identified as required to be preserved within the control house: control desks, wall heaters, outlets, light fixtures, switches (including light switches and disconnect switches), panelboards, fuse boxes, transformers, motor control equipment, resistor banks, and electrical cabinets. These items must be protected during other stages of demolition prior to their removal as well as during their removal. Every effort must be made to preserve the integrity of the equipment until it is in the ownership of NJHPO. See Appendix A for locations of items to be preserved for NJHPO.
- Asbestos material has been identified in the rotary cam limit switch (which contain 18.2% Chrysotile asbestos) and approximately 5500 linear feet of insulated conductors. Most wire insulation was not tested for asbestos content. However, the wire insulation within the wall heaters in the control house for Bridge Nos. 11 and 12 contains 66.7% Chrysotile asbestos, and it is assumed that all other wire insulation has similar levels of asbestos. These items must be removed prior to all general demolition work by a qualified asbestos contractor and will require additional cost associated with their removal. See Appendix A for locations of electrical equipment containing asbestos.
- It is suggested that the historical items be removed before any other demolition work is performed to ensure that the historical equipment remains undamaged for preservation. If this historical equipment is not removed before other demolition (including removal of equipment with hazardous materials) is performed, the historical equipment must be protected to preserve the integrity of the historical equipment. It is important that equipment containing hazardous materials also be removed before any general demolition, although the equipment with hazardous materials may be removed after any historical equipment has been removed. Protective measures will be required to mitigate damage to the equipment containing hazardous materials by the removal of the historical equipment, as this equipment could create health hazards if it is disturbed.

3.02.02 Mechanical

Alternative 2 requires the mechanical equipment used for Bridge Nos. 9 and 10 to be removed in order to accommodate building new transfer bridges where these bridges are currently located. This alternative will also remove environmental hazards such as lead paint, asbestos and old lubrication from the structure. An added advantage to this alternative is that it will have a minimum impact on the current barge operations taking place on Bridge No. 11.

This alternative requires the removal of four span drive motors, four primary gear reducers, eight lifting screws, eight worm gear reducers, associated line shafting, bearings, and couplings, thirty-two counterweight sheaves, thirty-two sheave bearings, sixteen counterweight ropes, and eight counterweights from the bridge gantry. Removals from the apron gantries are estimated to be thirty-two sheaves, eight counterweight ropes, and forty-four sheave bearings. Ancillary equipment located on the aprons and adjacent fenders must also be removed. The cost of this option is approximately $360,000. See Appendix B for detailed cost information.

The issues regarding Alternative 2 are as follows:

- The cost associated with demolition of the mechanical components on these transfer bridges may increase due to the presence of hazardous materials. All gear boxes and any other equipment that contains lubricant will need to be thoroughly cleaned prior to removal. The assumed presence of lead paint on machinery and the presence of asbestos in the brake pads of Bridge No. 10 will increase the time and cost associated with demolition.
- Due to the level of deterioration of the mechanical components, some of the machinery has broken free of the structure and has been submerged under water. These components should be removed since they may interfere with future construction operations. The cost of full removal may increase due the need to locate and salvage some of the machinery.
- If it is anticipated that Bridge Nos. 9, 10, and 12 will eventually be removed the cost of mobilization will increase in choosing to demolish Bridge Nos. 9 and 10 at once, and delay the demolition of Bridge No. 12. If this alternative is chosen, the cost of mobilization of HAZMAT removal and demolition contractors will increase.

3.02.03 Structural

This alternative intends that Bridge Nos. 9 and 10 be removed along with all structural elements that support the bridges that would interfere with the construction of the two new transfer bridges, which are planned to be built under contracts 8 and 9. This alternative does not intend for Bridge No. 12 be

removed or the structural elements that support the bridge. The cost of this option is approximately $880,000. See Appendix B for detailed cost information.

The removal process will require the use of a barge crane and systematically remove components from the top of the structure down. The access between Bridge Nos. 10 and 11 in both the apron and bridge gantry will need to be blocked prior to any demolition of Bridge Nos. 9 and 10.

The roof sheeting and wall sheeting will need to be removed from both the bridge gantry and the apron gantry, which may contain asbestos (see 3.03.05 Environmental). The structural roof and wall framing will then be removed. The electrical and mechanical components will need to be removed prior to removing the gantry floor beams or tower columns (see 3.03.01 Electrical and 3.03.02 Mechanical). Once all of the components are removed the gantry floor beams can be removed. The columns may need to be supported during the floor beam removal. The Bridge Nos. 9 and 10 control house should be removed at this time after all abandoned electrical and mechanical equipment has been removed (see 3.03.01 Electrical and 3.03.02 Mechanical). Finally, all of the tower columns and the temporary supports will need to be removed.

The bridges can be removed prior to the gantries at the contractor's discretion. The counterweights for both the bridge and the apron must be removed prior to removing either the bridge or the apron. The bridge and the apron shall be temporarily supported prior to removal of the counterweights (see 3.03.02 Mechanical).

The advantage is that the structure is removed so that the new transfer bridges, that are planned to be built under Contracts 6 and 9, can be constructed without interferences. Another advantage is that it will be easier and less costly to wait and remove Bridge No. 12 if and when Bridge No. 11 is removed.

The disadvantage is that the cost is greater than Alternative 1.

3.02.04 Geotechnical

Assessment of the Geotechnical aspects of Alternative 2 will be included in subsequent submissions.

3.02.05 Environmental

Federal and State regulations require that any asbestos material that is impacted by proposed renovations must be removed prior to disturbance. The scope of this alternative is to the partial demolition of these structures; therefore impacted asbestos materials must be removed prior to the demolition of those structures. State and Port Authority notifications for asbestos removal are required.

Summary of Confirmed and Assumed Asbestos Containing Materials Impacted - Greenville Yard Transfer Bridge Nos. 9, 10

Activity	Notes	Location	Asbestos Material	Quantity	
Demolition Of Bridge Nos. 9, 10 and 12	Asbestos must be removed, only option is how much of the electrical is to be saved for display	Bridge & Apron Tower No.9 (Includes Transite Cement partition in Tower Bridge No. 12)	Corrugated Transite Cement Panels	6792	SF
			Window Frame Caulk	330 27	LF SF
		Bridge - Apron Towers &	Tar Coated Metal	9,983	SF
	purposes verses disposal	Covered Vertical Enclosures No. 9, 10	Panels		
			Panel Washers	49	SF
		Transfer Bridge No. 9 Ramp	Tar Plugs	8	SF
		Bridge Tower No. 10	Brake Pads	3	SF
		Control House 9/10	Assumed Electrical Removals	149 1335	SF LF
		Control House 9/10	Flat Transite Cement Panels	approx. 1195	SF
		Control House 9/10	Caulks	208 17	LF SF
		Bridge Tower No. 9	Misc Elect.	2	SF

The scope of this alternative is to partially demolish these structures, therefore the design options as they relate to heavy metal coatings are the same as any impact, removal of the paint coating. The same coatings are impacted, just a lesser quantity is impacted.

Summary of Confirmed & Assumed Heavy Metal Coatings - Greenville Yard Transfer Bridge Nos. 9, 10

Location	Fixture	Surface Color	Result (% Pb w/w)
Bridge & Apron Towers No. 9	Structural Steel Components	Black	10.22%
	Minor Steel Components -- Hand Rails	Black	10.24%
	Installed Components -- Machinery	Black	Assumed
Bridge & Apron Towers No. 10	Structural Steel Components	Black	22.00%
	Structural Steel Framing for Walls and Roof	Orange / Black	Assumed
	Installed Components --	Black	Assumed

Summary of Confirmed & Assumed Heavy Metal Coatings - Greenville Yard Transfer Bridge Nos. 9, 10			
	Machinery		
Control House 9/10	Wood Window Frames	Gray	Assumed
	Any Painted Surface		Assumed
Transfer & Fixed Bridge Nos. 9, 10	Steel Structure	Black	Assumed

3.03 Alternative 3 – Remove Bridge Nos. 9, 10, and 12

3.03.01 Electrical

Alternative 3 requires all electrical equipment on Bridge Nos. 9, 10, and 12 be removed. This alternative will provide NJHPO with the equipment from the control house for Bridge Nos. 9 and 10, which will facilitate creating a replica of a control house as was originally used to operate the transfer bridges at Greenville Yard. It will also remove all equipment which is not currently being used, except for equipment within the control house for Bridge Nos. 11 and 12 which will be removed during Contracts 1 and 10. The cost of this option is approximately $270,000. See Appendix B for detailed cost information.

Much of the electrical equipment may be removed using general demolition methods, which will require no special handling or other procedures, including twelve lever arm limit switches, nineteen light fixtures in the gantries, six outlets, twelve electrical control stations, nine light fixtures around the transfer bridge structure, and 2000 linear feet of conduit. This equipment is neither being preserved for historical purposes nor does it contain hazardous materials which require special removal methods. Some of the electrical equipment may contain a coating of lead paint, but the paint is not anticipated to be disturbed in a way which would require special handling. See Appendix A for detailed locations of electrical equipment which may follow general demolition procedures.

The issues regarding Alternative 3 are as follows:

- All electrical equipment on Bridge Nos. 9, 10, and 12 must be disconnected prior to demolition. This will ensure that all personnel are protected from any danger of handling live electrical equipment during demolition. Electrical equipment located in the control houses which may have powered the bridge and apron gantries and any exterior lights and electrical control stations around the transfer bridge structure must be disconnected before any demolition work is performed. It is assumed that this equipment is already disconnected due to the condition of the control house for Bridge Nos. 9 and 10 and the equipment within the gantries and around the transfer bridge structure. However, all conduits must be traced and confirmed to be disconnected from all utility power and any other sources of electrical power, particularly for power originating from the control house for Bridge Nos. 11 and 12. See Appendix A for locations of electrical equipment to be disconnected.
- The operation of cranes and other heavy machinery in the vicinity of Bridge No. 12 may interrupt barge operations for Bridge No. 11. Power may need to be shut down when the crane is in operation to remove equipment from Bridge No. 12 due to the power lines to Bridge No. 11 located close to Bridge No. 12. A power shut down which would render Bridge No. 11 inoperable. Staging would be required to perform removal operations of Bridge No. 12 only when there are no barge operations scheduled. Otherwise, there would be significant economic impact from disrupting the transport of goods between Greenville Yards and Bush Terminal in Brooklyn, New York.
- The NJHPO Memorandum of Understanding (MoU) has not yet been finalized. However, the following items may be identified as required to be preserved within the control house for Bridge Nos. 9 and 10: control desks, wall heaters, outlets, light fixtures, switches (including light switches and disconnect switches), panelboards, fuse boxes, transformers, motor control equipment, resistor banks, and electrical cabinets. These same items to be removed from the control house for Bridge Nos. 11 and 12 will be removed during Contracts 1 and 10. The items to be preserved from the control house for Bridge Nos. 9 and 10 must be protected during other stages of demolition prior to their removal as well as during their removal. Every effort must be made to preserve the integrity of this equipment until it is in the ownership of NJHPO. See Appendix A for locations of items to be preserved for NJHPO.
- Asbestos material has been identified in both rotary cam limit switches (which contain 18.2% Chrysotile asbestos) and approximately 8200 linear feet of insulated conductors. Most wire insulation was not tested for asbestos content. However, the wire insulation within the wall heaters in the control house for Bridge Nos. 11 and 12 contains 66.7% Chrysotile asbestos, and it is assumed that all other wire insulation has similar levels of asbestos. These items must be removed prior to all general demolition work by a qualified asbestos contractor and will require additional cost associated with their removal. See Appendix A for locations of electrical equipment containing asbestos.
- It is suggested that the historical items be removed before any other demolition work is performed to ensure that the historical equipment remains undamaged for preservation. If this historical equipment is not removed before other demolition (including removal of equipment with hazardous materials) is performed, the historical equipment must be protected to preserve the integrity of the historical equipment. It is important that equipment containing hazardous materials be removed before any general demolition, although the equipment with hazardous materials may be removed after any historical equipment has been removed. Protective measures will be required to mitigate damage to the equipment containing hazardous materials by the removal of the historical equipment, as this equipment could create health hazards if it is disturbed.

3.03.02 Mechanical

Alternative 3 requires that all mechanical equipment associated with Bridge Nos. 9, 10 and 12 be removed to accommodate the construction of new transfer bridges. This alternative will serve to remove the dilapidated structures that are currently in place and remove environmental hazards such as asbestos and lead paint. This will be a more cost effective option that removing Bridge Nos. 9 and 10 and then removing Bridge No. 12 at a later date due to a savings in mobilization costs. The cost of this option is approximately $520,000. See Appendix B for detailed cost information.

This alternative requires the removal of four span drive motors, six primary gear reducers, twelve lift screws, twelve worm gear reducers, associated line shafting, bearings, and couplings, forty-eight (48) counterweight sheaves, forty-eight (48) sheave bearings, twenty-four counterweight ropes, and twelve counterweights from the bridge gantry. Removals from the apron gantries are estimated to be forty-eight sheaves, twelve counterweight ropes, and sixty-six sheave bearings. Ancillary equipment located on the aprons and adjacent fenders must also be removed.

The issues regarding Alternative 3 are as follows:

- The cost associated with demolition of the mechanical components on these transfer bridges may increase due to the presence of hazardous materials. All gear boxes and any other equipment that contains lubricant will need to be thoroughly cleaned prior to removal. The assumed presence of lead paint on machinery and the presence of asbestos in the brake pads of Bridge No. 10 will increase the time and cost associated with demolition.
- Crane operations taking place during the removal of mechanical and structural elements of Bridge No. 12 could potentially disrupt the barge operations of Bridge No. 11. The demolition and staging would have to take place during a time when no barge operations are scheduled on Bridge No.11. The disruption could potentially have a significant economic impact.
- Due to the level of deterioration of the mechanical components, some of the machinery has broken off of the structure and has been submerged under water. These components should be removed since they may interfere with future construction operations. The cost of full removal may increase due the need to locate and salvage some of the machinery.

3.03.03 Structural

This alternative intends that Bridge Nos. 9, 10, and 12 be removed along with all structural elements that support the bridges. The cost of this option is approximately $1,360,000. See Appendix B for detailed cost information.

The removal process will require the use of a barge crane and systematically remove components from the top of the structure down. The access between Bridge Nos. 10 and 11 along with 11 and 12 in both the apron and bridge gantry will need to be blocked prior to any demolition of Bridge Nos. 9, 10, and 12.

The roof sheeting and wall sheeting will need to be removed from both the bridge gantry and the apron gantry, which may contain asbestos (see 3.04.05 Environmental). The structural roof and wall framing will then be removed. The electrical and mechanical components will need to be removed prior to removing the gantry floor beams or tower columns (see 3.04.01 Electrical and 3.04.02 Mechanical). Once all of the components are removed the gantry floor beams can be removed. The columns may need to be supported during the floor beam removal. The Bridge Nos. 9 and 10 control house should be removed at this time along with the Power House located at the base of Bridge No. 12 tower columns after all abandoned electrical and mechanical equipment has been removed (see 3.03.01 Electrical and 3.03.02 Mechanical). Finally, all of the tower columns and the temporary supports will need to be removed. Note that the Bridge Nos. 11 and 12 share tower columns and cannot be removed for Bridge No. 11 to stay in operation.

The bridges can be removed prior to the gantries at the contractor's discretion. The counterweights for both the bridge and the apron must be removed prior to removing either the bridge or the apron. The bridge and the apron shall be temporarily supported prior to removal of the counterweights (see 3.03.02 Mechanical).

The advantage is that the structure is removed so that the new transfer bridges, that are planned to be built under Contracts 6 and 9, can be constructed without interferences. It also clears the area south of Bridge No. 11 for the Port Authorities future use.

The disadvantage is that the cost is greater than Alternatives 1 and 2.

3.03.04 Geotechnical

Assessment of the Geotechnical aspects of Alternative 3 will be included in subsequent submissions.

3.03.05 Environmental

Federal and State regulations require that any asbestos material that is impacted by proposed renovations must be removed prior to disturbance. This function must be performed by a licensed contractor utilizing approved engineering controls and wet procedures. The scope of this alternative is the demolition of these structures; therefore all asbestos materials must be removed prior to the structures demolition. State and Port Authority notifications for asbestos removal are required.

The following are the asbestos materials requiring removal from this structure:

Summary of Confirmed and Assumed Asbestos Containing Materials Impacted - Greenville Yard Transfer Bridge Nos. 9, 10, 12

Activity	Notes	Location	Asbestos Material	Quantity	
Demolition Of Bridge Nos. 9, 10 and 12	Asbestos must be removed, only option is how much of the electrical is to be saved for display purposes verses disposal.	Bridge & Apron Tower No.9 (Includes Transite Cement partition in Tower Bridge No. 12)	Corrugated Transite Cement Panels	6792	SF
			Window Frame Caulk	330 27	LF SF
		Bridge - Apron Towers & Covered Vertical Enclosures Nos. 9, 10 & 12	Tar Coated Metal Panels	14,736	SF
			Panel Washers	72	SF
		Transfer Bridge No. 9 Ramp	Tar Plugs	8	SF
		Bridge Tower No. 10	Brake Pads	3	SF
		Control House 9/10	Assumed Electrical Removals	149 1335	SF LF
		Control House 9/10	Flat Transite Cement Panels	approx. 1195	SF
		Control House 9/10	Caulks	208 17	LF SF
		Bridge Towers Nos. 9 and 12	Misc Elect.	4	SF

Disturbance of heavy metal coating is federally regulated, specifically by OSHA Lead In Construction Rule 1926.62. If a heavy metal based coating is to be impacted in any way by proposed renovations,

what is impacted is required to be done so in a manner not to cause an exposure and its waste must be properly handled and disposed of. This may involve removal, and/or containment measures to prevent the exposure to workers and the environment. If the proposed renovations do not impact any of the confirmed or assumed heavy metal coatings, these coatings may remain in tact. Impacts to heavy metal coatings do not require federal notification. The scope of this alternative is to demolish these structures, therefore the design options as they relate to heavy metal coatings are as follows:

- Entire Coating Removal. Typically performed by abrasive blasting with some form of media within negative air containments that strips the paint from the component; or alternatively chemical stripping paint off the component utilizing a caustic agent. Both are costly options that are not necessary as this structure will be demolished.
- Partial Coating Removals / Handling of Coated Materials. This involves the following procedures: Collection of painted equipment and painted metal components intact for recycling; Collection of loosely adhered paint chips from painted components to prevent fallout and spread to the environment; Spot removal of paint from structural elements at proposed torch cut-lines; and intact collection and disposal of porous building materials containing suspect heavy metal coatings. In preparation for the structures demolition and after all coated metals are collected for recycling and all porous (i.e. -wood) is collected for disposal, spot abatements of coatings utilizing hand tools and chemical stripping agents at proposed torch cut lines are performed. These methods have been long established to minimize heavy metal exposure. Subsequent to cuts; steel components are wrapped in plastic to prevent paint chips from being dislodged, they are then transferred to containers and sent (with coatings intact) to a recycler. Painted metallic materials commonly are sent to recyclers with acknowledgement that the facility knows the component coatings may contain heavy metals. Only the collected paint chips, stripped paint from cut line spot abatements and porous coated materials will require sampling and eventual disposal as hazardous materials. These procedures outlined will minimize removal, handling and transportation costs.

The follow are the observed coated and either presumed or confirmed heavy metal coatings:

Summary of Confirmed & Assumed Heavy Metal Coatings - Greenville Yard Transfer Bridge Nos. 9, 10, 12			
Location	Fixture	Surface Color	Result (% Pb w/w)
Bridge & Apron Towers No. 9	Structural Steel Components	Black	10.22%
	Minor Steel Components -- Hand Rails	Black	10.24%
	Installed Components -- Machinery	Black	Assumed
Bridge & Apron Towers No. 10, 12, 13	Structural Steel Components	Black	22.00%
	Structural Steel Framing for Walls and Roof	Orange / Black	Assumed
	Installed Components -- Machinery	Black	Assumed
Control House 9/10	Wood Window Frames	Gray	Assumed
	Any Painted Surface		Assumed
Transfer & Fixed Bridge Nos. 9, 10, 12	Steel Structure	Black	Assumed

3.04 Suggested Alternative

Based on discussions in the previous sections, Alternative 2 is the suggested alternative. This alternative will remove the existing structures that are located within the footprint of the new transfer bridges being installed under Contracts 6 and 9. This alternative addresses methods to safely handle hazardous materials and will allow preservation of historically relevant equipment.

Alternative 2 will also limit the amount of demolition work performed near Bridge No. 11. This is an important aspect to the demolition because of the shared control house for Bridge Nos. 11 and 12. If Alternative 3 were chosen, there could be the potential for limited demolition operations or limited barge operations to coordinate the work. Power may need to be shut off during demolition of Bridge No. 12 due to cranes or other heavy equipment operating in the vicinity of the incoming power feeders to Bridge No. 11. This situation would leave Bridge No. 11 inoperable during certain periods of time.

It is proposed that Bridge No. 12 be demolished under Contract 10, which is the contract for demolishing Bridge No. 11. This would prevent any potential barge operation outages and would make the process of confirming that all power sources have been disconnected from Bridge No. 12 because the incoming power feeders for Bridge No. 11 would be removed and would allow no chance of any power sources reaching any equipment associated with Bridge No. 12.

Chapter 4 - Design Calculations

Design calculations included in subsequent submissions if required.

Chapter 5 - Construction Cost Estimate

Assessment of the construction cost estimate will be included in subsequent submissions. A table below has been included to summarize the current cost estimates for each alternative.

Summary of Cost Estimates - Greenville Yard Transfer Bridge Nos. 9, 10, 12			
Alternative	1	2	3
Electrical	-	$212,207.91	$265,692.77
Mechanical	-	$140,968.98	$212,698.58
Structural	-	$878,376.96	$1,355,246.93
Geotechnical	-	*	*
Environmental	-	*	*

* The cost estimates for the Geotechnical and Environmental have not been included with this submission. The Geotechnical cost estimate involves the removing of piles. The Environmental cost estimate involves the safe disposal of all hazardous material which includes Asbestos coated sheeting and lead painted steel. These costs will be substantial and will have a large impact on the total construction cost estimate.

Chapter 6 - Construction Schedule

Assessment of the construction schedule will be included in subsequent submissions.

Appendix A - Sketches

Appendix B - Cost Estimate

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Project: Greenville Contract 5	Computed: MHT	Date: 02/15/12	
Subject: Cost Estimate	Checked:	Date: / /	
Tasks: 8, 9, 10, and 12 Demo	Page: 1	of: 6	
Job #: 170582	No: 8		

Summary: Electrical Rehabilitation: Alternative 2

Item	Material Cost	Labor Cost	Total
Gantry Equipment	$272.60	$19,359.68	$19,632.28
Control House Equipment	$394.80	$26,770.56	$27,165.36
Winch Motor Equipment	$91.10	$3,706.44	$3,766.64
Exterior Light Fixtures	$91.10	$4,839.92	$4,901.02
Miscellaneous Equipment	$138.10	$5,218.08	$5,326.18
Item Subtotal	$897.70	$59,893.68	$60,791.38
Additional Labor			
Electrical and Asbestos Foremen	$0.00	$14,721.60	$14,721.60
Additional Cost			
Contingency 15%	$134.66	$11,192.29	$11,326.96
Equipment			
Miscellaneous equipment rental for 9 days	$90,000.00	$0.00	$90,000.00
Subtotal	$91,032.36	$85,807.57	$176,839.93
Overhead and Profit 20%	$18,206.47	$17,161.51	$35,367.99
Total	$109,238.83	$102,969.09	**$212,207.91**

* Work for this item shall be completed per Contract MFP-664.090 and shall not have any additional cost

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Project: Greenville Contract 5	Computed: MHT	Date: 02/15/12	
Subject: Cost Estimate	Checked:	Date: / /	
Tasks: 8, 9, 10, and 12 Demo	Page: 2	of: 6	
Job #: 170582	No: 8		

Summary: Electrical Rehabilitation: Alternative 3

Item	Material Cost	Labor Cost	Total
Gantry Equipment	$409.80	$28,038.62	$28,448.42
Control House Equipment	$394.80	$26,770.56	$27,165.36
Winch Motor Equipment	$89.30	$4,461.76	$4,551.06
Exterior Light Fixtures	$89.30	$6,352.56	$6,441.86
Miscellaneous Equipment	$163.80	$9,675.84	$9,839.64
Item Subtotal	$1,142.10	$76,304.24	$77,446.34
Additional Labor			
Electrical and Asbestos Foremen	$0.00	$19,432.48	$19,432.48
Additional Cost			
Contingency 15%	$171.32	$14,360.61	$14,531.82
Equipment			
Miscellaneous equipment rental for 1* days	$110,000.00	$0.00	$110,000.00
Subtotal	$111,313.42	$110,097.23	$221,410.64
Overhead and Profit 20%	$22,262.68	$22,019.46	$44,282.13
Total	$133,576.10	$132,116.67	**$265,692.77**

* Work for this item shall be completed per Contract MFP-664.090 and shall not have any additional cost

Task: Electrical Rehabilitation Alternative 2

Materials

Item	Quantity	Unit	Unit Cost	Item Cost
Gantry Equipment Subtotal				$272.60
Collect and double bag motor and brake conductors	4	CY	$4.70	$18.80
Collect and double bag limit switch conductors	34	CY	$4.70	$159.80
Collect and double bag interior light fixture and outlet conductors	20	CY	$4.70	$94.00
Control House Equipment Subtotal				$364.80
Collect and double bag control house conductors	84	CY	$4.70	$364.80
Winch Motor Equipment Subtotal				$61.10
Collect and double bag winch motor conductors	13	CY	$4.70	$61.10
Exterior Light Fixtures Subtotal				$61.10
Collect and double bag exterior light fixture conductors	13	CY	$4.70	$61.10
Miscellaneous Equipment Subtotal				$108.10
Collect and double bag electrical station conductors	23	CY	$4.70	$108.10
			Materials Subtotal	$897.70

Labor

Item	Labor Rate	Labor Hours	Labor Cost
Gantry Equipment Subtotal			$19,359.68
Remove drive motors and brakes conduits (3 Electricians, 1 day)	$94.54	24	$2,268.96
Remove drive motors and brakes conductors (1 Electrician, 1 day)	$94.54	8	$756.32
Remove limit switches (1 Electrician, 1 day)	$94.54	8	$756.32
Remove limit switch conduits (1 Electrician, 1 day)	$94.54	8	$756.32
Remove limit switch conductors (1 Electrician, 1 day)	$94.54	8	$756.32
Remove light fixtures and outlets naida gantries (1 Electrician, 1 day)	$94.54	8	$756.32
Remove interior light fixture and outlet conduits (3 Electricians, 1 day)	$94.54	24	$2,268.96
Remove interior light fixture and outlet conductors (1 Electrician, day)	$94.54	8	$756.32
Collect and double bag conductors (7 Asbestos workers, 2 days)	$91.82	112	$10,283.84
Control House Equipment Subtotal			$26,770.56
Remove control desks (2 Electricians, 1 days)	$94.54	16	$1,512.64
Remove general electrical equipment (3 Electricians, 1 day)	$94.54	24	$2,268.96
Remove all motor control equipment and resistors (3 Electricians, 2 days)	$94.54	48	$4,537.92
Remove control house conduits and conductors (2 Electricians, 2 days)	$94.54	32	$3,025.28
Collect and double bag conductors (7 Asbestos workers, 3 days)	$91.82	168	$15,426.76
Winch Motor Equipment Subtotal			$3,706.44
Remove winch motor conduits (1 Electrician, 1 day)	$94.54	8	$756.32
Remove winch motor conductors (1 Electrician, 1/2 day)	$94.54	4	$378.16
Collect and double bag conductors (7 Asbestos workers, 1/2 day)	$91.82	28	$2,570.96

Exterior Light Fixtures Subtotal			$4,839.92
Remove exterior light fixtures (1 Electrician, 1/2 day)	$94.64	4	$378.16
Remove exterior light fixture conduits (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove exterior light fixture conductors (1 Electrician, 1/2 day)	$94.64	4	$378.16
Collect and double bag conductors (7 Asbestos workers, 1/2 day)	$91.82	28	$2,570.96
Miscellaneous Equipment Subtotal			$5,218.08
Remove electrical stations (1 Electrician, 1 day)	$94.64	8	$756.32
Remove electrical station conduits (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove electrical station conductors (1 Electrician, 1/2 day)	$94.64	4	$378.16
Collect and double bag conductors (7 Asbestos workers, 1/2 day)	$91.82	28	$2,570.96
Additional Labor Subtotal			$14,721.68
3 Electrical foremen, 4 days	$99.24	96	$9,527.04
1 Asbestos foreman, 7 days	$92.73	56	$5,194.56
		Labor Subtotal	$74,815.28

Equipment

Item	Equipment
Miscellaneous equipment rental with 1 equipment operator for 9 days	$90,000.00

Alternative 2 Electrical Rehabilitation Total		$165,512.98
Material and Labor Contingency	15%	$11,326.95
Overhead and Profit	20%	$35,367.99
Alternative 3 Electrical Rehabilitation Subtotal		$212,207.91

Task: Electrical Rehabilitation Alternative 3

Materials

Item	Quantity	Unit	Unit Cost	Item Cost
Gantry Equipment Subtotal				**$408.90**
Collect and double bag motor and brake conductors	7	CY	$4.70	$32.90
Collect and double bag limit switch conductors	50	CY	$4.70	$235.00
Collect and double bag interior light fixture and outlet conductors	30	CY	$4.70	$141.00
Control House Equipment Subtotal				**$394.80**
Collect and double bag control house conductors	84	CY	$4.70	$394.80
Winch Motor Equipment Subtotal				**$89.30**
Collect and double bag winch motor conductors	19	CY	$4.70	$89.30
Exterior Light Fixtures Subtotal				**$89.30**
Collect and double bag exterior light fixture conductors	19	CY	$4.70	$89.30
Miscellaneous Equipment Subtotal				**$169.80**
Collect and double bag electrical station conductors	34	CY	$4.70	$169.80
			Materials Subtotal	**$1,142.10**

Labor

Item	Labor Rate	Labor Hours	Labor Cost
Gantry Equipment Subtotal			**$29,039.62**
Remove drive motors and brakes conduits (2 Electricians, 2 days)	$94.64	32	$3,026.28
Remove drive motors and brakes conductors (1 Electrician, 1 day)	$94.64	8	$756.32
Remove limit switches (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove limit switch conduits (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove limit switch conductors (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove light fixtures and outlets inside gantries (1 Electrician, 1 day)	$94.64	8	$756.32
Remove interior light fixture and outlet conduits (5 Electricians, 1 day)	$94.64	40	$3,781.60
Remove interior light fixture and outlet conductors (1 Electrician, 1 day)	$94.64	8	$756.32
Collect and double bag conductors (7 Asbestos workers, 3 days)	$91.82	168	$15,425.76
Control House Equipment Subtotal			**$26,770.56**
Remove control desks (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove general electrical equipment (3 Electricians, 1 day)	$94.64	24	$2,268.96
Remove all motor control equipment and resistors (3 Electricians, 2 days)	$94.64	48	$4,537.92
Remove control house conduits and conductors (2 Electricians, 2 days)	$94.64	32	$3,026.28
Collect and double bag conductors (7 Asbestos workers, 3 days)	$91.82	168	$15,425.76
Winch Motor Equipment Subtotal			**$4,461.76**
Remove winch motor conduits (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove winch motor conductors (1 Electrician, 1/2 day)	$94.64	4	$378.16
Collect and double bag conductors (7 Asbestos workers, 1/2 day)	$91.82	28	$2,570.96
Exterior Light Fixtures Subtotal			**$8,352.56**
Remove exterior light fixtures (1 Electrician, 1 day)	$94.64	8	$756.32
Remove exterior light fixture conduits (3 Electricians, 1 day)	$94.64	24	$2,268.96
Remove exterior light fixture conductors (1 Electrician, 1 day)	$94.64	8	$756.32
Collect and double bag conductors (7 Asbestos workers, 1/2 day)	$91.82	28	$2,570.96

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Project: Greenville Contract 5 | Completed: MKT | Date: 02/15/12
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Miscellaneous Equipment Subtotal			**$9,879.84**
Remove electrical station conduits (2 Electricians, 1 day)	$94.64	16	$1,512.64
Remove electrical station conduits (3 Electricians, 1 day)	$94.64	24	$2,268.96
Remove electrical station conductors (1 Electrician, 1 day)	$94.64	8	$756.32
Collect and double bag conductors (7 Asbestos workers, 1 day)	$91.82	56	$5,141.92
Additional Labor Subtotal			**$19,432.48**
3 Foremen, 6 days	$99.24	144	$14,290.56
1 Asbestos foreman, 8 days	$91.82	56	$5,141.92
		Labor Subtotal	**$95,736.72**

Equipment

Item	Equipment
Miscellaneous equipment rental with 1 equipment operator for 11 days	$110,000.00

Alternative 3 Electrical Rehabilitation Subtotal		**$206,878.82**
Material and Labor Contingency	**15%**	**$14,531.82**
Overhead and Profit	**20%**	**$44,282.13**
Alternative 3 Electrical Rehabilitation Subtotal		**$265,692.77**

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Project: Greenville Yard — Computed: BMG — Date: 02/15/2012
Subject: Contract 5 — Checked: PJL — Date: 02/16/2012
Task: Cost Estimate — Page: — of: —
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Regional Multiplier
(Jersey City, NJ) 127%

Workers (Rates include OSP)	Hourly Rate	Regional Hr. Rate
Foreman	$ 71.20	$ 90.42
Millwright	$ 65.05	$ 83.86
Laborer	$ 49.93	$ 63.37
Asbestos Worker	$ 72.30	$ 91.82
Engineer		$ 126.00

Work Crew consists of 1 Foreman, 2 Millwrights, 3 Laborers: $ 448.31

Note: Field work adds a 1.25 multiplier to include night work when bridge operation is effected.

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Project: Greenville Yard — Computed: BMG — Date: 02/15/2012
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Job #: 170582 — No.: 0

Summary

Alternative 2 - Machinary Demolition of Bridges 8 and 10

Equipment, Cranes, etc.			$150,000.00
Labor			$140,968.98
Sub-total			$290,968.98
Mobilization (10%)			$29,097
Contingency (15%)			$43,646
Project Total			$363,711

Alternative 3 - Machinary Demolition of Bridges 8, 10, and 12

Equipment, Cranes, etc.			$200,000.00
Labor			$212,698.68
Sub-total			$412,698.68
Mobilization (10%)			$41,270
Contingency (15%)			$61,905
Project Total			$515,873

Contract 5 Mechanical Cost Estimate.xlsx

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Project: Greenville Yard	Computed: BAG	Date: 02/15/2012
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Alternative 2 - Machinery Demolition of Bridges 9 and 10

Equipment

Item	Equipment Cost
Miscellaneous equipment rental with 1 equipment operator for 15 days	$150,000.00
Subtotal	$150,000.00

Labor

Item	Labor Rate	Labor Hours	Labor Cost
Bridge Gantry Equipment Subtotal			**$94,344.74**
Rigging, Demolition (2 days)	$448.31	16	$7,172.96
Remove Drive Motors and Brakes (4 motors, 4 brakes) (2 days)	$448.31	16	$7,172.96
Remove Line Shafts and Couplings (1 day)	$448.31	8	$3,586.48
Drain and Dispose Reducer Lubricant (4 Primary reducers) (1 day)	$448.31	8	$3,586.48
Clean Machinery Components of all Lubricants (1 day)	$448.31	8	$3,586.48
Remove Asbestos Brake Pads (2 pads) (1/2 day) (2 asbestos workers)	$274.07	4	$1,096.26
Removal of Wire Ropes (16 Ropes) (2 days)	$448.31	16	$7,172.96
Remove Sheaves and Bearings (32 sheaves, 32 bearings) (5 days)	$448.31	40	$17,932.40
Remove Line Shaft Bearings and Bearing Supports (1 day)	$448.31	8	$3,586.48
Removal of Lifting Screws (3 days)	$448.31	24	$10,769.44
Drain and Dispose of Worm Reducer Lubricant (8 Reducers) (1 day)	$448.31	8	$3,586.48
Remove of Worm Gear Reducers (8 total) (7 days)	$448.31	56	$25,105.36
Apron Gantry Equipment Removal			**$25,105.36**
Remove Sheaves and Bearings (32 sheaves, 44 bearings) (5 days)	$448.31	40	$17,932.40
Remove of Wire Ropes (8 Ropes) (2 days)	$448.31	16	$7,172.96
Miscellaneous Equipment Removal			**$21,518.88**
Remove of Apron Barge Locks (8 locks) (1 day)	$448.31	8	$3,586.48
Remove of Apron Hand Winches (4 winches) (1 day)	$448.31	8	$3,586.48
Remove of Electric Winches (2 electric winches) (2 days)	$448.31	16	$7,172.96
Remove of Remaining Apron Operating Machinery (2 days)	$448.31	16	$7,172.96
Subtotal			$140,968.98

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Alternative 3 - Machinery Demolition of Bridges 9, 10, and 12

Equipment

Item	Equipment Cost
Miscellaneous equipment rental with 1 equipment operator for 20 days	$200,000.00
Subtotal	$200,000.00

Labor

Item	Labor Rate	Labor Hours	Labor Cost
Bridge Gantry Equipment Subtotal			**$144,655.48**
Rigging, Demolition (2 days)	$448.31	16	$7,172.96
Remove Drive Motors and Brakes (6 motors, 6 brakes) (3 days)	$448.31	24	$10,759.44
Remove Line Shafts and Couplings (2 days)	$448.31	16	$7,172.96
Drain and Dispose Reducer Lubricant (4 Primary reducers) (2 days)	$448.31	16	$7,172.96
Clean Machinery Components of all Lubricants (2 days)	$448.31	16	$7,172.96
Remove Asbestos Brake Pads (2 pads) (1/2 day) (2 asbestos workers)	$274.07	4	$1,096.26
Removal of Wire Ropes (24 Ropes) (3 days)	$448.31	24	$10,759.44
Remove Sheaves and Bearings (48 sheaves, 48 bearings) (7 days)	$448.31	56	$25,105.36
Remove Line Shaft Bearings and Bearing Supports (2 days)	$448.31	16	$7,172.96
Removal of Lifting Screws (5 days)	$448.31	40	$17,932.40
Drain and Dispose of Worm Reducer Lubricant (12 Reducers) (2 days)	$448.31	16	$7,172.96
Removal of Worm Gear Reducers (12 total) (10 days)	$448.31	80	$35,864.80
Apron Gantry Equipment Removal			**$39,451.28**
Remove Sheaves and Bearings (28 sheaves, 66 bearings) (3 days)	$448.31	64	$28,691.84
Removal of Wire Ropes (12 Ropes) (3 days)	$448.31	24	$10,759.44
Miscellaneous Equipment Removal			**$28,691.84**
Removal of Apron Barge Locks (8 locks) (1 day)	$448.31	8	$3,586.48
Removal of Apron Hand Winches (4 winches) (1 day)	$448.31	8	$3,586.48
Removal of Electric Winches (3 electric winches) (3 days)	$448.31	24	$10,759.44
Removal of Remaining Apron Operating Machinery (2 days)	$448.31	16	$7,172.96
Removal of Apron Buffer (1 day)	$448.31	8	$3,586.48
Subtotal			$212,898.58

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Project: Greenville Contract 5 Computed: JSJ Date: 02/10/12
Subject: Structural Cost Estimate Checked: Date: / /
Task: Br. 9 and 10 Demo Page: 1 of: 8
Job #: 170582 No: 8

Task: Structural Rehabilitation Alternative 2

Materials

Item	Quantity	Unit	Unit Cost	Item Cost
			Materials Subtotal	$0.00

Labor

Item	Labor Rate	Labor Hours	Labor Cost
Apron Gantry Roof and Walls Removals (5 Days)			**$22,161.84**
3 Iron Workers	$91.26	72	$6,570.00
2 Laborers	$64.85	80	$5,188.00
1 Crane Operator	$87.40	40	$3,496.00
1 Foreman	$99.24	40	$3,969.60
2 Asbestos Workers	$91.82	32	$2,938.24
Apron Gantry Girders Removals(2 Days)			**$9,441.44**
3 Iron Workers	$91.26	48	$4,380.00
2 Laborers	$64.85	32	$2,076.20
1 Crane Operator	$87.40	16	$1,398.40
1 Foreman	$99.24	16	$1,587.84
Apron Gantry Tower Columns Removals (3 Days)			**$14,162.16**
3 Iron Workers	$91.26	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76
Bridge Gantry Roof and Walls Removals (5 days)			**$22,161.84**
3 Iron Workers	$91.26	72	$6,570.00
2 Laborers	$64.85	80	$5,188.00
1 Crane Operator	$87.40	40	$3,496.00
1 Foreman	$99.24	40	$3,969.60
2 Asbestos Workers	$91.82	32	$2,938.24

Bridge Gantry Tower Columns Removals (3 days)			**$14,162.16**
3 Iron Workers	$91.26	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76
Bridge Gantry Tower Columns Removals (3 days)			**$14,162.16**
3 Iron Workers	$91.26	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76
Apron Counterweight Jacking (6 days)			**$28,324.32**
3 Iron Workers	$91.26	144	$13,140.00
2 Laborers	$64.85	96	$6,225.60
1 Crane Operator	$87.40	48	$4,195.20
1 Foreman	$99.24	48	$4,763.52
Apron Counterweight Removal (2 days)			**$9,441.44**
3 Iron Workers	$91.26	48	$4,380.00
2 Laborers	$64.85	32	$2,076.20
1 Crane Operator	$87.40	16	$1,398.40
1 Foreman	$99.24	16	$1,587.84
Apron Removal (1 day)			**$4,720.72**
3 Iron Workers	$91.26	24	$2,190.00
2 Laborers	$64.85	16	$1,037.60
1 Crane Operator	$87.40	8	$699.20
1 Foreman	$99.24	8	$793.92
Bridge Counterweight Jacking (6 days)			**$28,324.32**
3 Iron Workers	$91.26	144	$13,140.00
2 Laborers	$64.85	96	$6,225.60
1 Crane Operator	$87.40	48	$4,195.20
1 Foreman	$99.24	48	$4,763.52
Bridge Counterweight Removal (2 days)			**$9,441.44**
3 Iron Workers	$91.26	48	$4,380.00
2 Laborers	$64.85	32	$2,075.20
1 Crane Operator	$87.40	16	$1,398.40
1 Foreman	$99.24	16	$1,587.84
Bridge Removal (10 days)			**$47,207.20**
3 Iron Workers	$91.26	240	$21,900.00
2 Laborers	$64.85	160	$10,376.00
1 Crane Operator	$87.40	80	$6,992.00
1 Foreman	$99.24	80	$7,939.20

Off-site Disassembly (30 days)			**$102,782.40**
3 Iron Workers	$91.25	720	$65,700.00
2 Laborers	$64.85	480	$31,128.00
1 Foreman	$99.24	60	$5,954.40
Bridge 9 and 10 Control House (3 days)			**$14,162.16**
3 Iron Workers	$91.25	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76
		Labor Subtotal	**$140,665.60**

Equipment

Item	Equipment
200 Tons, Barge Mounted Crane, 70' Boom (10 weeks)	$116,000.00
200 Tons, Crawler Mounted Crane, 70' Boom (10 weeks)	$80,000.00
Miscelaneous Equipment (12 weeks)	$3,406.56
2 Fork Lifts (12 weeks)	$24,000.00
Equipment Subtotal	**$222,406.56**

Alternative 2 Structural Rehabilitation Total		**$363,062.16**
Mobilization	15%	**$54,459.32**
Material and Labor Contingency	15%	**$54,459.32**
Overhead and Profit	20%	**$145,396.16**
Alternative 2 Structural Rehabilitation Subtotal		**$878,376.96**

Task: Structural Rehabilitation: Alternative 2

Materials

Item	Quantity	Unit	Unit Cost	Item Cost
			Materials Subtotal	**$0.00**

Labor

Item	Labor Rate	Labor Hours	Labor Cost
Apron Gantry Roof and Walls Removals (8 Days)			**$35,603.12**
3 Iron Workers	$91.25	120	$10,950.00
2 Laborers	$64.85	128	$8,300.80
1 Crane Operator	$87.40	64	$5,593.60
1 Foreman	$99.24	64	$6,351.36
2 Asbestos Workers	$91.82	48	$4,407.36
Apron Gantry Girders Removals(3 Days)			**$14,162.16**
3 Iron Workers	$91.25	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76
Apron Gantry Tower Columns Removals (5 Days)			**$23,603.60**
3 Iron Workers	$91.25	120	$10,950.00
2 Laborers	$64.85	80	$5,188.00
1 Crane Operator	$87.40	40	$3,496.00
1 Foreman	$99.24	40	$3,969.60
Bridge Gantry Roof and Walls Removals (8 days)			**$35,603.12**
3 Iron Workers	$91.25	120	$10,950.00
2 Laborers	$64.85	128	$8,300.80
1 Crane Operator	$87.40	64	$5,593.60
1 Foreman	$99.24	64	$6,351.36
2 Asbestos Workers	$91.82	48	$4,407.36
Bridge Gantry Tower Columns Removals (3 days)			**$14,162.16**
3 Iron Workers	$91.25	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76

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Bridge Gantry Tower Columns Removals (5 days)			**$23,603.60**
3 Iron Workers	$91.25	120	$10,950.00
2 Laborers	$64.85	80	$5,188.00
1 Crane Operator	$87.40	40	$3,496.00
1 Foreman	$99.24	40	$3,969.60
Apron Counterweight Jacking (9 days)			**$42,486.48**
3 Iron Workers	$91.25	216	$19,710.00
2 Laborers	$64.85	144	$9,338.40
1 Crane Operator	$87.40	72	$6,292.80
1 Foreman	$99.24	72	$7,145.28
Apron Counterweight Removal (3 days)			**$14,162.16**
3 Iron Workers	$91.25	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76
Apron Removal (2 day)			**$8,922.64**
3 Iron Workers	$91.25	48	$4,380.00
2 Laborers	$64.85	24	$1,556.40
1 Crane Operator	$87.40	16	$1,398.40
1 Foreman	$99.24	16	$1,587.84
Bridge Counterweight Jacking (9 days)			**$42,486.48**
3 Iron Workers	$91.25	216	$19,710.00
2 Laborers	$64.85	144	$9,338.40
1 Crane Operator	$87.40	72	$6,292.80
1 Foreman	$99.24	72	$7,145.28
Bridge Counterweight Removal (3 days)			**$14,162.16**
3 Iron Workers	$91.25	72	$6,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76

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Bridge Removal (16 days)			**$70,810.80**
3 Iron Workers	$91.25	360	$32,850.00
2 Laborers	$64.85	240	$15,564.00
1 Crane Operator	$87.40	120	$10,488.00
1 Foreman	$99.24	120	$11,908.80
Offsite Disassembly (45 days)			**$180,968.40**
3 Iron Workers	$91.25	1080	$98,550.00
2 Laborers	$64.85	720	$46,692.00
1 Foreman	$99.24	360	$35,726.40
Bridge 9 and 10 Control House (3 days)			**$14,162.16**
3 Iron Workers	$91.25	72	$5,570.00
2 Laborers	$64.85	48	$3,112.80
1 Crane Operator	$87.40	24	$2,097.60
1 Foreman	$99.24	24	$2,381.76
		Labor Subtotal	**$534,899.04**

Equipment

Item	Equipment
200 Tons, Barge Mounted Crane, 70' Boom (15 weeks)	$172,500.00
200 Tons, Crawler Mounted Crane, 70' Boom (15 weeks)	$120,000.00
Miscellaneous Equipment (18 weeks)	$5,348.99
2 Fork Lifts (18 weeks)	$36,000.00
Equipment Subtotal	**$333,848.99**

Alternative 3 Structural Rehabilitation Total		**$868,748.03**
Mobilization	15%	**$130,312.20**
Material and Labor Contingency	15%	**$130,312.20**
Overhead and Profit	20%	**$225,874.49**
Alternative 3 Structural Rehabilitation Subtotal		**$1,355,246.93**

Appendix C - Construction Schedule

Construction schedule will be included in subsequent submissions

Appendix D - Support Documents

D.01 List of specifications

List of specifications will be included in subsequent submissions.

D.02 Long Lead Time Items

Long lead time items will be included in subsequent submissions, if applicable.

D.03 Mock-up Testing Items

Mock-up testing items will be included in subsequent submissions, if applicable.

D.04 Materials

Materials will be included in subsequent submissions, if applicable.

D.05 Design Calculations and Printouts

Design calculations and printouts will be included in subsequent submissions, if applicable.

D.06 Catalog Cut Sheets

Catalog cut sheets will be included in subsequent submissions, if applicable.

Appendix E - Technical Specification Outlines

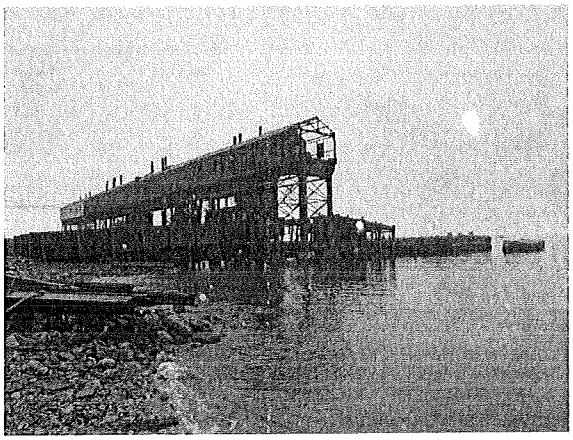
Technical specification outlines will be included in subsequent submissions if applicable.

Appendix F - Field Data

PHOTOS

GREENVILLE YARD
BAYONNE, NEW JERSEY

JANUARY, 2012



PREPARED BY:

ATLANTIC ENGINEERING, LLC
170 KINNELON ROAD, SUITE 36
KINNELON, NJ 07405

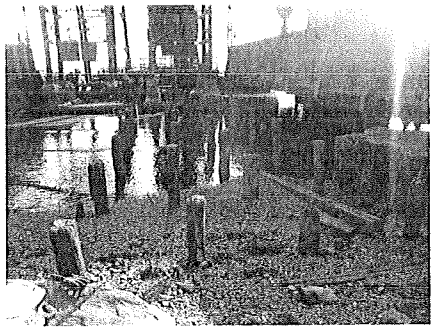


PHOTO 1- North side of bridge showing north pile field and pedestals, looking east.

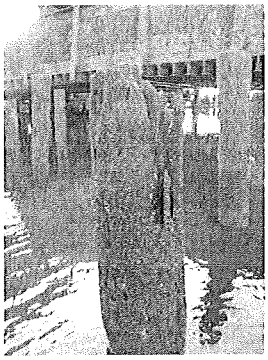


PHOTO 2– Pile A4, typical pile in poor condition showing top rot and section loss, looking southeast.

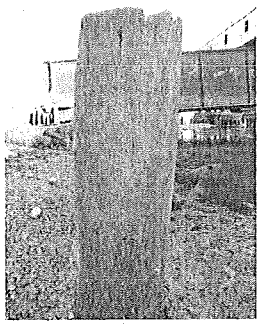


PHOTO 3- Pile B3, typical pile in satisfactory condition, looking north.

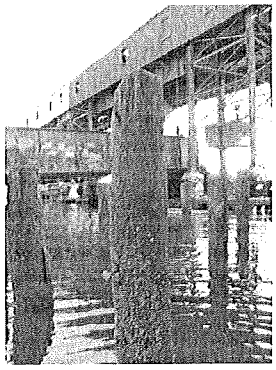


PHOTO 4– Pile D5, typical pile in fair condition showing top rot, looking northeast.

PHOTO 5- Pile C5, pile in poor condition showing loss of annular rings and section loss, looking northeast.

PHOTO 6– Pile D4 in poor condition showing severe worm damage.

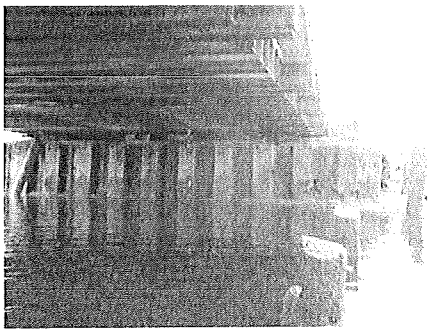


PHOTO 7- West abutment, east face, looking west.

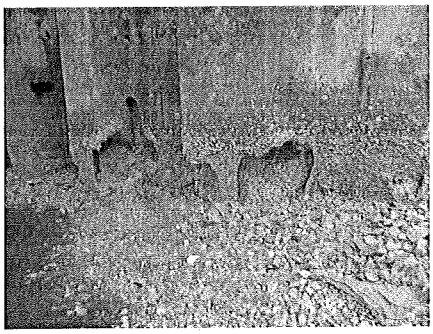


PHOTO 8- West abutment, east face, holes in bulkhead at mudline, looking west.

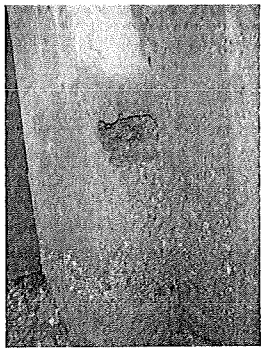


PHOTO 9- West abutment, east face, hole in bulkhead 2' above mudline 7' south of northeast corner, looking west.

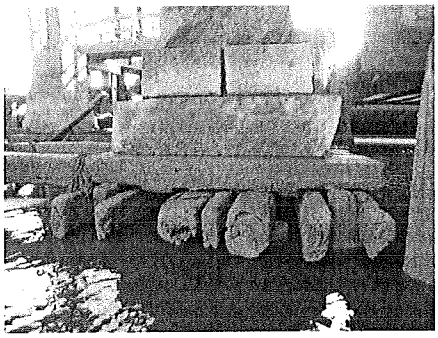


PHOTO 10- Pedestal #5 showing granite courses with missing pointing, grillage and cap beams in poor condition with section loss and worm damage, looking east.

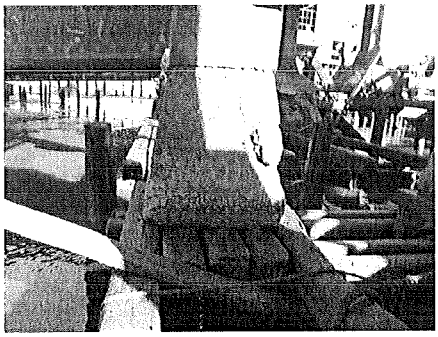


PHOTO 11- Pedestal # 1 showing corner spall and grillage in poor condition with heavy debris, looking north.

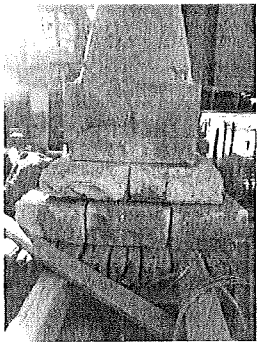


PHOTO 12– Pedestal # 6 showing grillage in poor condition, granite courses with missing pointing and honeycombing on the upper concrete, looking south.

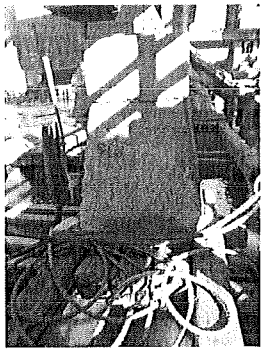


PHOTO 13- Pedestal # 2 showing heavy scaling, grillage in poor condition and heavy debris, looking north.

PHOTO 14– Typical grillage in poor condition with section loss and severe worm damage, looking west.

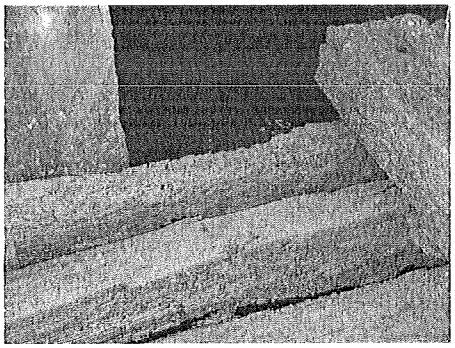


PHOTO 15- Typical grillage in poor condition with section loss and severe worm damage.

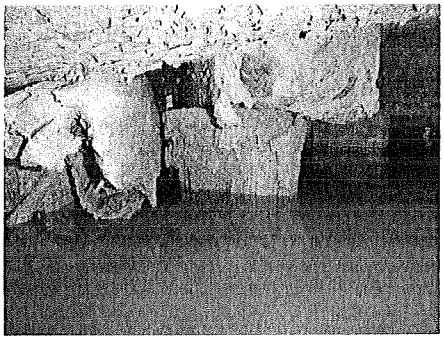


PHOTO 16– Pedestal #6, pile on east face in poor condition due to section loss and severe worm damage, looking west.

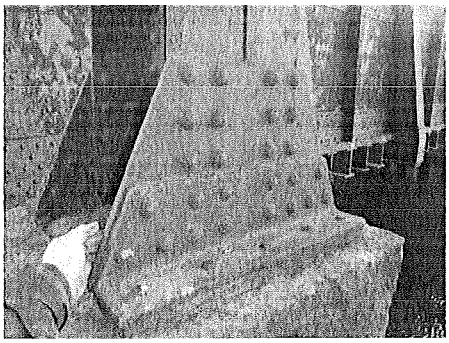


PHOTO 17- Typical connection point of I-beam to pedestal in satisfactory condition.

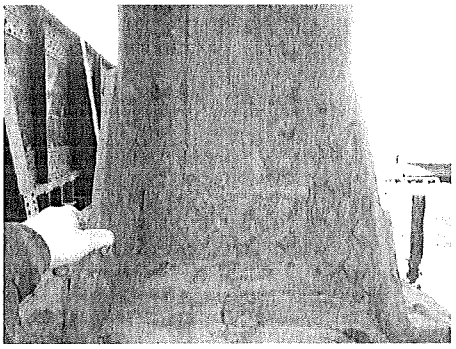


PHOTO 18– Typical I-beam in satisfactory condition.

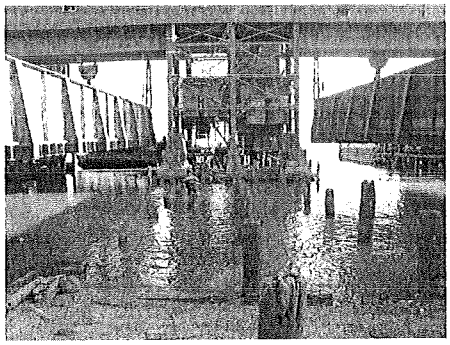


PHOTO 19- South side of bridge showing southern pile field and pedestals, looking east.

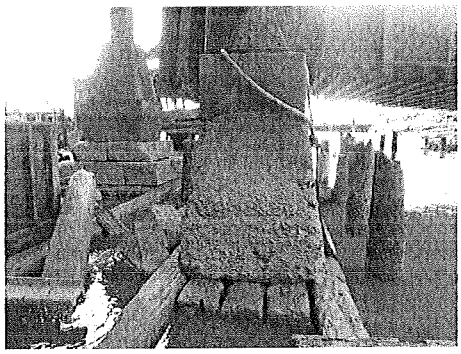


PHOTO 20– Pedestal # 13 with heavy scaling and some spalling, grillage in poor condition and heavy debris, looking south.

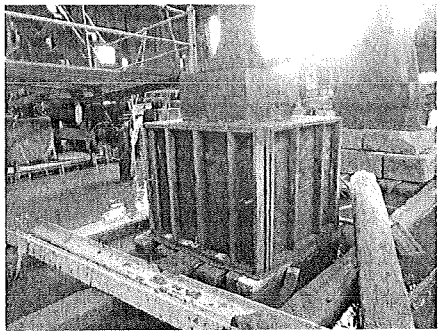


PHOTO 21- Pedestal # 14, encased in concrete with forms left in place, grillage in poor condition and heavy debris looking southeast.

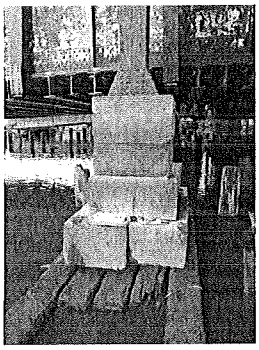


PHOTO 22– Pedestal # 9, granite courses with missing pointing and grillage in poor condition, looking north.

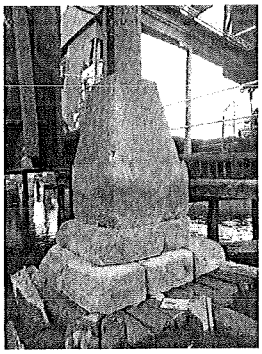


PHOTO 23- Pedestal # 10, granite courses with missing pointing, moderate scaling of the concrete and grillage in poor condition, looking northeast.

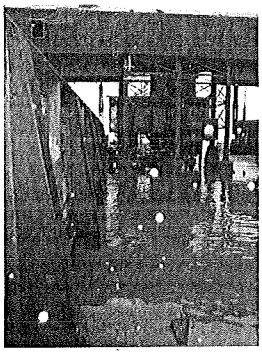


PHOTO 24- South side of bridge showing pedestals and southern pile field underwater, looking east.

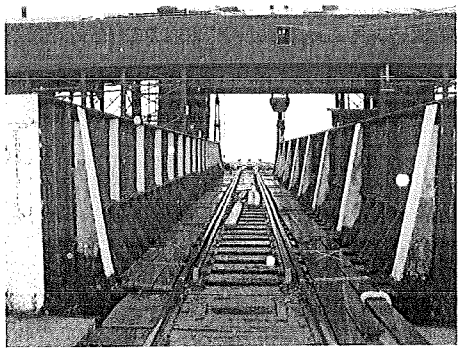


PHOTO 25- Top of bridge deck, looking east.

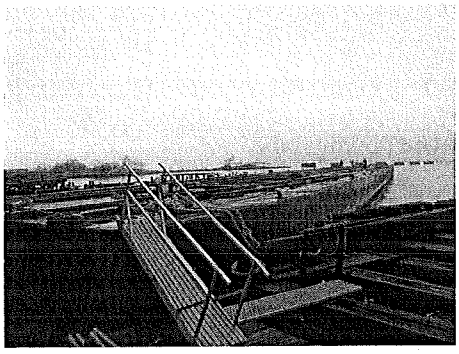


PHOTO 26- Railcar transfer barge docked at east end of apron, looking northeast.

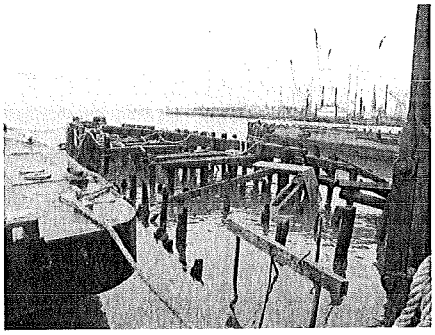


PHOTO 27- South side of barge, southern fender system in poor condition with missing cross bracing and horizontal timbers, cutoff piles and debris, looking southeast.

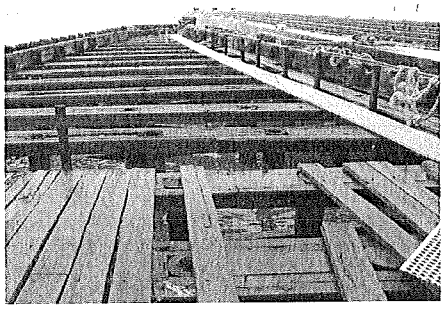


PHOTO 28- Northern fender system, showing horizontal timbers in overall satisfactory condition and cross bracing in overall poor condition due to section loss and severe worm damage with heavy debris, looking east.

PHOTOS

GREENVILLE YARD
BAYONNE, NEW JERSEY

JANUARY, 2012

PREPARED BY:

ATLANTIC ENGINEERING, LLC
170 KINNELON ROAD, SUITE 36
KINNELON, NJ 07405

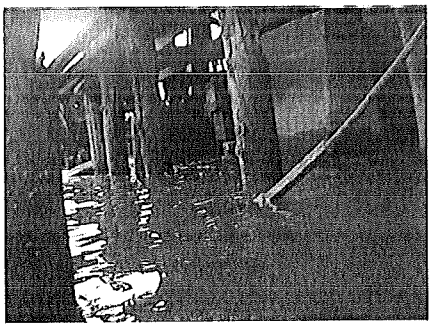


PHOTO 1- South fender system, bent 18 adjacent to pedestals, missing cross bracing and horizontal bracing, looking southwest.

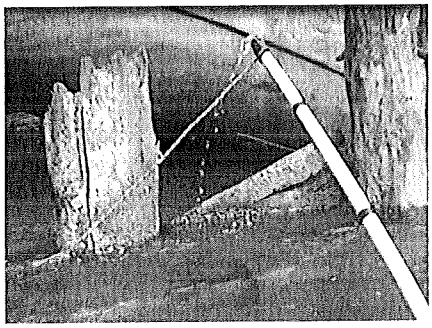


PHOTO 2– South fender system, typical broken pile in poor condition in the tidal zone, missing bracing and poor waiers looking northeast.

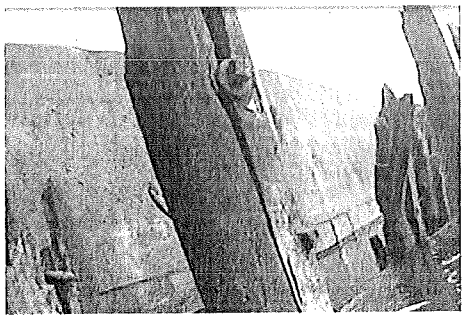


PHOTO 3- South fender system, typical pile in poor condition with splitting and checking in the tidal zone, looking northeast.

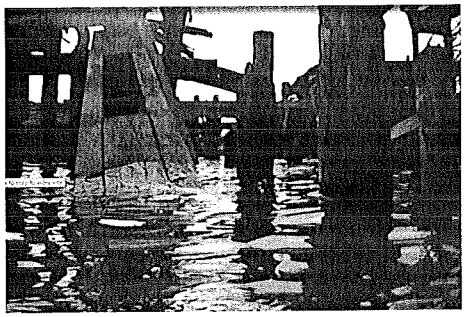


PHOTO 4– South fender system, typical heavy debris and collapsed fender conditions, looking east.

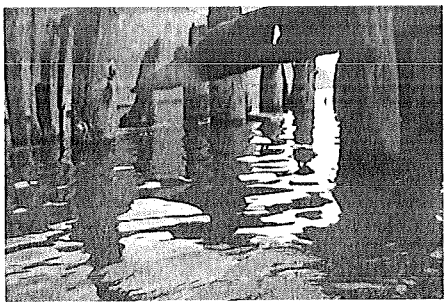


PHOTO 5- South fender system, typical broken piles in poor condition with poor bracing and collapsing fender conditions in the tidal zone, looking northeast.

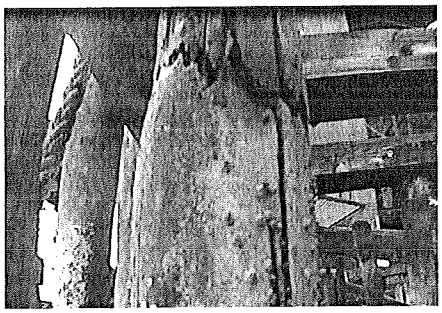


PHOTO 6– South fender system, typical pile in poor condition with horizontal cracking, looking west.

PHOTO 7- South fender system, south end, typical piles and walers in poor condition, looking east.

PHOTO 8– South fender system, north end, broken piles of fender system in poor condition in the tidal zone with transport barge in background, looking northwest.

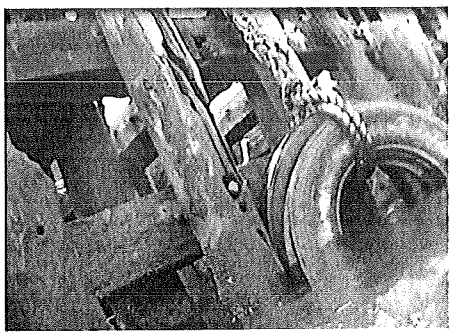


PHOTO 9- South fender system, northeast end, typical piles in poor condition due to splits and rot, looking southwest.

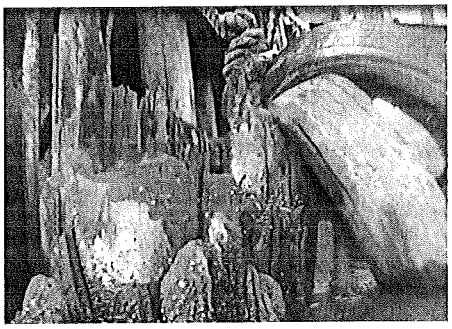


PHOTO 10– South fender system, dolphin at east end of fender showing typical broken piles in poor condition due to rot, section loss, impact damage and worms, looking west.

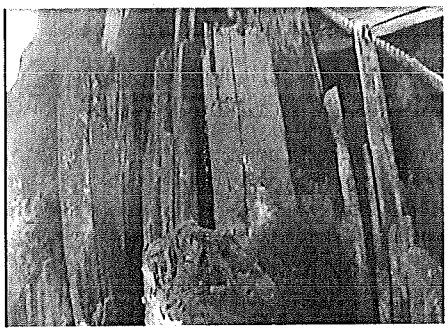


PHOTO 11- South fender system, dolphin at east end of fender, showing typical broken and full height piles in poor condition due to rot, impact damage and worms, looking southwest.

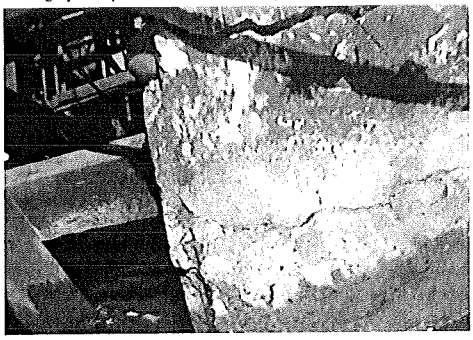


PHOTO 12- Northeast quadrant of pedestals, pedestal spalling with exposed rebar, looking west.

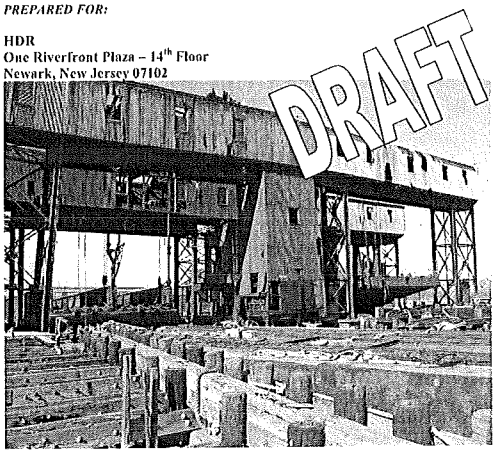
F.05 Draft Hazardous Material Assessment Report

Draft Hazardous Material Assessment Report

CROSS HARBOR FREIGHT PROGRAM / GREENVILLE YARD
CONTRACTS # 1, # 2, # 5 & # 10
PORT JERSEY- NEW JERSEY

PREPARED FOR:

HDR
One Riverfront Plaza – 14th Floor
Newark, New Jersey 07102



FOR SUBMITTAL TO:

PORT AUTHORITY of NY & NJ

PREPARED BY:

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.
1983 Marcus Ave., Suite 109
Lake Success, NY 11042

Frank J. Shkoditch
Certified Asbestos Inspector – Asbestos Designer (90-15792)

Date: January 19, 2012
 # 11057

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Environmental Planning & Management, Inc. (EPM), as a sub consultant to **HDR**, performed inspections for the presence of asbestos containing materials (ACM), lead containing materials (LCM), and polychlorinated biphenyl containing caulks (PCB caulks), which include glazing compounds and other suspect PCB containing coatings, in connection with the Greenville Yard Development portion of the Cross Harbor Freight Program (Specifically contracts # 1, # 2, # 5 and # 10). Inspections were limited to the proposed areas that may be impacted by the project scope of work.

The following is a summary of the findings:

Asbestos

EPM collected samples of suspect asbestos containing materials that may be impacted by demolition/renovation.

After laboratory analysis, asbestos containing materials were identified within the proposed scope of work. In addition, some suspect asbestos containing materials were identified but could not be sampled at the time of the survey since they were either associated with "live" electrical equipment that could not be powered off, were classified as of historical importance and not to be disturbed, or the premises were not structurally safe to enter. These materials are assumed to be asbestos containing. A summary of all confirmed and assumed asbestos containing materials identified during this investigation, along with the description and location can be found in Table I.

The Asbestos Sample Laboratory Analytical Results are summarized in Table III in Section 2.4.

Lead

EPM collected representative samples of paint that were potentially lead containing that may be impacted by demolition/renovation. All paint coatings are assumed to contain lead as per Port Authority direction.

Based on the laboratory analysis results, all painted surfaces that were sampled contain detectable levels of lead. A summary of all lead containing paints sampled/identified during this investigation, along with the description and location can be found in Table II.

Refer to Table IV - Lead Sample Laboratory Analytical Results for laboratory results (in Section 3.0).

Any impact to these lead coated surfaces as a result of this access improvement project will need to address OSHA Lead In Construction Standard (29 CFR 1926.62) requirements, Resource Conservation and Recovery Act (RCRA) requirements, as well as general health and safety issues with regard to protection of employees and the general public. Any contractor who performs renovations would need to establish their means and methods for protecting employees

and the general public during demolition / reconstruction.

Polychlorinated Biphenyl (PCB) Caulks / Glazing Compounds / Miscellaneous Suspect Coatings

EPM collected samples of caulk, glazing compounds, including translucent silicones, and creosote from fender systems that were suspect for the presence of PCBs that may be impacted by demolition/renovation.

Laboratory analysis results indicate that, although detectable levels were found - none of the materials contained hazardous levels of PCBs. Refer to Table V – PCB Caulk Sample Laboratory Analytical Results for laboratory results (in Section 4.0).

Table 1 – Summary of Confirmed and Assumed Asbestos Containing Materials Impacted - Greenville Yard Transfer Bridge 9, 10, 11, 12

Location	Description of ACM	% Asbestos	Friability	Condition	Estimated Quantity	Units
Transfer Bridge No. 9 Bridge & Apron (*2) Towers Walls & Roof	Corrugated Transite Panels	16 % Chrysotile	No	Good	6,792.	SF
	Window Frame Caulk	5.6 % Chrysotile Trace Anthophyllite	No	Poor	330 27	LF SF
Transfer Bridge No. 10, 11, 12 Bridge & Apron (*2) Towers Including Control Rooms Walls & Roof	Tar Coated Metal Panels	14.9% 17.6% Chrysotile	No	Fair to Poor (Varies)	24,102	SF
	Dense Washers	13.3 % Chrysotile	No	Good	118	SF
Transfer Bridge No. 10 and 11 Bridge Tower Interior	Machinery Brake Pads (6 Pads)	28.6 % Chrysotile	No	Good	5	SF
Transfer Bridge No. 9 Loading Ramp	Tar Plug (3" Diameter)	9.9 % Chrysotile	No	Fair	143 8	Units SF
Transfer Bridge No. 12 Loading Ramp	Tar Plug (3" Diameter)	9.9 % Chrysotile	No	Fair	163 9	Units SF
Control House 11/12 Exterior Underside and Interior Walls	Flat Transite Panels	23.5 % Chrysotile	No	Fair	1,195	SF
Control House 11/12 Interior Window Frames (SW, W & NW) & Door Frame	Caulk	0.93% Chrysotile 0.93% Anthophyllite 1.86 % Total	No	Poor	79 7	LF SF
Control House 11/12 NE Wall Heaters	Wire Insulation	66.7% Chrysotile	No	Fair	2	LF
Control House 11/12 Control Consoles (South)	Ebony Terminal Strips, Boards, Relay Array	**Assumed *1**	No	Good	4	SF
	Braided Wire Insulation - Bundles	**Assumed *1**	No	Good	24	LF

Table 1 – Summary of Confirmed and Assumed Asbestos Containing Materials Impacted - Greenville Yard Transfer Bridge 9, 10, 11, 12

Location	Description of ACM	% Asbestos	Friability	Condition	Estimated Quantity	Units
Control House 11/12 Control Consoles (North)	Ebony Terminal Strips, Boards, Relay Array	**Assumed *1**	No	Good	4	SF
	Braided Wire Insulation - Bundles	**Assumed *1**	No	Good	24	LF
Control House 11/12 Emergency Generator Position Panel	Ebony Blocks	**Assumed *1**	No	Good	3	SF
Control House 11/12 Fuse Box to Left of PSE&G Box	Ebony Board	**Assumed *1**	No	Good	0.6	SF
	Braided Wire Insulation	**Assumed *1**	No	Good	10	LF
Control House 11/12 Heater Disconnect	Backer Board - Brown	**Assumed *1**	No	Good	0.4	SF
Control House 11/12 Open Front Breakers	Ebony Boards	**Assumed *1**	No	Good	8.5	SF
	Duct Sealant	**Assumed *1**	No	Good	0.01	SF
	Braided Wire Insulation	**Assumed *1**	No	Good	75	LF
Control House 11/12 Main Power Distribution Panel	Backer Board (Including all Components Mounted on it)	**Assumed *1**	No	Good	116	SF
	Braided Wire Insulation	**Assumed *1**	No	Good	1,250	LF
Control House 9/10 *2	Flat Transite Panels *4	**Assumed**	No	Fair (From Limited View)	1,195	SF
Control House 9/10 Interior /Exterior Window Frames (Excludes Weight Shaft Windows) *2	Caulk *4	**Assumed**	No	Poor	208 17	LF SF

Table I – Summary of Confirmed and Assumed Asbestos Containing Materials Impacted - Greenville Yard Transfer Bridge 9, 10, 11, 12

Location	Description of ACM	% Asbestos	Friability	Condition	Estimated Quantity	Units
Control House 9/10 Wall Heaters *2	Wire Insulation *3	Assumed	Unknown	Unknown	2	LF
	Backer Insulation *3	Assumed	Unknown	Unknown	2	SF/Unit
Control House 9/10 Control Consoles (3) *2	Ebony Terminal Strips, Boards, Relay Array *3	Assumed *1	Unknown	Unknown	13	SF
	Braided Wire Insulation Bundles *3	Assumed *1	Unknown	Unknown	72	LF
Control House 9/10 Main Power Distribution Panel *2	Backer Board (Including all Components Mounted on it) *4	Assumed *1	Unknown	Unknown	116	SF
	Braided Wire Insulation *4	Assumed *1	Unknown	Unknown	1,250	LF
Control House 9/10 Miscellaneous Wall Electrical *2	Ebony Boards *3	Assumed *1	Unknown	Unknown	13	SF
	Duct Sealant *3	Assumed *1	Unknown	Unknown	1	SF
	Braided Wire Insulation *3	Assumed *1	Unknown	Unknown	10	LF
Approximate Totals						
Non-friable Panels, Caulks, Puttles-Plugs, Miscellaneous Machinery / Fasteners / Electrical Components (Assuming no Items are preserved)					33,760	SF
Braided Wire Insulation Branches / Bundles (Assuming no Items are preserved)					2,719	LF

*1 – Component scheduled to be saved. If a determination is made at a later time that the component is not to be saved, prior to disturbance of component a certified and licensed inspector independent from the removal contractor shall determine if the material shall be sampled to verify asbestos content, or simply dispose of as asbestos (assumed asbestos containing).
*2 – Location was either not accessible, or access was limited.
*3 - Material was not observed during the on-site surveys. Material is assumed to be present and asbestos containing from observations and/or sampling of similar spaces.
*4 - Material was observed at a distance. Direct measurements could not be performed and therefore quantity is estimated from observations, limited measurements and/or sampling of similar spaces.

Table II – Summary of Lead Coatings Impacted - Greenville Yard Transfer Bridge 9, 10, 11, 12

Location	Fixture	Surface Color	Result (% Pb w/w)
Bridge & Apron Towers No. 9	Structural Steel Components	Black	10.22%
	Minor Steel Components – Hand Rails	Black	10.24%
	Installed Components – Machinery	Black	Assumed
Bridge & Apron Towers No. 10, 11, 12, 13	Structural Steel Components	Black	22.00%
	Structural Steel Framing for Walls and Roof	Orange / Black	Assumed
	Installed Components Machinery	Black	Assumed
Control House 11/12	Exterior Hand Rails Safety Markings	Yellow	Assumed
	Floor Interior	Gray	Assumed
	Cabinets/ Panels/ Transformers/ Operators Panels	Black / Gray	Assumed
	Door	Orange	Assumed
	Interior Hand Rails Safety Markings	Red	Assumed
	Main Power Distribution Panel Supports	Black / Orange	Assumed
Control House 9/10	Wood Window Frames	Gray	Assumed
Transfer & Fixed Bridge No. 9, 10, 11, 12	Steel Structure	Black	Assumed
Fixed Bridge No 11	Steel Structure Inside	Green, Yellow, White	Assumed
Barge 29	Cleats, Bumper Block	Yellow	Assumed

1.0 INTRODUCTION

Environmental Planning & Management, Inc. (EPM), as a sub consultant to **HDR**, performed inspections for the presence of asbestos containing materials (ACM), lead containing materials (LCM), and polychlorinated biphenyl containing caulk, glazing compounds, including translucent silicones, and creosote from fender systems that were suspect for the presence of PCBs, in connection with the Cross Harbor Freight Program – specifically portions of the Greenville Yard Development in Port Jersey, New Jersey.

The EPM field inspections for asbestos, lead, and PCBs were conducted on November 3, 4 and 7, 2011 by Environmental Planning & Management Frank Shkoditch and Michael Aprahamian.

The purpose of these inspections (and subsequent testing) was limited to the following tasks:

- Identify the location and quantity of asbestos containing materials (greater than 1% as measured by PLM, and TEM as applicable) within the scope of work that may be impacted;
- Identify the presence of lead of any concentration within the scope of work which may be impacted (in accordance with the OSHA Lead in Construction Standard); and
- Identify possible PCB containing caulks – glazing compounds.

In general, the scope of the Greenville Yard Development portion of the project is the eventual Phased Demolition of Existing Transfer Bridges, Towers and Fenders system No. 9, 10, 11, and 12; and the rehabilitation of Barge No. 29. Prior to this, the Repair of Existing Transfer Bridge and Fender System No. 11 will be performed to extend its service life.

EPM's scope of work consisted of the following Design Services Tasks:

1. Task C: Review design scope to understand the impacts to the various facility areas (renovation / demolition). Review all available past survey information and record plans to determine any specified or potential asbestos containing or lead containing materials and to determine additional areas of investigation;

2. Task D: Conduct visual inspections of the areas proposed to be impacted to identify locations of potential asbestos containing materials (ACM), potential lead containing materials (LCM), and potential PCB containing materials. Collect samples of suspect ACM, suspect lead paint, and potentially PCB containing materials for laboratory analysis. Submit the suspect ACM samples to a certified laboratory for Polarized Light Microscopy (PLM) analysis and/or Transmission Electron Microscopy (TEM) where applicable. Submit the suspect lead containing material samples to a certified laboratory for Flame Atomic Absorption Spectroscopy (FAAS). Submit the suspect PCB materials to a certified laboratory for Method 8082 chemical analysis;

3. Task E: Compile laboratory analysis results and information from the site investigations and present a formulated draft conclusions report. This includes the identification, location & quantity of asbestos containing materials (greater than 1% as measured by PLM, and TEM as applicable), the location of lead coatings (in any concentration) that

will be impacted by proposed renovations, and the identification of PCB containing materials (materials that exceed the threshold for PCBs greater than 50 PPM - to be classified as a RCRA bulk product waste – 40 CFR Part 761.3). Upon receiving comments, EPM will incorporate comments into a final report, which will become part of the overall Basis of Design Report.

2.0 ASBESTOS

This section describes the data collection activities including the site inspection and sample collection. Environmental Planning & Management personnel conducted an on-site inspection in association with the Greenville Yard Development project.

The field inspections for asbestos were conducted on November 3, 4 and 7, 2011. These inspections were conducted by Environmental Planning & Management certified AHERA (federal) and New York State Department of Labor (NYSDOL) Asbestos Inspector and Asbestos Designer Frank Slikoditch and certified New York State Department of Labor (NYSDOL) Asbestos Inspector Michael Aprahamian.

Copies of EPM company license and personnel certificates are presented in Appendix A.

2.1 Field Inspection / Asbestos Observations

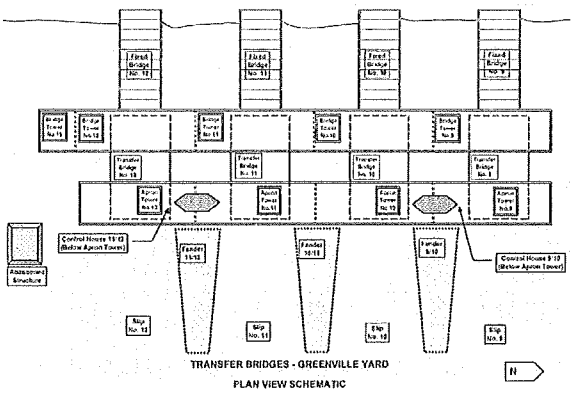
EPM surveyed all areas due to be impacted by the anticipated work that could be accessed, except as noted:

- The Apron Towers are not accessible due to the potential for collapse. These areas were investigated visually and suspect materials are presumed (by association with components common to the Bridge Tower) or assumed asbestos when observed. All quantities of presumed/assumed materials are estimated. These areas include: the Apron Towers upper mechanical rooms areas; the counter weight shaft enclosures; and the Transfer Bridge 9/10 Control House;
- The 11/12 Control House Electrical Panels were not sampled. The center main power distribution panel with associated wiring, wall mounted breaker panels, and two bridge control board cabinets were energized at the time of the survey preventing safe sampling. Furthermore, EPM was informed that the center main panel was designated of historical importance and was to be removed for inclusion into a museum and should not be destructively sampled. Suspect materials associated with these fixtures were assumed asbestos containing and quantified; and
- A stand-alone building structure within the slip area that would be where slip 13 was located was not investigated. This structure has been largely destroyed by a past fire. No access exists from the land, bridges or existing fender systems. Interviews with facility personnel indicated that this structure is not a part of the current design scope. If this structure is to be added in future design plans, access will have to be established prior to investigation.

EPM was not provided with any as-built plans, all information herein has been determined from actual site investigation.

Transfer Bridge Layout – Major Structures

For investigation and informational purposes; to visualize components interrelations and understand location of structures, the following is the layout of the site of each transfer bridge. Not all structures still exist in their entirety:



- Railroad tracks enter onto fixed bridges (over water);
- The railroad track crosses over a pivot point onto a transfer bridge. The transfer bridge's height is adjusted by cables to motors in overhead Bridge Towers (and ultimately to counterweights on the other end of the cable that fall between vertical support columns of Bridge Tower);
- Additional counterweights are situated between vertical support columns of the Apron Towers. Barges enter into the slips, the transfer bridge height is adjusted to the height of the barge at current tide height. The barge and Transfer Bridge are 'pinned' to one another. Height adjustments are made as railroad cars are loaded; and
- Control Houses contain the electrical controls and power distributions to control the motor operation.

Investigation Layout

The following is an outline of areas investigated:

BRIDGE TOWERS

Bridge Tower 9

Bridge Towers 10, 11, 12, 13 Remnants

APRON TOWERS

Apron Tower 9

Apron Towers 10, 11, 12

Transfer Bridge Control House 11/12

Lower Level Weight Shaft Area and Below Control Room

Control Room & Roof

Transfer Bridge Control House 9/10

TRANSFER BRIDGES

Transfer Bridge 9 (& Associated Fixed Bridge)

Transfer Bridge 10 (& Associated Fixed Bridge)

Transfer Bridge 11 (& Associated Fixed Bridge)

Transfer Bridge 12 (& Associated Fixed Bridge)

FENDER SYSTEM

BARGE 29

BRIDGE TOWERS - ASBESTOS

The Bridge Towers consist of rooms with mechanical equipment that are elevated above track level – supported by vertical steel columns. Some of the vertical columns are enclosed where they protect cabling to counterweights (referred to weight shaft areas). Other than weights, pulleys and some metallic electrical conduits, no other mechanical or electrical equipment was observed below upper area rooms.

Bridge Towers are numbered from 9 to 12, with 12 including remnants of Bridge Tower 13 (majority of this structure no longer exists). The Bridge Tower 13 remnants shall be included as a part of Bridge Tower 12 for any **asbestos** components found.

Bridge Tower 9 is constructed with different wall / ceiling materials, structural steel coatings appear to be different, and structural elements appear to be of different size and orientation. Interviews with facility personnel indicate that the original structure was destroyed in a fire in the 1930's. Therefore sampling of suspect **asbestos** structural elements will be homogenous to either Transfer Bridge 9, or Transfer Bridges 10, 11, 12 (including Bridge Tower 13 remnants). Non-structural elements that are suspect and sampled for **asbestos** will be grouped according to homogeneity (like materials grouped together).

Bridge Tower 9 (a.k.a. G9): The following is a summary of our observations:

- Walls and roof consist of corrugated cement panels bolted to steel. These may typically be asbestos containing. A demising wall between Bridge Tower 10 and between Bridge Towers 12 and 13 remnants is also constructed of these panels. This material was sampled as Bridge Tower 9 homogenous group 1;
- Window openings (no glazing panes or sashes remain) contain caulk on their outside perimeter. This material was sampled as Bridge Tower 9 homogenous group 3;
- Textured paint exists on exposed structural steel elements below walkway and on wall framing. Material is sporadic, but where it exists it is a thick coating that is brittle. Typically this type of coating may be asbestos containing. This material was sampled as Bridge Tower 9 homogenous group 7;
- Feeder cables to an abandoned electrical motor are covered with a braided cloth (over paper) that is suspect for asbestos. This material was sampled as Bridge Tower 9 homogenous group 10;
- Electrical relay motor controls, which are common to all Bridge Towers, was found to contain interior contact supports (a non-conductive support block). This material was sampled as a part of all Bridge Tower 9 and 10, 11, 12 - homogenous group 8;
- Electrical rotary limit switch motor controls, which are common to all Bridge Towers, was found to contain interior panels and wheels (non-conductive composite materials). These materials were sampled as a part of all Bridge Tower 9 and 10, 11, 12 - homogenous group 9;
- Motor control wire insulation, which is common to all Bridge Towers, was found to be braided (which is suspect for asbestos). This material was sampled as a part of all Bridge Tower 9 and 10, 11, 12 - homogenous group 12; and
- Motor gear housings have an inspection cover that contains a gasket. The gasket is rubber, which is not suspect for asbestos.

Bridge Tower 10, 11, 12, including Remnants of 13 (a.k.a. G10, G11, G12, G13): The following is a summary of our observations:

- Walls and roof consist of corrugated metal panels, bolted and strapped to structural steel framing. These corrugated panels are coated with a suspect asbestos tar (asphaltic) coating. The bolt attachment assembly includes suspect asbestos flat washers of a dense appearing material on their exterior sides. The metallic panel straps (interior building side) are covered with an asbestos suspect tar saturated cloth sleeve material. These materials were sampled as Bridge Tower 10, 11, 12 homogenous groups 2 (panel coating), 5 (washer), and 4 (strap coating);
- Loose and affixed motor brake pads are present and sampled as Bridge Tower 10, 11 homogenous group 6;
- Abandoned lighting wiring insulation is braided and sampled as Bridge Tower 10, 11 homogenous group 11;
- Textured paint exists on exposed structural steel elements below walkway and on wall framing. Material is sporadic, but where it exists it is a thin coating that is brittle. This material was sampled as Bridge Tower 10, 11 homogenous group 13;
- Electrical relay motor controls, which are common to all Bridge Towers, was found to contain interior contact supports (a non-conductive support block). This material was sampled as a part of all Bridge Tower 9 and 10, 11, 12 - homogenous group 8;
- Electrical rotary limit switch motor controls, which are common to all Bridge Towers, was found to contain interior panels and wheels (non-conductive composite materials). These materials were sampled as a part of all Bridge Tower 9 and 10, 11, 12 - homogenous group 9;
- Motor control wire insulation, which is common to all Bridge Towers, was found to be braided (which is suspect for asbestos). This material was sampled as a part of all Bridge Tower 9 and 10, 11, 12 - homogenous group 12; and
- Motor gear housings have an inspection cover that contains a gasket. The gasket is rubber, which is not suspect for asbestos.

APRON TOWERS - ASBESTOS

The Apron Towers consist of rooms with cables and pulleys that are elevated above movable hinged track platform (the transfer bridges between the fixed track bridge and floating barges) – all supported by vertical steel columns. Some of the vertical columns form enclosures where they protect cabling to moving counterweights (enclosures are referred to as weight shaft areas). The two weight shaft areas expand at track level to become Control Houses (adjacent to weight shaft areas), which control (through an operator) the transfer bridges.

The Apron Tower upper rooms are not accessible as they appear to be structural unsound and not safe to enter. These areas were investigated visually (from adjoining catwalk) and suspect materials are assumed asbestos (by association with components common to the Bridge Tower that were confirmed asbestos) or presumed to exist if visual observation was not possible. Apron Towers are numbered from 9 to 12.

Apron Tower 9 upper rooms are constructed with different wall / ceiling materials than Apron Towers 10, 11 and 12 but is identical in appearance (and therefore homogenous) to Bridge Tower 9 upper rooms. It is therefore assumed to have been reconstructed along with its counterpart Bridge Tower in the 1930's.

Apron Towers 10, 11 and 12 upper rooms are constructed with tar metal wall / ceiling panels which appear identical to Bridge Towers 10, 11 and 12 upper rooms (and therefore homogenous them).

The Apron Tower Control House 9/10 was not accessible due to the potential of collapse and these areas were investigated visually (from adjoining platform 9) and suspect materials are assumed asbestos (by association with components common to Control House 11/12) or presumed to exist if visual observation was not possible.

Apron Tower 9: The following is a summary of our observations:

- Corrugated wall and roof cement panels are similar to homogenous group 1 (Bridge Tower 9) are visible;
- No window sashes exist, but remnant window frames, potentially with caulk, similar to homogenous group 3 (Bridge Tower 9) are visible;
- From lower weight shafts, textured paint similar to homogenous group 7 (Bridge Tower 9) is visible; and
- From distant photos it is not possible to determine definitively if any electrical components still exist (although none were visible from limited viewing). Any materials found during demolition should be treated as suspect asbestos materials until a training and certified asbestos inspector either samples the suspect materials and finds them to be non-asbestos, or the suspect material can be grouped (due to homogeneity) with known materials investigated in the Bridge Towers.

Apron Tower 10, 11, 12: The following is a summary of our observations:

- Corrugated metal with tar coatings similar to homogenous group 2 (Bridge Towers 10-12) are visible;
- The bolt attachment assembly including the suspect asbestos dense flat washers similar to homogenous group 5 (Bridge Towers 10-12) are visible;
- The metallic panel straps with an asbestos suspect tar saturated cloth sleeve material similar to homogenous group 4 (Bridge Towers 10-12) are visible;
- Abandoned lighting wiring insulation similar to Bridge Towers 10-12 is visible;
- Textured paint on exposed structural steel elements similar to homogenous group 13 (Bridge Towers 10-12) is visible; and
- No motors, motor brakes, electrical control components are present.

Transfer Bridge 11/12 Control House

Lower Level Weight Shaft Area and Below Control Room: The following is a summary of our observations:

- Corrugated metal with tar coatings similar to homogenous group 2 (Bridge and Apron Towers 10-12) are visible on all exterior walls;
- The bolt attachment assembly including the suspect asbestos dense flat washers similar to homogenous group 5 (Bridge Towers 10-12) are visible;
- The metallic panel straps with an asbestos suspect tar saturated cloth sleeve material similar to homogenous group 4 (Bridge Towers 10-12) are visible;
- The underside of the Control room is covered by flat cement panels. This material was

sampled as Control House 11/12 homogenous group 1;
- Metal window frames with remnant glazing compound exist in four windows of this level. This material was sampled as Control House 11/12 homogenous group 2; and
- A red electrical isolation board (back panel) is abandoned within the weight shaft area. This material was sampled as Control House 11/12 homogenous group 3.

Control Room & Roof: The following is a summary of our observations:
- Corrugated metal with tar coatings similar to homogenous group 2 (Bridge and Apron Towers 10-12) are visible on all exterior walls;
- The bolt attachment assembly including the suspect asbestos flat washers similar to homogenous group 5 (Bridge Towers 10-12) are visible;
- The metallic panel straps with an asbestos suspect tar saturated cloth sleeve material similar to homogenous group 4 (Bridge Towers 10-12) are visible;
- Interior walls are covered by flat cement panels. This material was sampled as Control House 11/12 homogenous group 1;
- Metal window frames with glazing compound exist in eight windows of this level. This material was sampled as Control House 11/12 homogenous group 6;
- Compressed light brown paperboard covers the walls. This material was sampled as Control House 11/12 homogenous group 4;
- Compressed dark brown with a black surface paperboard covers some former window openings. This material was sampled as Control House 11/12 homogenous group 5;
- Wood window frames with glazing compound exist in two windows of this level. This material was sampled as Control House 11/12 homogenous group 2;
- Perimeter caulks around entry door and four of the windows. This material was sampled as Control House 11/12 homogenous group 7;
- Two wall mounted space heaters with no backer insulation but braided wire insulation is present and was sampled as Control House 11/12 homogenous group 8;
- 'Operator's Consoles' (11 and 12) contained the following suspect asbestos materials that were not sampled – Ebony terminal strips, boards, relay arrays, isolation strips and braided wire insulation. Consoles are metal on top and sides;
- Emergency Generator Position Panel contained the following suspect asbestos materials that were not sampled – Ebony blocks;
- Building wire insulation for lights and outlets is braided and assumed asbestos containing homogenous to lighting wiring in Bridge Tower homogenous group 12;
- Fuse box (unmarked) to left of PSE & G Utility Feed contained the following suspect asbestos materials that were not sampled – Ebony boards and braided wire insulation;
- PSE & G Utility Feed contained no suspect asbestos containing materials;
- House Breakers contained no suspect asbestos containing materials;
- Heater Disconnect (Behind Entry Door) contained the following suspect asbestos materials that were not sampled – Brown Backer / Insulation Boards;
- Old Breakers contained the following suspect asbestos materials that were not sampled – Ebony boards; duct sealant; and braided wire insulation; and
- Main Power Distribution Panel contained the following suspect asbestos materials that were not sampled – Ebony backer boards; arc shields, relay wraps, terminal strips, and braided wire insulation (not homogenous to house wiring).

Transfer Bridge 9/10 Control House

Lower Level Weight Shaft Area and Below Control Room: These areas were not accessible and the following materials are presumed to exist due to their presence in Transfer Bridge 11/12 Control House:
- Corrugated metal with tar coatings similar to homogenous group 2 (Bridge and Apron Towers 10-12) are visible on all exterior walls;
- The bolt attachment assembly including the suspect asbestos dense flat washers similar to homogenous group 5 (Bridge Towers 10-12) are visible;
- The metallic panel straps with an asbestos suspect tar saturated cloth sleeve material similar to homogenous group 4 (Bridge Towers 10-12) are visible;
- Flat cement panels are not visible on the underside of the control room;
- Metal window frames with remnant glazing compounds are presumed; and
- Electrical isolation board (red) is presumed present.

Control Room & Roof: These areas were not accessible but partially observable (mostly from the north elevation); the following materials are assumed asbestos (where observed) or presumed to exist due to their presence in Transfer Bridge 11/12 Control House:
- Corrugated metal with tar coatings similar to homogenous group 2 (Bridge and Apron Towers 10-12) are visible on all exterior walls;
- The bolt attachment assembly including the suspect asbestos dense flat washers similar to homogenous group 5 (Bridge Towers 10-12) are visible;
- The metallic panel straps with an asbestos suspect tar saturated cloth sleeve material similar to homogenous group 4 (Bridge Towers 10-12) are visible;
- Interior walls are covered by flat cement panels homogenous to group 1 (Control House 11/12);
- Wood window frames with glazing compound similar to homogenous group 6 (Control House 11/12) is visible;
- Metal window frames with glazing compound similar to homogenous group 2 (Control House 11/12) is visible;
- Perimeter caulks around windows similar to homogenous group 7 (Control House 11/12) are visible;
- Building wire insulation for lights and outlets is visible and assumed braided similar to Control House 11/12;
- Metal 'Operator Consoles' are visible and assumed to contained similar suspect ebony terminal strips, boards, relay arrays, isolation strips and braided wire insulation as Control House 11/12;
- Main Power Distribution Panel with assumed asbestos components similar to Control House 11/12 is visible;
- Compressed paperboard was not observed but may be present similar to homogenous groups 4 and 5 (Control House 11/12);
- Wall mounted space heaters with braided wire insulation were not observed but may be present similar to homogenous group 8 (Control House 11/12). These heaters (from similar heaters utilized for the NYC Transit System) may also contain asbestos backer insulation; and
- No wall electrical panels / cabinets were observed but may be present.

TRANSFER BRIDGES - ASBESTOS

Transfer Bridge 9 & Associated Fixed Bridge: The following is a summary of our observations:

- Fixed Bridge is a heavily rusted structure with track rail plates still attached but no running rails remain. No suspect asbestos containing materials observed;
- Transfer Bridge 9 is constructed of steel framework below and rectangular timbers bolted to the framework. Track rail plates remain, but no running rails. The timber bolts are recessed on the surface of the timber and filled with a tar-like material (3" diameter, approximately 2" thick) sampled as Ramp homogenous group 1; and
- No other suspect asbestos containing materials observed.

Transfer Bridge 10 & Associated Fixed Bridge: The following is a summary of our observations:

- Fixed Bridge is a heavily rusted structure with no running rails remain. No suspect asbestos containing materials observed;
- Transfer Bridge 10 is constructed of steel framework below and rectangular timbers bolted to the framework. Track rail plates remain, but no running rails. The timber bolts are recessed on the surface of the timber but unlike Transfer Bridge 10, no material fills the recess holes; and
- No other suspect asbestos containing materials observed.

Transfer Bridge 11 & Associated Fixed Bridge: The following is a summary of our observations:

- Fixed Bridge is a heavily rusted structure on its outward facing surfaces but has been repainted on it's interior faces. This is the only functioning bridge. No suspect asbestos containing materials observed;
- Transfer Bridge 11 is constructed of steel framework below and rectangular timbers bolted to the framework. This is a functioning transfer bridge. The timber bolts are recessed on the surface of the timber and filled with a tar-like material (3" diameter, approximately 2" thick) homogenous to Ramp homogenous group 1; and
- No other suspect asbestos containing materials observed.

Transfer Bridge 12 & Associated Fixed Bridge: The following is a summary of our observations:

- Fixed Bridge is a heavily rusted structure with track rail plates and rails still attached. No suspect asbestos containing materials observed; and
- Transfer Bridge 12 remnants consist of the pivot portion of the steel framework only. No other portions of the structure remain. No other suspect asbestos containing materials observed.

FENDER SYSTEMS - ASBESTOS The following is a summary of our observations:

- The wood fender system is mostly bare with sections of remaining creosote coating visible. This material was sampled as Fender 10/11 homogenous group 1; and
- Bumper materials are automotive and truck tires, which are not suspect for asbestos. The remaining components of the fender system are metal catwalks.

BARGE 29 - ASBESTOS The following is a summary of our observations:

- The topside deck surface is covered with a fine aggregate asphalt coating (1 ¼" thick). This material was sampled as Barge homogenous group 1; and
- Interior areas were not entered. Visual observation through port holes did not reveal any suspect asbestos containing materials.

2.2 Sample Collection

The following sampling strategy for EPM's asbestos sampling conducted of suspect asbestos containing materials was developed and followed. The delineation of homogeneous areas at the site was based on criteria including material type and location. Materials suspected of containing asbestos were identified for each area inspected. When suspect ACMs were found, representative bulk samples from each homogeneous material (material which is uniform by color, texture, construction/application date, and general appearance) were collected. A minimum of three (3) bulk samples were collected from each miscellaneous homogenous material.

A summary of all asbestos containing materials identified or assumed during this survey, along with the description, location, and anticipated quantity to be impacted can be found in Table I.

The asbestos sample location photographs are presented in Appendix B. The asbestos laboratory analysis results are included in Appendix C.

2.3 Analytical Procedures

The bulk samples were delivered to Alpha Labs located at 14-26 28th Avenue, Long Island City, New York. This laboratory is accredited by the New York State Environmental Laboratory Accreditation Program (ELAP # 11833), and the National Voluntary Laboratory Accreditation Program (NVLAP# 200691-0). Laboratory accreditation documentation is included as Appendix F.

Samples in a homogeneous group are analyzed until either the entire group is analyzed (all the results are negative) or a positive result is obtained. When a positive result occurs, the remaining samples in the group do not require analysis.

The samples were analyzed by Polarized Light Microscopy (PLM). Bulk Sample analysis are accomplished by using a polarized light microscope equipped with dispersion staining as described by the Interim Method for the Determination of Asbestos in Bulk Insulation, Federal Register/Volume 47, No. 103/May 27, 1987. This method of analysis involves the immersion of a suspect material in a solution of known refractive index and the subjection to illumination by polarized light. The resulting color display enables mineral identification.

According to ELAP guidelines, quantitative TEM analysis is the only method that can be used to determine if non-friable organically bound materials (NOBs) can be considered non-asbestos containing. Therefore, samples qualified as NOBs and inconclusive by PLM, require TEM confirmation.

2.4 Survey Results

Laboratory analytical results from the analysis of the EPM collected bulk samples are summarized in Table III.

Table III - Asbestos Sample Laboratory Analysis Results – Greenville Yard
(November 3, 4 and 7, 2011)

Sample #	Material	Sample Location	Description (Condition, Friability)	PLM	TEM
G9-1A	Cement Board	Bridge Tower 9 at North Window Opening	Gray, Corrugated Panels, Good Condition, Non-friable	16% CH	
G9-1B		Bridge Tower 9 at West Window Opening		NA/PS	
G12-1C		Bridge Tower 12 at South Partition Wall		NA/PS	
G10-2A	Metal Panel Coating	Bridge Tower 10 at Roof Panel	Black Tar Coating, fair to Poor Condition (Varies), Non-friable	14.9 % CH	
G10-2B		Bridge Tower 10 at West Wall Panel		17.6% CH	
G12-2C		Bridge Tower 12 at Roof Panel		15.8% CH	
G9-3A	Caulk	Bridge Tower 9 at North Window Opening	Gray, Brittle, Sporadic Remnants, Poor Condition, Non-friable	5.6% CH, Trace ANTH	
G9-3B		Bridge Tower 9 at East Window Opening – 2nd from North		NA/PS	
G9-3C		Bridge Tower 9 at West Window Opening – 4th from North		NA/PS	
G12-4A	Cloth on Metal Straps Supporting Metal Panels	Bridge Tower 12 at West Wall	Black, Coarse Weave, May Be Tar Impregnated, Fair Condition, Non-friable	NAD Inconcl.	NAD
G11-4B		Bridge Tower 11 at West Wall		NAD Inconcl.	NAD
G10-4C		Bridge Tower 10 at East Wall		NAD Inconcl.	NA
G10-5A	Dense Washers	Bridge Tower 10 West Wall –Outside at North Window	Black, Fine Matt Cloth, Tar Impregnated, Good Condition, Non-friable	13.3% CH	
G11-5B		Bridge Tower 11 East Wall – Outside South of Entrance Doorway		NA/PS	
G12-5C		Bridge Tower 12 West Wall –Outside at South Window		NA/PS	
G11-6A	Brake Pads	Bridge Tower 11 Loose Motor Brake	Tan, Fibrous Upon Mechanical Disturbance, Semi-circular Bake Pad, Good Condition, Non-friable	28.6% CH	
G10-6B		Bridge Tower 10 North Motor Brake		NA/PS	
G10-6C		Bridge Tower 10 South Motor Brake		NA/PS	

Table III - Asbestos Sample Laboratory Analysis Results – Greenville Yard
(November 3, 4 and 7, 2011)

G9-7A	Textured Paint	Bridge Tower 9 at North Floor Opening Below Walkway	Flat Black, Thick (1/16"), Brittle, Sporadic Coating, Poor Condition, Non-friable	NAD Inconcl.	NAD
G9-7B		Bridge Tower 9 at South of Machinery at Floor Opening Below Walkway		NAD Inconcl.	NAD
G9-7C		Bridge Tower 9 Below Window Opening at East Side South Window		NAD Inconcl.	NA
G9-8A	Relay Block Supports for Contacts	Bridge Tower 9 Inside Relay Box	Fine, Black Composite Material, Good Condition, Non-friable	NAD Inconcl.	NAD
G9-8B				NAD Inconcl.	NAD
G9-8B				NAD Inconcl.	NA
G9-9A	Rotary Limit Switch Contact Support & Wheel	Bridge Tower 9 Inside Rotary Limit Switch –Panel	Fine, Black Composite Material, Good Condition, Non-friable	18.2% CH	
G9-9B		Bridge Tower 9 Inside Rotary Limit Switch –Wheel		NA/PS	
G12-9C		Bridge Tower 12 Inside Rotary Limit Switch –Panel		NA/PS	
G9-10A1	Wire Insulation Braided Cloth	Bridge Tower 9 Inside Abandoned Motor Feed Cables	Brown Cloth	NAD	
G9-10B1				NAD	
G9-10C1				NAD	
G9-10A2	Wire Insulation Paper	Bridge Tower 9 Inside Abandoned Motor Feed Cables	Brown Paper	NAD Inconcl.	NAD
G9-10B2				NAD Inconcl.	NAD
G9-10C2				NAD Inconcl.	NA
G10-11A1	Braided Wire Insulation Outer	Bridge Tower 10 Building Lighting Wiring - Abandoned	Outer White Cloth, Fair Condition, Non-friable	NAD	
G10-11B1				NAD	
G12-11C1		Bridge Tower 12 Building Lighting Wiring - Abandoned		NAD	
G10-11A2	Braided Wire Insulation Inner	Bridge Tower 10 Building Lighting Wiring - Abandoned	Inner Core, Fair Condition, Non-friable	NAD Inconcl.	NAD
G10-11B2				NAD Inconcl.	NAD
G12-11C2		Bridge Tower 12 Building Lighting Wiring - Abandoned		NAD Inconcl.	NA

Table III - Asbestos Sample Laboratory Analysis Results – Greenville Yard
(November 3, 4 and 7, 2011)

G12-12A1	Braided Wire Insulation - Exterior	Bridge Tower 12 Limit Switch Control Wiring - Abandoned	Outer Cloth, Fair Condition, Non-friable	NAD	
G9-12B1		Bridge Tower 9 Relay Switch Control Wiring - Abandoned		NAD	
G9-12C1		Bridge Tower 9 Limit Switch Control Wiring - Abandoned		NAD	
G12-12A2	Braided Wire Insulation - Interior	Bridge Tower 12 Limit Switch Control Wiring - Abandoned	Inner Core, Fair Condition, Non-friable	NAD Inconcl.	NAD
G9-12B2		Bridge Tower 9 Relay Switch Control Wiring - Abandoned		NAD Inconcl.	NAD
G9-12C2		Bridge Tower 9 Limit Switch Control Wiring - Abandoned		NAD Inconcl.	NA
G11-13A	Textured Paint	Bridge Tower 11 North of North Motor Floor Opening	Black, Thin (<1/16"), Brittle, Sporadic Coating, Poor Condition, Non-friable	NAD Inconcl.	NAD
G11-13B		Bridge Tower 11 South of South Motor Floor Opening		NAD Inconcl.	NAD
G12-13C		Bridge Tower 12 South of South Screw Floor Opening		NAD Inconcl.	NA
B-1A	Asphalt	Barge Top Deck at Stern - Center	1-1/4" Thick, Fine Aggregate, Black Asphalt, Poor Condition, Non-friable	NAD Inconcl.	NAD
B-1B		Barge Top Deck at Midship - Starboard		NAD Inconcl.	NAD
B-1C		Barge Top Deck at Bow - Center		NAD Inconcl.	NA
F10/11-1A	Creosote	Fender Between 10/11 East End	Black, Tar-like Coating on Wood, Sporadic, Poor Condition, Non-friable	NAD Inconcl.	NAD
F10/11-1B		Fender Between 10/11 11 Side Midway		NAD Inconcl.	NAD
F10/11-1C		Fender Between 10/11 11 Side Near Dock		NAD Inconcl.	NA
RG9-1A	Tar Plug	Apron Loading Ramp 9 Over Tie Bolt Recess South East Corner	Black, Hard, Tar-like Plug, Fair Condition, Non-friable	9.9% CH	
RG9-1B		Apron Loading Ramp 9 Over Tie Bolt Recess South Center		NA/PS	
RG9-1C		Apron Loading Ramp 9 Over Tie Bolt Recess Center		NA/PS	
CH-1A	Cement Board	Control House 11/12 Exterior Underside -North	Gray, ¼" Flat Panel, Fair Condition (Localized Damage), Non-friable	23.5% CH	
CH-1B		Control House 11/12 Interior –Wall Near Door Hinge		NA/PS	
CH-1C		Control House 11/12 Interior –West Wall Center		NA/PS	

Table III - Asbestos Sample Laboratory Analysis Results – Greenville Yard
(November 3, 4 and 7, 2011)

CH-2A	Glazing Compound	Weight Area Under Control House 11/12 - Center Window With Metal Frame	White, Poor Condition, Non-friable	NAD Inconcl.	0.58% ANTH
CH-2B		Weight Area Under Control House 11/12 - South East Window With Metal Frame		NAD Inconcl.	Trace ANTH
CH-2C		Control House 11/12 South West Window With Metal Frame		NAD Inconcl.	NA
CH-3A	Electrical Isolation Panel	Weight Area Under Control House 11/12 – South Column	Red over White Core Panel, Good Condition, Non-friable	NAD	
CH-3B				NAD	
CH-3C				NAD	
CH-4A	Wall Board	Control House 11/12 Interior – Wall in North East Corner	Light Brown, Fibrous Paper, White Top Coating, Fair Condition, Friable	NAD	
CH-4B				NAD	
CH-4C				NAD	
CH-5A	Wall Board	Control House 11/12 Interior - South East Window Cover	Dark Brown, Fibrous Paper, Black Top Coating, Fair Condition, Friable	NAD	
CH-5B				NAD	
CH-5C		Control House 11/12 Interior – South West Window Cover		NAD	
CH-6A	Glazing Compound	Control House 11/12 South West Corner Window With Wood Frame	White, Poor Condition, Non-friable	NAD Inconcl.	Trace ANTH
CH-6B				NAD Inconcl.	Trace ANTH
CH-6C		Control House 11/12 West Wall South Window With Wood Frame		NAD Inconcl.	NA
CH-7A	Caulk	Control House 11/12 South West Corner Window Frame	Gray, Poor Condition, Non-friable	Trace ANTH Inconcl	
CH-7B		Control House 11/12 West Wall South Door Frame		0.93% CH, 0.93% ANTH	
CH-7C		Control House 11/12 North West Corner Window Frame		NA/PS	
CH-8A	Wire Insulation	Control House 11/12 North East Wall Heater	White Outer Braided Cover, Fair Condition, Non-friable	66.7% CH	
CH-8B				NA/PS	
CH-8C				NA/PS	

Table Legend
PLM: Polarized Light Microscopy
TEM: Transmission Electron Microscopy
NAD: No Asbestos Detected
CH: Chrysotile Asbestos
ANTH: Anthophyllite Asbestos
NAD Inconclusive: No Asbestos Detected by PLM and Material is an NOB, TEM required
NA: Not Analyzed
NA/PS: Not Analyzed, Positive Stop

2.5 Conclusions

Asbestos materials were identified by laboratory analysis as shown above. Additional assumed asbestos containing materials were also identified. These materials are summarized in Table I. Photographs are found in Appendix B.

3.0 LEAD SURVEY

Environmental Planning & Management personnel conducted on-site assessments of the painted surfaces present that may be impacted by the proposed scope of work. Environmental Planning & Management SSPC C5 Supervisor/Competent Person Frank Shkoditch and Michael Aprahamian collected paint samples for lead analysis.

3.1 Observations

BRIDGE TOWERS - LEAD

Bridge Tower 9

- Black paint on walkway hand rail was sampled as sample 1.
- Black textured paint on structural steel through-out was sampled as sample 2.
- Machinery appears to have residual site applied black homogenous to other blacks and is assumed lead containing.

Bridge Towers 10, 11, 12, 13 Remnants

- Black textured paint on structural steel below walkway was sampled as sample 3.
- Structural Steel framing for walls and roof appear to be orange lead (with sporadic black over it) and is assumed lead containing.
- Machinery appears to have residual site applied black homogenous to other blacks and is assumed lead containing.

APRON TOWERS- LEAD

Apron Tower 9

- Black textured paint on structural steel through-out is homogenous to sample 2.

Apron Towers 10, 11, 12

- Black textured paint on structural steel through-out is homogenous to sample 3.

Transfer Bridge Control House 11/12

Lower Level Weight Shaft Area and Below Control Room

- Miscellaneous Safety Markings in yellow are present and are assumed lead containing.

Control Room & Roof

- Minimal gray paint remains on floor and is assumed lead containing.
- Wall electrical cabinets / panels / transformers / Operator's Panels have factory applied black and gray coatings and are assumed lead containing.
- The interior side of entrance door has orange paint and is assumed lead containing.
- Safety rail in front of main power distribution panel is coated in red paint and is assumed lead containing.
- Interior supports for main power distribution panel is coated in black and orange paints and are assumed lead containing.

Transfer Bridge Control House 9/10

- Minimal gray remnant paint remains on wood window frames and is assumed lead containing.

TRANSFER BRIDGES- LEAD

Transfer Bridge 9 (& Associated Fixed Bridge)

- Minimal black remnant paint remains on fixed bridge / transfer platform steel structure and is assumed lead containing.

Transfer Bridge 10 (& Associated Fixed Bridge)

- Minimal black remnant paint remains on fixed bridge / transfer platform steel structure and is assumed lead containing.

Transfer Bridge 11 (& Associated Fixed Bridge)

- Miscellaneous Safety Markings in yellow and recent green (inside) coatings are present and assumed lead containing.
- Minimal black and white remnant paint remains on exterior of fixed bridge / transfer platform steel structure and is assumed lead containing.

Transfer Bridge 12 (& Associated Fixed Bridge)

- Minimal black remnant paint remains on fixed bridge / transfer platform steel structure and is assumed lead containing

FENDER SYSTEM - LEAD

- No paint coatings present.

BARGE 29- LEAD

- Miscellaneous Safety Markings in yellow are present and are assumed lead containing.
- The interior, viewed through portholes, appeared not contain painted surfaces.

3.2 Sample Collection

The following sampling strategy for suspect lead containing paint was developed. A visual inspection was conducted by EPM to identify any suspect lead containing materials. The visual inspection was utilized by EPM to design an effective sampling strategy. Sample locations were selected to accurately represent all areas and/or components with the potential to be affected or disturbed as a result of the anticipated work. The delineation of homogeneous areas at the site was based on color of paint and location. One (1) sample of suspect lead containing paint was collected from each homogeneous area. In accordance with ASTM Designation: E 1729-95, "Standard Practice for Field Collection of Dried Paint Samples for Lead Determination by Atomic Spectrometry Techniques", a 2.5 cm x 2.5 cm template was utilized to collect the paint samples.

During the preliminary stages of sample collection, EPM received an email directive from the Port Authority instructing us that only a preliminary screening of painted surfaces should to be performed. The email stated that due to the age of the structure, all painted surfaces shall be treated as a lead coating and only those coatings where sampling indicated that it does not contain detectable levels of lead could be treated as non-lead coatings. EPM analyzed already collected samples only as all remaining coatings were highly probable for containing lead.

3.3 Analytical Procedures

The suspect lead containing paint samples were prepared and analyzed by modified EPA SW-

846 Methods 3050 & 7420 using Flame Atomic Absorption Spectroscopy.

3.4 Survey Results

A summary of the laboratory analysis results for the samples collected by EPM are included in Table IV. The laboratory lead sample analysis reports are included in Appendix D.

Table IV – Lead Sample Result Data Sheet – Greenville Yard (November 3, 4 and 7, 2011)

Sample Number	Item Description	Fixture -Location	Surface Color	Substrate	Result % Pb w/w
G9-PB-01	Hand Rail	Bridge Tower G9	Black	Metal	10.24 %
G9-PB-02	Structural Steel Below Walkway	Bridge Tower G9	Black	Metal	10.22 %
G11-PB-03	Structural Steel Below Walkway	Bridge Tower G11	Black	Metal	22.00 %

3.5 Conclusions

All painted surfaces tested have been found to contain detectable levels of lead within the identified scope of work. In addition to tested surfaces, other painted surfaces were assumed to be lead containing. Any impact to these confirmed and assumed lead coated surfaces as a result of this access improvement project will need to address OSHA Lead In Construction Standard (29 CFR 1926.62) requirements, Resource Conservation and Recovery Act (RCRA) requirements, as well as general health and safety issues with regard to protection of employees and the general public. Any contractor who performs renovations would need to establish their means and methods for protecting employees and the general public during demolition / reconstruction.

4.0 PCB CAULKS / GLAZING COMPOUNDS / CREOSOTE

Environmental Planning & Management personnel conducted on-site assessments of potentially PCB containing materials present that may be impacted by the proposed scope of work. Environmental Planning & Management personnel Frank Slikoditch and Michael Aprahamian collected bulk samples for PCB analysis.

4.1 Observations

BRIDGE TOWERS- PCB MISC.

Bridge Tower 9

- Window openings (no glazing panes or sashes remain) contain caulk on their outside perimeter. This material was sampled as G9-PCB-02.

Bridge Towers 10, 11, 12, 13 Remnants

- No caulks or glazing compounds exist for PCB sampling.

APRON TOWERS- PCB MISC.

Apron Tower 9

- Window openings (no glazing panes or sashes remain) appear to contain caulk homogenous to sample G9-PCB-02.

Apron Towers 10, 11, 12

- No caulks or glazing compounds exist for PCB sampling.

Transfer Bridge Control House 11/12

Lower Level Weight Shaft Area and Below Control Room

- Metal window frames with remnant glazing compound exist. This material was sampled as a part of sample CH-PCB-03.

Control Room & Roof

- Metal window frames with remnant glazing compound exist. This material was sampled as a part of sample CH-PCB-03.
- Wood window frames with remnant glazing compound exist. This material was sampled as a part of sample CH-PCB-04.
- Perimeter caulks around entry door and windows. This material was sampled as CH-PCB-05.
- Clear silicone at north east window repairs. This material was sampled as CH-PCB-06.
- Black silicone at north west window repairs. This material was sampled as CH-PCB-07.
- White silicone at north center window repairs. This material was sampled as CH-PCB-08.

Transfer Bridge Control House 9/10

Lower Level Weight Shaft Area and Below Control Room

- Metal window frames with remnant glazing compound exist. This material was assumed to be homogenous to sample CH-PCB-03.

Control Room & Roof

- Metal window frames with remnant glazing compound exist. This material was assumed to be homogenous to sample CH-PCB-03.
- Wood window frames with remnant glazing compound exist. This material was assumed to be homogenous to sample CH-PCB-04.
- Perimeter caulks around and windows. This material was assumed to be homogenous to sample CH-PCB-05.

TRANSFER BRIDGES- PCB MISC.

Transfer Bridge 9 (& Associated Fixed Bridge)

- No caulks or glazing compounds exist for PCB sampling.

Transfer Bridge 10 (& Associated Fixed Bridge)

- No caulks or glazing compounds exist for PCB sampling.

Transfer Bridge 11 (& Associated Fixed Bridge)

- No caulks or glazing compounds exist for PCB sampling.

Transfer Bridge 12 (& Associated Fixed Bridge)

- No caulks or glazing compounds exist for PCB sampling.

FENDER SYSTEM- PCB MISC.

- The wood fender system is mostly bare with sections of remaining creosote coating visible. This material was sampled as F10/11-PCB-01.

BARGE 29- PCB MISC.

- No caulks or glazing compounds exist for PCB sampling.

4.2 Sample Collection

Caulk, glazing compounds and creosote coating samples collected for asbestos analyses were also analyzed for PCBs (see asbestos Survey Observations). These samples were submitted to a laboratory that performed analysis of a single composite sample of each homogeneous group.

Additionally, translucent silicone caulks (non-asbestos suspect) were collected and analyzed for PCBs.

4.3 Analytical Procedures

The samples of suspect PCB containing materials were analyzed by EPA method 8082.

4.4 Survey Results

Laboratory analytical results from the analysis of the EPM collected bulk samples are summarized in Table V. Laboratory analysis results are included in Appendix E.

Table V – Summary of PCB Analysis Results – Greenville Yard Transfer Bridges 9, 10, 11, 12 (November 3, 4 and 7, 2011)				
Sample #	**Group Location**	**Description**	**PCB Content parts per million**	**Hazardous Waste?**
F10/11-PCB-01	Fender System Between G10 / G11	Creosote	0.97 PPM	No
G9-PCB-02	Bridge Tower G9 at Window Openings	Caulk	0.38 PPM	No
CH-PCB-03	Weight Area & Control House 11/12 - Metal Framed Windows	Glazing Compound	6.5 PPM	No
CH-PCB-04	Control House 11/12 - Wood Framed Windows	Glazing Compound	6.1 PPM	No
CH-PCB-05	Control House 11/12 Window & Door Frames	Caulk	0.25 PPM	No
CH-PCB-06	Control House 11/12 North East Window Glazing Repairs	Silicone Caulk	5.2 PPM	No
CH-PCB-07	Control House 11/12 North West Window Glazing Repairs	Silicone Caulk	7.0 PPM	No
CH-PCB-08	Control House 11/12 North Center Window Glazing Repairs	Silicone Caulk	1.9 PPM	No

4.5 Conclusions

Samples result contained detectable levels of PCBs; however the none of the materials contained hazardous levels (> 50 ppm).

Appendix A

Personnel and Company Licenses

NEW YORK STATE - DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH
LICENSE AND CERTIFICATE UNIT
STATE CAMPUS BUILDING 12
ALBANY, NY 12240

ASBESTOS HANDLING LICENSE

Environmental Planning & Management, Inc.
Suite 100
1983 Marcus Avenue

Lake Success, NY 11042

FILE NUMBER: 99-1017
LICENSE NUMBER: 28623
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 10/17/2011
EXPIRATION DATE: 11/30/2012

Duly Authorized Representative – Aphrodite Socratos

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Maureen A. Cox, Director
FOR THE COMMISSIONER OF LABOR

DH 432 (4-07)

United States Environmental Protection Agency

This is to certify that

Environmental Planning & Management, Inc.

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402(a)(1), and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.225.

In the Jurisdiction of:

New York

This certification is valid from the date of issuance and expires April 9, 2012

NY-20009-2
Certification #
MAR 12 2009
Issued On

Kenneth S. Stoker, P.E., DEP, OEE, Chief
Pesticides & Toxic Substances Branch

FRANK SHKODITCH

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

FRANK J SHKODITCH
CLASS(EXPIRES)
C ATEC(02/12) D INSP(02/12)
H PM (02/12) I PD (02/12)

CERT# 90-15752
DMV# 650384431
MUST BE CARRIED ON ASBESTOS PROJECTS

EYES BRO
HAIR BLN
HGT 5' 11"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
ROOM 161A BUILDING 12
STATE OFFICE CAMPUS
ALBANY NY 12240

A – Asbestos Handler
B – Restricted Handler-Allied Trades
C – Air Sampling Technician
D – Inspector
E – Management Planner
F – Operations and Maintenance
G - Supervisor
H – Project Monitor
I – Project Designer

SSPC The Society for Protective Coatings

CERTIFICATE OF COMPLETION

Frank Shkoditch

has successfully completed a course and exam

C-5 Supervisor/Competent Person Refresher Training for Deleading of Industrial Structures

and is awarded

.8 Continuing Education Units

AUTHORIZED IACET PROVIDER

IACET Provider # 3375

American Board of Industrial Hygiene
Approved Provider #08-3245

Florida Board of Professional Engineers
Provider #0004326
Sequence #0000067

Executive Director

President

Forest Hills, NY
Location

December 3-4, 2010
Date

Adam McGreevy
Instructor(s)

MICHAEL APRAHAMIAN

STATE OF NEW YORK - DEPARTMENT OF LABOR
ASBESTOS CERTIFICATE

MICHAEL R APRAHAMIAN
CLASS(EXPIRES)
D INSP(02/12)

CERT# 97-02865
DMV# 247439542
MUST BE CARRIED ON ASBESTOS PROJECTS

EYES BRO
HAIR BRO
HGT 5' 11"

IF FOUND RETURN TO:
NYSDOL - L&C UNIT
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ALBANY NY 12240

A – Asbestos Handler
B – Restricted Handler-Allied Trades
C – Air Sampling Technician
D – Inspector
E – Management Planner
F – Operations and Maintenance
G - Supervisor
H – Project Monitor
I – Project Designer

CERTIFICATE OF COMPLETION

Michael Aprahamian

has successfully completed a course and exam

C-5 Supervisor/Competent Person Refresher Training for Deleading of Industrial Structures

and is awarded

.8 Continuing Education Units

AUTHORIZED IACET PROVIDER

IACET Provider # 3375
American Board of Industrial Hygiene Approved Provider #08-3245
Florida Board of Professional Engineers Provider #0004326 Sequence #0000067

Executive Director

President

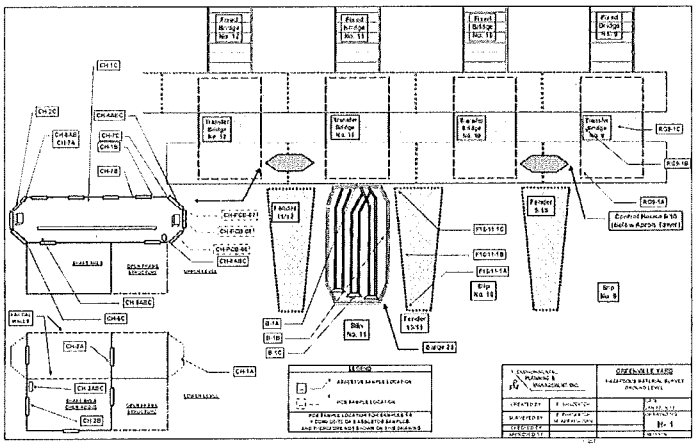
Forest Hills, NY
Location

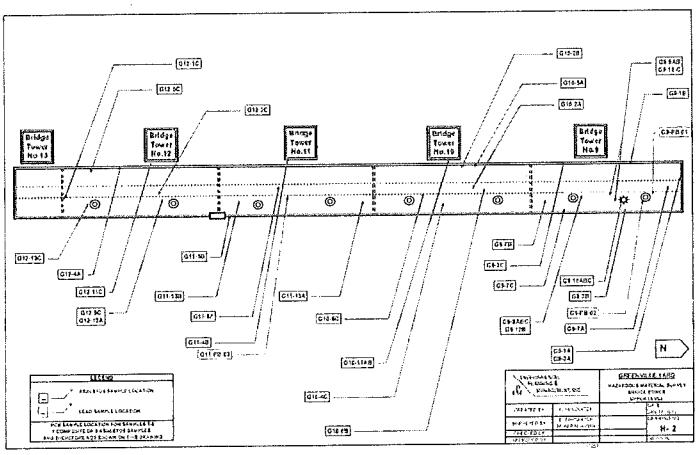
December 3-4, 2010
Date

Adam McGreevy
Instructor(s)

Appendix B

Asbestos / Lead / PCB Sample Location Diagrams
Asbestos / Lead / PCB Sample Location Photographs





Appendix C

Asbestos Bulk Sample Laboratory Analytical Data

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.

11-11-077

BULK SAMPLE CHAIN OF CUSTODY - ASBESTOS

1083 Marcus Avenue, Suite 109
Lake Success, New York 11042
(516) 328-1194 Fax (516) 393-0811

2011 NOV 15 AM 6:50

Nov 3, 4 & 7, 2011
Collection Date (s)

PROJECT INFORMATION

CLIENT	CONTRACTS	LOCATION
HDR	1- (644.515); 2- (644.516); 5- (644.515); 10 (Pending)	Greenville Yard
AGENCY	**EPM NUMBER**	**AREA**
PANY&NJ	11057	Transfer Bridges & Barge

LAB INSTRUCTIONS

ANALYSIS REQUESTED: ASBESTOS PLM ---> TEM — TURNAROUND TIME: 72 Hours

SPECIAL ANALYSIS REQUIREMENTS: STANDARD ELAP ANALYSIS (LAYERED ANALYSIS IF PRESENT, PLM ANALYSIS TO 1ST POSITIVE PER SAMPLE GROUP & STOP, TAKE NOBs THAT ARE PLM NEGATIVE TO TEM ANALYSIS, STOP AT 1ST POSITIVE PER GROUP). TEM ANALYZE FIRST 2 SAMPLES ONLY1

FAX RESULTS TO: 516-393-0811 — FAX RESULTS TO THE ATTENTION OF: Frank Shkoditch

SAMPLER: Frank J. Shkoditch (PRINT NAME/SIGNATURE) — 11-14-11 1500 (RELINQUISHMENT DATE / TIME)

LAB RECEIPT: (PRINT NAME/SIGNATURE) — 11/15/11 (RECEIPT DATE / TIME)

SAMPLE NUMBER	MATERIAL	SAMPLE LOCATION	SAMPLE DESCRIPTION		
			VISUAL OBSERVATIONS	CONDITION	FRIABLE ?
G9- 1 A	CEMENT BOARD	BRIDGE TOWER G9 AT NORTH WINDOW OPENING	GRAY, CORRUGATED PANELS	GOOD	NO
G9- 1 B		BRIDGE TOWER G9 AT WEST WINDOW OPENING			
G12- 1 C		BRIDGE TOWER G12 AT SOUTH PARTITION WALL			
G10- 2 A	METAL PANEL COATING	BRIDGE TOWER G10 AT ROOF PANEL	BLACK, ASPHALTIC COATING	FAIR-POOR (VARIES)	NO
G10- 2 B		BRIDGE TOWER G10 AT WEST WALL PANEL			
G12- 2 C		BRIDGE TOWER G12 AT ROOF PANEL			
G9- 3 A	CAULK	BRIDGE TOWER G9 AT NORTH WINDOW OPENING	GRAY, BRITTLE, SPORADIC	POOR	NO
G9- 3 B		BRIDGE TOWER G9 AT EAST WINDOW OPENING -2ND FROM NORTH			
G9- 3 C		BRIDGE TOWER G9 AT WEST WINDOW OPENING -4TH FROM NORTH			
G12- 4 A	CLOTH ON METAL STRAPS SUPPORTING METAL PANELS	BRIDGE TOWER G12 AT WEST WALL	BLACK, COARSE WEAVE, MAY BE TAR IMPREGNATED	FAIR	NO
G11- 4 B		BRIDGE TOWER G11 AT WEST WALL			
G10- 4 C		BRIDGE TOWER G10 AT EAST WALL			

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HDR	1- (644.515); 2- (644.516); 5- (644.515); 10 (Pending)	Greenville Yard
AGENCY	EPM NUMBER	AREA
PANY&NJ	11057	Transfer Bridges & Barge

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FAX RESULTS TO: 516-393-0811 — FAX RESULTS TO THE ATTENTION OF: Frank Shkoditch

SAMPLER: Frank J. Shkoditch — 11-14-11 1500

LAB RECEIPT: — 11/15/11

SAMPLE NUMBER	MATERIAL	SAMPLE LOCATION	SAMPLE DESCRIPTION		
			VISUAL OBSERVATIONS	CONDITION	FRIABLE ?
G10- 5 A	CLOTH WASHER	BRIDGE TOWER G10 WEST WALL - OUTSIDE AT NORTH WINDOW	BLACK, FINE MATT CLOTH, TAR IMPREGNATED	GOOD	NO
G11- 5 B		BRIDGE TOWER G11 EAST WALL - OUTSIDE SOUTH OF ENTRANCE DOORWAY			
G12- 5 C		BRIDGE TOWER G12 WEST WALL - OUTSIDE AT SOUTH WINDOW			
G11- 6 A	BRAKE PADS	BRIDGE TOWER G11 LOOSE MOTOR BRAKE	TAN, FIBROUS SEMI-CIRCLE BRAKE PAD (DRUM STYLE)	GOOD	NO
G10- 6 B		BRIDGE TOWER G10 NORTH MOTOR BRAKE			
G10- 6 C		BRIDGE TOWER G10 SOUTH MOTOR BRAKE			
G9- 7 1	TEXTURED PAINT	BRIDGE TOWER G9 AT NORTH FLOOR OPENING BELOW WALKWAY	FLAT BLACK, THICK (1/16"), BRITTLE, SPORADIC	POOR	NO
G9- 7 B		BRIDGE TOWER G9 SOUTH OF MACHINERY AT FLOOR OPENING BELOW WALKWAY			
G9- 7 C		BRIDGE TOWER G9 BELOW WINDOW OPENING AT EAST SIDE SOUTH WINDOW			
G9- 8 A	RELAY BLOCK SUPPORTS FOR CONTACTS	BRIDGE TOWER G9 INSIDE RELAY BOX	FINE, BLACK COMPOSITE	GOOD	NO
G9- 8 B		BRIDGE TOWER G9 INSIDE RELAY BOX			
G9- 8 C		BRIDGE TOWER G9 INSIDE RELAY BOX			

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.

11-11-097

BULK SAMPLE CHAIN OF CUSTODY - ASBESTOS

1983 Marcus Avenue, Suite 108
Lake Success, New York 11042
(516) 326-1194 Fax (516) 326-0827

2011 NOV 15 AM 6:50

Nov 3, 4 & 7, 2011
Collection Date (s)

PROJECT INFORMATION

CLIENT	CONTRACTS	LOCATION
HDR	1- (644.515); 2- (644.516); 5- (644.515); 10 (Pending)	Greenville Yard
AGENCY	**EPM NUMBER**	**AREA**
PANY&NJ	11057	Transfer Bridges & Barge

LAB INSTRUCTIONS

ANALYSIS REQUESTED: ASBESTOS PLM ---> TEM — TURNAROUND TIME: 72 Hours

SPECIAL ANALYSIS REQUIREMENTS: STANDARD ELAP ANALYSIS (LAYERED ANALYSIS IF PRESENT, PLM ANALYSIS TO 1ST POSITIVE PER SAMPLE GROUP & STOP, TAKE NOBs THAT ARE PLM NEGATIVE TO TEM ANALYSIS, STOP AT 1ST POSITIVE PER GROUP). TEM ANALYZE FIRST 2 SAMPLES ONLY1

FAX RESULTS TO: 516-393-0811 — FAX RESULTS TO THE ATTENTION OF: Frank Shkoditch

SAMPLER: Frank J. Shkoditch — PRINT NAME/SIGNATURE — 11-14-11 1500 — RELINQUISHMENT DATE / TIME

LAB RECEIPT: — PRINT NAME/SIGNATURE — 11/15/11 — RECEIPT DATE / TIME

SAMPLE NUMBER	MATERIAL	SAMPLE LOCATION	SAMPLE DESCRIPTION		
			VISUAL OBSERVATIONS	CONDITION	FRIABLE ?
G9- 9 A	ROTARY LIMIT SWITCH CONTACT SUPPORT & WHEELS	BRIDGE TOWER G9 INSIDE ROTARY LIMIT SWITCH -PANEL	FINE, BLACK COMPOSITE	GOOD	NO
G9- 9 B		BRIDGE TOWER G9 INSIDE ROTARY LIMIT SWITCH -WHEEL			
G12- 9 C		BRIDGE TOWER G12 INSIDE ROTARY LIMIT SWITCH -PANEL			
G9- 10 A1	WIRE INSULATION BRAIDED CLOTH	BRIDGE TOWER G9 INSIDE ABANDONED MOTOR FEED	BROWN CLOTH	FAIR	NO
G9- 10 B1					
G9- 10 C1					
G9- 10 A2	WIRE INSULATION PAPER	BRIDGE TOWER G9 INSIDE ABANDONED MOTOR FEED	BROWN PAPER	GOOD	NO
G9- 10 B2					
G9- 10 C2					
G10- 11 A	BRAIDED WIRE INSULATION	BRIDGE TOWER G10 BUILDING LIGHTING WIRING - ABANDONED	OUTER CLOTH	FAIR	NO
G10- 11 B					
G12- 11 C		BRIDGE TOWER G12 BUILDING LIGHTING WIRING - ABANDONED			
G12- 12 A	BRAIDED WIRE INSULATION	BRIDGE TOWER G12 LIMIT SWITCH CONTROL WIRING - ABANDONED	OUTER CLOTH	FAIR	NO
G9- 12 B		BRIDGE TOWER G9 RELAY SWITCH CONTROL WIRING - ABANDONED			
G9- 12 C		BRIDGE TOWER G9 LIMIT SWITCH CONTROL WIRING - ABANDONED			

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.

11-11-097

BULK SAMPLE CHAIN OF CUSTODY - ASBESTOS

2011 NOV 15 AM 6:50

Nov 3, 4 & 7, 2011
Collection Date (s)

PROJECT INFORMATION

HDR | 1- (644.515); 2- (644.516); 5- (644.515); 10 (Pending) | Greenville Yard
PANY&NJ | 11057 | Transfer Bridges & Barge

LAB INSTRUCTIONS

ANALYSIS REQUESTED: ASBESTOS PLM ---> TEM — TURNAROUND TIME: 72 Hours

SPECIAL ANALYSIS REQUIREMENTS: STANDARD ELAP ANALYSIS (LAYERED ANALYSIS IF PRESENT, PLM ANALYSIS TO 1ST POSITIVE PER SAMPLE GROUP & STOP, TAKE NOBs THAT ARE PLM NEGATIVE TO TEM ANALYSIS, STOP AT 1ST POSITIVE PER GROUP). TEM ANALYZE FIRST 2 SAMPLES ONLY1

FAX RESULTS TO: 516-393-0811 — FAX RESULTS TO THE ATTENTION OF: Frank Shkoditch

SAMPLER: Frank J. Shkoditch — 11-14-11 1500

LAB RECEIPT: — 11/15/11

SAMPLE NUMBER	MATERIAL	SAMPLE LOCATION	SAMPLE DESCRIPTION		
			VISUAL OBSERVATIONS	CONDITION	FRIABLE ?
G11- 13 A	TEXTURED PAINT	BRIDGE TOWER G11 NORTH OF NORTH MOTOR FLOOR OPENING	BLACK, THIN (<1/16"), BRITTLE, SPORADIC	POOR	NO
G11- 13 B		BRIDGE TOWER G11 SOUTH OF SOUTH MOTOR FLOOR OPENING			
G12- 13 C		BRIDGE TOWER G12 SOUTH OF SOUTH SCREW FLOOR OPENING			
B- 1 A	ASPHALT	BARGE TOP DECK AT STERN- CENTER	1 1/4" THICK, FINE AGGREGATE, BLACK ASPHALT	FAIR	NO
B- 1 B		BARGE TOP DECK AT MIDSHIP- STARBOARD			
B- 1 C		BARGE TOP DECK AT BOW- ENTER			
F10/11- 1 A	CREOSOTE	FENDER BETWEEN G10 / G11 -EAST END	BLACK, TAR-LIKE COATING ON WOOD, SPORADIC	POOR	NO
F10/11- 1 B		FENDER BETWEEN G10 / G11 -G11 SIDE MIDWAY IN			
F10/11- 1 C		FENDER BETWEEN G10 / G11 -G11 SIDE NEAR DOCK			
RG9- 1 A	TAR PLUG	APRON LOADING RAMP G9 OVER TIE BOLT RECESS SOUTH EAST CORNER	BLACK, HARD, TAR-LIKE PLUG	FAIR	NO
RG9- 1 B		APRON LOADING RAMP G9 OVER TIE BOLT RECESS SOUTH CENTER			
RG9- 1 C		APRON LOADING RAMP G9 OVER TIE BOLT RECESS CENTER			

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.

11-11-077

BULK SAMPLE CHAIN OF CUSTODY - ASBESTOS

1583 Marcus Avenue, Suite 109
Lake Success, New York 11042
(516) 328-1194 Fax (516) 393-0811

2011 NOV 15 AM 6:50

Nov 3, 4 & 7, 2011
Collection Date (s)

PROJECT INFORMATION

CLIENT	CONTRACTS	LOCATION
HDR	1- (644.515); 2- (644.516); 5- (644.515); 10 (Pending)	Greenville Yard
AGENCY	**EPM NUMBER**	**AREA**
PANY&NJ	11057	Transfer Bridges & Barge

LAB INSTRUCTIONS

ANALYSIS REQUESTED: ASBESTOS PLM ---> TEM — TURNAROUND TIME: 72 Hours

SPECIAL ANALYSIS REQUIREMENTS: STANDARD ELAP ANALYSIS (LAYERED ANALYSIS IF PRESENT, PLM ANALYSIS TO 1ST POSITIVE PER SAMPLE GROUP & STOP, TAKE NOBs THAT ARE PLM NEGATIVE TO TEM ANALYSIS, STOP AT 1ST POSITIVE PER GROUP). TEM ANALYZE FIRST 2 SAMPLES ONLY1

FAX RESULTS TO: 516-393-0811 — FAX RESULTS TO THE ATTENTION OF: Frank Shkoditch

SAMPLER: Frank J. Shkoditch (PRINT NAME/SIGNATURE) — 11-14-11 1500 (RELINQUISHMENT DATE / TIME)

LAB RECEIPT: (PRINT NAME/SIGNATURE) — 11/15/11 (RECEIPT DATE / TIME)

SAMPLE NUMBER	MATERIAL	SAMPLE LOCATION	SAMPLE DESCRIPTION: VISUAL OBSERVATIONS	CONDITION	FRIABLE ?
CH-1 A	CEMENT BOARD	CONTROL HOUSE 11/12 EXTERIOR UNDERSIDE - NORTH	GRAY, 1/4" FLAT PANEL	FAIR (MINOR DAMAGE)	NO
CH-1 B		CONTROL HOUSE 11/12 INTERIOR - WALL NEAR DOOR HINGE			
CH-1 C		CONTROL HOUSE 11/12 INTERIOR WEST WALL CENTER			
CH-2 A	GLAZING COMPOUND	WEIGHT AREA UNDER CONTROL HOUSE 11/12 - CENTER WINDOW METAL FRAME	WHITE	POOR	NO
CH-2 B		WEIGHT AREA UNDER CONTROL HOUSE 11/12 - SOUTH EAST WINDOW METAL FRAME			
CH-2 C		CONTROL HOUSE 11/12 SOUTH WEST WINDOW METAL FRAME			
CH-3 A/B/C	ELECTRICAL ISOLATION PANEL	WEIGHT AREA UNDER CONTROL HOUSE 11/12 - SOUTH COLUMN	RED OVER WHITE CORE	GOOD	NO
CH-4 A/B/C	WALL BOARD	CONTROL HOUSE 11/12 INTERIOR - WALL IN NORTH EAST CORNER	LIGHT BROWN FIBROUS PAPER, WHITE TOP COATING	FAIR	YES
CH-5 A	WALL BOARD	CONTROL HOUSE 11/12 INTERIOR - SOUTH EAST WINDOW COVER	DARK BROWN FIBROUS PAPER, BLACK TOP COATING	FAIR	YES
CH-5 B		CONTROL HOUSE 11/12 INTERIOR - SOUTH EAST WINDOW COVER			
CH-5 C		CONTROL HOUSE 11/12 INTERIOR - SOUTH WEST WINDOW COVER			

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.

11-11-077

BULK SAMPLE CHAIN OF CUSTODY - ASBESTOS

1583 Marcus Avenue, Suite 109
Lake Success, New York 11042
(516) 328-1194 Fax (516) 393-0811

2011 NOV 15 AM 6:50

Nov 3, 4 & 7, 2011
Collection Date (s)

PROJECT INFORMATION

CLIENT	CONTRACTS	LOCATION
HDR	1- (644.515); 2- (644.516); 5- (644.515); 10 (Pending)	Greenville Yard
AGENCY	**EPM NUMBER**	**AREA**
PANY&NJ	11057	Transfer Bridges & Barge

LAB INSTRUCTIONS

ANALYSIS REQUESTED: ASBESTOS PLM ---> TEM — TURNAROUND TIME: 72 Hours

SPECIAL ANALYSIS REQUIREMENTS: STANDARD ELAP ANALYSIS (LAYERED ANALYSIS IF PRESENT, PLM ANALYSIS TO 1ST POSITIVE PER SAMPLE GROUP & STOP, TAKE NOBs THAT ARE PLM NEGATIVE TO TEM ANALYSIS, STOP AT 1ST POSITIVE PER GROUP). TEM ANALYZE FIRST 2 SAMPLES ONLY1

FAX RESULTS TO: 516-393-0811 — FAX RESULTS TO THE ATTENTION OF: Frank Shkoditch

SAMPLER: Frank J. Shkoditch (PRINT NAME/SIGNATURE) — 11-14-11 1500 (RELINQUISHMENT DATE / TIME)

LAB RECEIPT: (PRINT NAME/SIGNATURE) — 11/15/11 (RECEIPT DATE / TIME)

SAMPLE NUMBER	MATERIAL	SAMPLE LOCATION	SAMPLE DESCRIPTION: VISUAL OBSERVATIONS	CONDITION	FRIABLE ?
CH-6 A	GLAZING COMPOUND	CONTROL HOUSE 11/12 SOUTH WEST CORNER WINDOW WOOD FRAME	WHITE	POOR	NO
CH-6 B					
CH-6 C		CONTROL HOUSE 11/12 WEST WALL SOUTH WINDOW WOOD FRAME			
CH-7 A	CAULK	CONTROL HOUSE 11/12 SOUTH WEST CORNER WINDOW FRAME	GRAY	POOR	NO
CH-7 B		CONTROL HOUSE 11/12 WEST WALL SOUTH DOOR FRAME			
CH-7 C		CONTROL HOUSE 11/12 NORTH WEST CORNER WINDOW FRAME			
CH-8 A/B/C	WIRE INSULATION	CONTROL HOUSE 11/12 NORTH EAST WALL HEATER	WIRE BRAIDED OUTER COATING	FAIR	NO

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BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave. Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Client Sample ID# / Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION			PLM			TEM
				% Ashed Organic Component	% Acid Soluble Inorganic Component	% Acid Insoluble Inorganic Component	% Estimated Non-Asbestos Fibrous Material	% Non-Fibrous Matrix Material	ASBESTOS % & Type	ASBESTOS % & Type
G9 1A 11-11-077-1	Cement board	Bridge tower G9 at north window opening	Lt gray Homogeneous Friable	Not Applicable			0%	84%	16% CH	
G9 1B 11-11-077-2	Cement board	Bridge tower G9 at west window opening	Lt gray Homogeneous Friable	Not Applicable					NA/PS	
G12 1C 11-11-077-3	Cement board	Bridge tower G12 at south pavilion wall	Lt gray Homogeneous Friable	Not Applicable					NA/PS	
G10 2A 11-11-077-4	Metal panel coating	Bridge tower G10 at roof panel	Black Homogeneous Non Friable	66.1	2.9	41.0	0%	85.1%	14.9% CH	
G10 2B 11-11-077-5	Metal panel coating	Bridge tower G10 at west wall panel	Black Homogeneous Non Friable	58.1	2.1	39.7	0%	82.4%	17.6% CH	
G12 2C 11-11-077-6	Metal panel coating	Bridge tower G12 at roof panel	Black Homogeneous Non Friable	63.0	1.3	35.6	0%	84.2%	15.8% CH	
G9 3A 11-11-077-7	Caulk	Bridge tower G9 at north window opening	Gray Homogeneous Non Friable	25.0	10.8	64.1	0%	94.6%	5.4% CH Trace ANTH	
G9 3B 11-11-077-8	Caulk	Bridge tower G9 at east window opening 2nd from north	Gray Homogeneous Non Friable	23.6	4.0	71.9			NA/PS	
G9 3C 11-11-077-9	Caulk	Bridge tower G9 at west window opening 4th from north	Gray Homogeneous Non Friable	10.5	5.1	76.4			NA/PS	
G12 4A 11-11-077-10	Cloth cement shape supporting metal panels	Bridge tower G12 at west wall	Black Homogeneous Non Friable	66.3	1.0	2.7	80% CELL	20%	NAD Inconclusive	NAD
G11 4B 11-11-077-11	Cloth cement shape supporting metal panels	Bridge tower G11 at west wall	Black Homogeneous Non Friable	60.0	7.4	12.7	80% CELL	20%	NAD Inconclusive	NAD
G10 4C 11-11-077-12	Cloth cement shape supporting metal panels	Bridge tower G10 at east wall	Black Homogeneous Non Friable	95.4	0.8	3.8	80% CELL	20%	NAD Inconclusive	Analysis not requested by client

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BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave -Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Client Sample ID# / Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION			PLM			TEM
				% Ashed Organic Component	% Acid Soluble Inorganic Component	% Acid Insoluble Inorganic Component	% Estimated Non-Asbestos Fibrous Material	% Non Fibrous Matrix Material	ASBESTOS % & Type	ASBESTOS % & Type
G10 5A 11-11-077-13	Cloth washer	Bridge tower G10 west wall outside lft north window	Black Homogeneous Non Friable	57.0	13.1	29.9	0%	86.7%	13.3% CH	
G11 5B 11-11-077-14	Cloth washer	Bridge tower G11 East wall outside S of entrance doorway	Black Homogeneous Non Friable	66.9	11.4	31.7			NA/PS	
G12 5C 11-11-077-15	Cloth washer	Bridge tower G12 west wall outside lft south window	Black Homogeneous Non Friable	62.1	6.8	31.1			NA/PS	
G11 6A 11-11-077-16	Brake pads	Bridge tower G11 loose motor brake	Dark brown Homogeneous Friable	Not Applicable				40% CELL	31.4%	28.6%CH
G12 6B 11-11-077-17	Brake pads	Bridge tower G12 north motor brake	Dark Brown Homogeneous Friable	Not Applicable					NA/PS	
G10 6C 11-11-077-18	Brake pads	Bridge tower G10 south motor brake	Tan Homogeneous Friable	Not Applicable					NA/PS	
G9 7A 11-11-077-19	Textured paint	Bridge tower G9 at north face opening below walkway	Gray/orange Homogeneous Non Friable	37.1	10.3	52.7	0%	100%	NAD Inconclusive	NAD
G9 7B 11-11-077-20	Textured paint	Bridge tower G9 south of machinery floor opening below walkway	Gray Homogeneous Non Friable	38.7	16.8	44.5	0%	100%	NAD Inconclusive	NAD
G9 7C 11-11-077-21	Textured paint	Bridge tower G9 throw window opening at side of window	Gray Homogeneous Non Friable	47.0	17.7	35.8	0%	100%	NAD Inconclusive	Analysis not requested by client
G9 8A 11-11-077-22	Rebar block supports for contacts	Bridge tower G9 inside relay box	Black Homogeneous Non Friable	97.4	0.5	2.1	0%	100%	NAD Inconclusive	NAD
G9 8B 11-11-077-23	Relay block supports for contacts	Bridge tower G9 inside relay box	Black Homogeneous Non Friable	97.6	1.2	1.3	0%	100%	NAD Inconclusive	NAD
G9 8C 11-11-077-24	Relay block supports for contacts	Bridge tower G9 inside relay box	Black Homogeneous Non Friable	97.2	0.0	2.8	0%	100%	NAD Inconclusive	Analysis not requested by client

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Tel: (718) 482-7525 Fax: (718) 482-7524 www.alphaanalytic.com

BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave.-Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Client Sample ID# Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION % Ashed Organic Component	% Acid Soluble Inorganic Component	% Acid Insoluble Inorganic Component	PLM % Estimated Non-Asbestos Fibrous Material	% Non-Fibrous Matrix Material	ASBESTOS % & Type	TEM ASBESTOS % & Type
G9-9A 11-11-077-25	Rotary limit switch contact support & wheels	Bridge tower G9 inside rotary limit switch panel	Black Homogeneous Friable	Not Applicable			0%	81.8%	18.2% CH	
G9-9B 11-11-077-26	Rotary limit switch contact support & wheels	Bridge tower G9 inside rotary limit switch wheel	Black Homogeneous Friable	Not Applicable					NA/PS	
G12-9C 11-11-077-27	Rotary limit switch contact support & wheels	Bridge tower G12 inside rotary limit switch panel	Black Homogeneous Friable	Not Applicable					NA/PS	
G9-10A.1 11-11-077-28	Wire insulation braided cloth	Bridge tower G9 inside abandoned motor feed	Dark brown Homogeneous Friable	Not Applicable			80% CELL	20%	NAD	
G9-10B.1 11-11-077-29	Wire insulation braided cloth	Bridge tower G9 inside abandoned motor feed	Dark brown Homogeneous Friable	Not Applicable			80% CELL	20%	NAD	
G9-10C.1 11-11-077-30	Wire insulation braided cloth	Bridge tower G9 inside abandoned motor feed	Dark brown Homogeneous Friable	Not Applicable			60% CELL	40%	NAD	
G9-10A.2 11-11-077-31	Wire insulation paper (with tar)	Bridge tower G9 inside abandoned motor feed	Black Homogeneous Non Friable	72.0	18.4	9.6	0%	100%	NAD Inconclusive	NAD
G9-10B.2 11-11-077-32	Wire insulation paper (with tar)	Bridge tower G9 inside abandoned motor feed	Black Homogeneous Non Friable	78.3	4.3	17.4	0%	100%	NAD Inconclusive	NAD
G9-10C.2 11-11-077-33	Wire insulation paper (with tar)	Bridge tower G9 inside abandoned motor feed	Black Homogeneous Non Friable	78.2	16.0	5.7	0%	100%	NAD Inconclusive	Analysis not requested by client
G10-11A1 11-11-077-34	Braided wire insulation (exterior cloth)	Bridge tower G10 building lighting wiring-abandoned	Dark brown Homogeneous Friable	Not Applicable			95% CELL	5%	NAD	
G10-11A2 11-11-077-35	Braided wire insulation (inner core)	Bridge tower G10 building lighting wiring-abandoned	Gray Homogeneous Non Friable	19.0	74.6	6.4	0%	100%	NAD Inconclusive	NAD
G10-11B1 11-11-077-36	Braided wire insulation (exterior cloth)	Bridge tower G10 building lighting wiring abandoned	Dark brown Homogeneous Friable	Not Applicable			95% CELL	5%	NAD	

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BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave.-Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Client Sample ID# Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION % Ashed Organic Component	% Acid Soluble Inorganic Component	% Acid Insoluble Inorganic Component	PLM % Estimated Non-Asbestos Fibrous Material	% Non-Fibrous Matrix Material	ASBESTOS % & Type	TEM ASBESTOS % & Type
G10-11B2 11-11-077-37	Braided wire insulation (inner core)	Bridge tower G10 building lighting wiring abandoned	Gray Homogeneous Non Friable	17.7	71.6	10.7	0%	100%	NAD Inconclusive	NAD
G12-11C1 11-11-077-38	Braided wire insulation (exterior cloth)	Bridge tower G12 building lighting wiring abandoned	Dark brown Homogeneous Friable	Not Applicable			95% CELL	5%	NAD	
G12-11C2 11-11-077-39	Braided wire insulation (inner core)	Bridge tower G12 building lighting wiring abandoned	Gray Homogeneous Non Friable	41.2	55.3	3.5	0%	100%	NAD Inconclusive	Analysis not requested by client
G12-12A1 11-11-077-40	Braided wire insulation (exterior cloth)	Bridge tower G12 limit switch control wiring-abandoned	Dark brown Homogeneous Friable	Not Applicable			90% CELL	10%	NAD	
G12-12A2 11-11-077-41	Braided wire insulation (inner core)	Bridge tower G12 limit switch control wiring-abandoned	Black Homogeneous Non Friable	55.1	16.7	28.3	0%	100%	NAD Inconclusive	NAD
G9-12B1 11-11-077-42	Braided wire insulation (exterior cloth)	Bridge tower G9 relay switch control wiring-abandoned	Dark brown Homogeneous Friable	Not Applicable			80% CELL 10% SYNTH	10%	NAD	
G9-12B2 11-11-077-43	Braided wire insulation (inner core)	Bridge tower G9 relay switch control wiring-abandoned	Black Homogeneous Non Friable	61.7	23.8	14.5	0%	100%	NAD Inconclusive	NAD
G9-12C1 11-11-077-44	Braided wire insulation (exterior cloth)	Bridge tower G9 limit switch control wiring-abandoned	Dark brown Homogeneous Friable	Not Applicable			95% CELL	5%	NAD	
G9-12C2 11-11-077-45	Braided wire insulation (inner core)	Bridge tower G9 limit switch control wiring-abandoned	Black Homogeneous Non Friable	63.1	23.8	13.1	0%	100%	NAD Inconclusive	Analysis not requested by client
G11-13A 11-11-077-46	Textured paint	Bridge tower G11 north of north motor floor opening	Gray/orange Homogeneous Non Friable	44.8	12.5	42.7	0%	100%	NAD Inconclusive	NAD
G11-13B 11-11-077-47	Textured paint	Bridge tower G11 south of south motor floor opening	Gray/tan Homogeneous Non Friable	43.7	12.7	43.7	0%	100%	NAD Inconclusive	NAD
G12-13C 11-11-077-48	Textured paint	Bridge tower G12 south of south screw floor opening	Gray/tan Homogeneous Non Friable	37.5	7.8	54.7	0%	100%	NAD Inconclusive	Analysis not requested by client

14-26 28th Avenue Long Island City, NY 11102
Tel: (718) 482-7525 Fax: (718) 482-7524 [illegible]

BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave.-Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Client Sample ID# Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION % Ashed Organic Component	% Acid Soluble Inorganic Component	% Acid Insoluble Inorganic Component	PLM % Estimated Non-Asbestos Fibrous Material	% Non-Fibrous Matrix Material	ASBESTOS % & Type	TEM ASBESTOS % & Type
B-1A 11-11-077-49	Asphalt	Barge top deck at stern deck	Black Homogeneous Non Friable	12.1	33.6	54.3	0%	100%	NAD Inconclusive	NAD
B-1B 11-11-077-50	Asphalt	Barge top deck at midship starboard	Black Homogeneous Non Friable	12.1	5.2	82.7	0%	100%	NAD Inconclusive	NAD
B-1C 11-11-077-51	Asphalt	Barge top at bow [illegible]	Black Homogeneous Non Friable	10.6	4.2	85.2	0%	100%	NAD Inconclusive	Analysis not requested by client
F10/11-1A 11-11-077-52	Creosote	Fender between G10/G11 east end	Black Homogeneous Non Friable	96.3	0.7	2.9	0%	100%	NAD Inconclusive	NAD
F10/11-1B 11-11-077-53	Creosote	Fender between G10/G11-G11 side midway at	Black Homogeneous Non Friable	77.6	5.0	17.3	0%	100%	NAD Inconclusive	NAD
F10/11-1C 11-11-077-54	Creosote	Fender between G10/G11-G11 side near deck	Black Homogeneous Non Friable	95.5	3.2	1.3	0%	100%	NAD Inconclusive	Analysis not requested by client
RG9-1A 11-11-077-55	Tar plug	Apron loading ramp G9 over tie bolt holes SE [illegible]	Black Homogeneous Non Friable	32.4	20.6	46.6	0%	90.1%	9.9% CH	
RG9-1B 11-11-077-56	Tar plug	Apron loading ramp G9 over tie bolt holes South center	Black Homogeneous Non Friable	31.0	25.6	43.4			NA/PS	
RG9-1C 11-11-077-57	Tar plug	Apron loading ramp G9 over tie bolt holes at center	Black Homogeneous Non Friable	33.2	15.9	50.8			NA/PS	
CH-1A 11-11-077-58	Cement board	Control house 11/12 exterior under [illegible] north	Gray Homogeneous Friable	Not Applicable			0%	76.5%	23.5% CH	
CH-1B 11-11-077-59	Cement board	Control house 11/12 interior underside wall near door hinge	Gray Homogeneous Friable	Not Applicable					NA/PS	
CH-1C 11-11-077-60	Cement board	Control house 11/12 interior west wall center	Gray Homogeneous Friable	Not Applicable					NA/PS	

14-26 28th Avenue Long Island City, NY 11102
Tel: (718) 482-7525 Fax: (718) 482-7524 [illegible]

BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave.-Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Client Sample ID# Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION % Ashed Organic Component	% Acid Soluble Inorganic Component	% Acid Insoluble Inorganic Component	PLM % Estimated Non-Asbestos Fibrous Material	% Non-Fibrous Matrix Material	ASBESTOS % & Type	TEM ASBESTOS % & Type
CH-2A 11-11-077-61	Glazing compound	Weight area under control house 11/12 [illegible] window metal frame	Gray Homogeneous Non Friable	7.0	69.9	23.1	0%	100%	NAD Inconclusive	0.58% ANTH
CH-2B 11-11-077-62	Glazing compound	Weight area under control house 11/12 south east window metal frame	Gray Homogeneous Non Friable	6.7	89.6	3.8	0%	100%	NAD Inconclusive	Trace ANTH
CH-2C 11-11-077-63	Glazing compound	Control house 11/12 south west window metal frame	Gray Homogeneous Non Friable	5.3	73.3	21.4	0%	100%	NAD Inconclusive	Analysis not requested by client
CH-3A 11-11-077-64	Electrical isolation panel	Weight area under control house 11/12- south column	Beige Homogeneous Friable	Not Applicable			60% CELL	40%	NAD	
CH-3B 11-11-077-65	Electrical isolation panel	Weight area under control house 11/12- south column	Beige Homogeneous Friable	Not Applicable			60% CELL	40%	NAD	
CH-3C 11-11-077-66	Electrical isolation panel	Weight area under control house 11/12- south column	Beige Homogeneous Friable	Not Applicable			60% CELL	40%	NAD	
CH-4A 11-11-077-67	Wall board	Control house 11/12 interior wall in north east corner	Lt. brown Homogeneous Friable	Not Applicable			90% CELL	10%	NAD	
CH-4B 11-11-077-68	Wall board	Control house 11/12 interior wall in north east corner	Lt. brown Homogeneous Friable	Not Applicable			90% CELL	10%	NAD	
CH-4C 11-11-077-69	Wall board	Control house 11/12 interior wall in north east corner	Lt. brown Homogeneous Friable	Not Applicable			90% CELL	10%	NAD	
CH-5A 11-11-077-70	Wall board	Control house 11/12 interior south east window cover	Dark brown Homogeneous Friable	Not Applicable			90% CELL	10%	NAD	
CH-5B 11-11-077-71	Wall board	Control house 11/12 interior south east window cover	Dark brown Homogeneous Friable	Not Applicable			90% CELL	10%	NAD	
CH-5C 11-11-077-72	Wall board	Control house 11/12 interior south west window cover	Dark brown Homogeneous Friable	Not Applicable			90% CELL	10%	NAD	

BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave -Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Client Sample ID# Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION			PLM			TEM
				% Ashed Organic Component	% Acid Soluble Inorganic Component	% Acid Insoluble Inorganic Component	% Estimated Non-Asbestos Fibrous Material	% Non-Fibrous Matrix Material	ASBESTOS % & Type	ASBESTOS % & Type
CH-6A 11-11-077-73	Glazing compound	Control house 11/12 south west corner window wood frame	Tan Homogeneous Non Friable	7.3	58.2	34.4	0%	100%	NAD Inconclusive	Trace ANTH
CH-6B 11-11-077-74	Glazing compound	Control house 11/12 south west corner window wood frame	Tan Homogeneous Non Friable	7.2	50.2	42.6	0%	100%	NAD Inconclusive	Trace ANTH
CH-6C 11-11-077-75	Glazing compound	Control house 11/12 east wall south window wood frame	Tan Homogeneous Non Friable	7.4	53.6	39.0	0%	100%	NAD Inconclusive	Analysis not requested by client
CH-7A 11-11-077-76	Caulk	Control house 11/12 south west corner window frame	Gray Homogeneous Non Friable	16.8	59.8	23.3	0%	100%	Trace ANTH Inconclusive	
CH-7B 11-11-077-77	Caulk	Control house 11/12 west wall south door frame	Gray Homogeneous Non Friable	25.6	56.2	18.2	0%	98.1%	0.93% CH 0.93% ANTH	
CH-7C 11-11-077-78	Caulk	Control house 11/12 north west corner window frame	Gray Homogeneous Non Friable	21.4	70.7	7.8			NA/PS	
CH-8A 11-11-077-79	Wire insulation	Control house 11/12 northeast wall heater	Off white Homogeneous Friable	Not Applicable			10% CELL	23.3%	66.7% CH	
CH-8B 11-11-077-80	Wire insulation	Control house 11/12 northeast wall heater	Off white Homogeneous Friable	Not Applicable					NA/PS	
CH-8C 11-11-077-81	Wire insulation	Control house 11/12 northeast wall heater	Off white Homogeneous Friable	Not Applicable					NA/PS	

BULK SAMPLE ANALYSIS REPORT

CLIENT: Environmental Planning & Management, 1983 Marcus Ave.-Suite 109, Lake Success, NY 11042
BUILDING ADDRESS: HDR/ PANY & NJ- Greenville Yard- Transfer Bridges & Barge
PROJECT: 11057

Date Received 11/15/11
Date of PLM Analysis: 11/16& 21/11
Date of TEM Analysis: 11/17/11
Date of Revised Report 11/21/11

PLM Analyst: B Stojanowska-Luft
TEM Analyst: A Ansari

Analyst: B Stojanowska-Luft

QC Review / Date: D. Molohides, Lab Director

NAD = No Asbestos Detected, NA/PS = Not Analyzed / Positive Stop, Trace = < 1%, CH = Chrysotile, AMO = Amosite, CRO = Crocidolite, ANTH = Anthophyllite, TRE = Tremolite, ACT = Actinolite, FBGL = Fiberglass, CELL = Cellulose. Polarized Light Microscopy (PLM) analysis of samples is performed by Method EPA 600/M4-82-020 and ELAP PLM Analysis Protocol 198.1 (friable sample) and protocol 198.6 (NOB samples). Transmission Electron Microscopy (TEM) analysis of samples is performed by Method ELAP TEM Analysis Protocol 198.4. Analytical equipments: Stereobinocular microscopes: LW Scientific (Ser# 303643), Olympus VMT (Ser# 289189); Polarized Light Microscopes: MEIJI ML-9000 (Ser #: 902028), Olympus BH-2 (Ser #. 213769). PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative transmission electron microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing. Samples will be stored for sixty (60) days and then returned to the client upon request. The results relate only to the items calibrated or tested. This report may not be reproduced, except in full, without the written approval of Alpha Labs LLC. The report must not be used by the client to claim endorsement by NVLAP or any agency of the US Government. The liability of Alpha Labs LLC with respect to the services charged shall in no event exceed the amount of the invoice.

NYS-DOH ELAP # 11833 **NVLAP Lab Code: 200691-0**

Appendix D

Laboratory Lead Sample Analytical Data

LP11-11-036

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.

BULK SAMPLE CHAIN OF CUSTODY - LEAD

Nov 3, 4 & 7, 2011
Collection Date (s)

1983 Marcus Avenue, Suite 1C9
Lake Success, New York 11042
(516) 326-1196 Fax (516) 393-0811

2011 NOV 15 AM 6:57

PROJECT INFORMATION

CLIENT	CONTRACT NUMBER	LOCATION
HDR	1- (644.515); 2- (644.516); 5- (644.515); 10 (Pending)	Greenville Yard
AGENCY	**EPM NUMBER**	**AREA**
PANY&NJ	11057	Transfer Bridges & Barge

LAB INSTRUCTIONS

ANALYSIS REQUESTED:	LEAD-AAS	TURNAROUND TIME:	72 Hours
SPECIAL ANALYSIS REQUIREMENTS:	NONE		
FAX RESULTS TO:	516-393-0811	FAX RESULTS TO THE ATTENTION OF:	Frank Shkoditch

SAMPLER:	Frank J. Shkoditch	11-14-11	1500
	PRINT NAME/SIGNATURE	RELINQUISHMENT DATE / TIME	
LAB RECEIPT:		11/15/11	
	PRINT NAME/SIGNATURE	RECEIPT DATE / TIME	

SAMPLE NUMBER	MATERIAL (PAINT, SOLDER, FILL)	SAMPLE LOCATION	SAMPLE DESCRIPTION		
			COLOR	SUBSTRATE	NOTES
G9- PB- 01	PAINT	BRIDGE TOWER G9 HAND RAIL	BLACK	METAL	SPORADIC
G9- PB- 02	PAINT	BRIDGE TOWER G9 STRUCTURAL STEEL BELOW WALKWAY	BLACK	METAL	THICK, FLAKING, SPORADIC
G11- PB- 03	PAINT	BRIDGE TOWER G11 STRUCTURAL STEEL BELOW WALKWAY	BLACK	METAL	THIN, FLAKING, SPORADIC

alpha labs
14-26 28th Avenue Long Island City, NY 11102
Tel: (718) 482-7525 Fax: (718) 482-7524 www.alphalabsllc.com

ANALYSIS REPORT FOR LEAD IN PAINT FILM

Client: Environmental Planning & Management,1983 Marcus Ave., Suite 109, Lake Success, NY. 11042
Building Address: Greenville Yard
Project #: 11057

Client Sample #	Location	Description	Detection Limit (% Pb w/w)	Result (% Pb w/w)	Lab Sample #
G9-PB-01	Bridge tower G9 hand rail	Black metal	1.13%	10.24%	LP 11-11-036-01
G9-PB-02	Bridge tower G9 structural steel below walkway	Black metal	1.21%	10.22%	LP 11-11-036-02
G11-PB-03	Bridge tower G11 structural steel below walkway	Black metal	2.33%	22.00%	LP 11-11-036-03

Analysis by: Flame AAS
Method: ASTM D3335- 85A

Date Received: 11/15/2011
Date of Analysis: 11/16/2011
Date of Report: 11/16/2011

Analyst: M. Pawlowska

Lab Director: D. Molohides

Collection procedures, protocols and sample locations are based on information provided by the client submitting the samples; and as such, ALPHA Labs LLC disclaims any knowledge of and liability for the accuracy and completeness of this information

NYS-DOH ELAP # : 11833

Appendix E

PCB Sample Laboratory Analytical Report

AMERICAN ANALYTICAL LABORATORIES

NYSDOH 11418
NJDEP NY050
CTDOH PH-0265
PADEP 68-00573

Wednesday, November 23, 2011

Frank Shkoditch
Environmental Planning & Management, Inc.
1983 Marcus Ave #109
New Hyde Park, New York 11042

TEL: (516) 328-1194
FAX (516) 328-1381

RE: Transfer Bridges & Barge, Greenville Yard

Order No.: 1111085

Dear Frank Shkoditch:

American Analytical Laboratories, LLC. received 8 sample(s) on 11/15/2011 for the analyses presented in the following report.

Samples were analyzed in accordance with the test procedures documented on the chain of custody and detailed throughout the text of this report.

The results reported herein relate only to the items tested or to the samples as received by the laboratory. This report may not be reproduced, except in full, without the approval of American Analytical Laboratories, LLC and is not considered complete without a cover page and chain of custody documentation. The limits (LOQ) provided in the data package are analytical reporting limits and not Federal or Local mandated values to which the sample results should be compared.

There were no problems with the analyses and all data for associated QC met laboratory specifications. If there are any exceptions a Case Narrative is provided in the report or the data is qualified. This package has been reviewed by American Analytical Laboratories' QA Department/Laboratory Director to comply with NELAC standards prior to report submittal. This report consists of 25 pages.

If you have any questions regarding these tests results, please do not hesitate to call (631) 454-6100 or email me directly at lbeyer@american-analytical.com.

Sincerely,

Lori Beyer
Lab Director

American Analytical Laboratories, LLC. Date: *23-Nov-11*

CLIENT: Environmental Planning & Management, In
Project: Transfer Bridges & Barge, Greenville Yard
Lab Order: 1111085

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date Collected	Date Received
1111085-01A	F10/11-PCB-01	11/7/2011	11/15/2011
1111085-02A	G9-PCB-02	11/7/2011	11/15/2011
1111085-03A	CH-PCB-03	11/7/2011	11/15/2011
1111085-04A	CH-PCB-04	11/7/2011	11/15/2011
1111085-05A	CH-PCB-05	11/7/2011	11/15/2011
1111085-06A	CH-PCB-06	11/7/2011	11/15/2011
1111085-07A	CH-PCB-07	11/7/2011	11/15/2011
1111085-08A	CH-PCB-08	11/7/2011	11/15/2011

ENVIRONMENTAL PLANNING & MANAGEMENT, INC.

EPM

BULK SAMPLE CHAIN OF CUSTODY - ASBESTOS

1043 Marcus Avenue, Suite 1Z8
Lake Success, New York 11042
(516) 328- 1194 Fax (516) 393-0811

Nov 3, 4 & 7, 2011
Collection Date (s)

PROJECT INFORMATION

HDR (CLIENT)	1- (644.516); 2- (644.516); 5- (644.516); 10 (Pending) (CONTRACTS)	Greenville Yard (LOCATION)
PANY&NJ (AGENCY)	11057 (EPM NUMBER)	Transfer Bridges & Barge (AREA)

LAB INSTRUCTIONS

ANALYSIS REQUESTED: PCB — TURNAROUND TIME: 5 Day TAT

FAX RESULTS TO: 516-393-0811 — FAX RESULTS TO THE ATTENTION OF: Frank Shkoditch

SAMPLER: Frank J. Shkoditch (PRINT NAME/SIGNATURE) — 11/14/11 (RELINQUISHMENT DATE / TIME) — 1500 hrs

LAB RECEIPT: (PRINT NAME/SIGNATURE) — 11/15/11 (RECEIPT DATE/TIME)

SAMPLE NUMBER	MATERIAL	SAMPLE LOCATION	SAMPLE DESCRIPTION		
			VISUAL OBSERVATIONS	CONDITION	FRIABLE ?
F10/11- PCB- 01	CREOSOTE	FENDERS SYSTEM BETWEEN G10 / G11	BLACK, TAR-LIKE COATING ON WOOD, SPORADIC	POOR	NO
G9- PCB- 02	CAULK	BRIDGE TOWER G9 AT WINDOW OPENINGS	GRAY, BRITTLE, SPORADIC	POOR	NO
CH- PCB- 03	GLAZING COMPOUND	WEIGHT AREA & CONTROL HOUSE 11/12 - METAL FRAMED WINDOWS	WHITE	POOR	NO
CH- PCB- 04	GLAZING COMPOUND	CONTROL HOUSE 11/12 - WOOD FRAMED WINDOWS	WHITE	POOR	NO
CH- PCB- 05	CAULK	CONTROL HOUSE 11/12 WINDOW & DOOR FRAMES	GRAY	POOR	NO
CH- PCB- 06	SILICONE CAULK	CONTROL HOUSE 11/12 NORTH EAST WINDOW GLAZING REPAIRS	CLEAR	GOOD	NO
CH- PCB- 07	SILICONE CAULK	CONTROL HOUSE 11/12 NORTH WEST WINDOW GLAZING REPAIRS	BLACK	GOOD	NO
CH- PCB- 08	SILICONE CAULK	CONTROL HOUSE 11/12 NORTH CENTER WINDOW GLAZING REPAIRS	WHITE	GOOD	NO

AAL WO # 1111085

American Analytical Laboratories, LLC.

Sample Receipt Checklist

Client Name EPM — Date and Time Receive 11/15/2011 11:36:50 AM

Work Order Numbe 1111085 — ReptNo: 1 — Received by CF

COC_ID: — CoderID:

Checklist completed by (Signature) 11/15/11 (Date) — Reviewed by (Initials) 11/15/11 (Date)

Matrix: — Carrier name FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Presen ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Presen ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Presen ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	No VOA vials submitted ☑	Yes ☐	No ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☐

Adjusted? _____ Checked b _____

Any No and/or NA (not applicable) response must be detailed in the comments section be

Client contacted _____ Date contacted _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments:

Corrective Action _____

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	F10/11-PCB-01
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	CREOSOTE
Lab ID:	1111085-01A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1221	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1232	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1242	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1248	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1254	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1260	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1262	U	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Aroclor 1268	970	8.7	87		µg/Kg	1	11/17/2011 11:19:00 PM
Surr: TCX	95.0	0	17-151		%REC	1	11/17/2011 11:19:00 PM
Surr: DCB	91.8	0	16-152		%REC	1	11/17/2011 11:19:00 PM

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	G9-PCB-02
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	CAULK
Lab ID:	1111085-02A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1221	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1232	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1242	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1248	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1254	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1260	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1262	U	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Aroclor 1268	390	9.90	99		µg/Kg	1	11/17/2011 11:43:00 PM
Surr: TCX	88.1	0	17-151		%REC	1	11/17/2011 11:43:00 PM
Surr: DCB	88.4	0	16-157		%REC	1	11/17/2011 11:43:00 PM

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	CH-PCB-03
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	GLAZING COMPOUND
Lab ID:	1111085-03A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1221	U	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1232	U	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1242	U	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1248	U	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1254	U	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1260	U	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1262	5100	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Aroclor 1268	6500	9.01	90		µg/Kg	1	11/18/2011 12:07:00 AM
Surr: TCX	78.4	0	17-151		%REC	1	11/18/2011 12:07:00 AM
Surr: DCB	85.1	0	16-152		%REC	1	11/18/2011 12:07:00 AM

Qualifiers:	B Analyte detected in the associated Method Blank	C	Calibration %RSD/%D exceeded for non-CCC analytes
	E Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	LOD	Limit of Detection
	LOQ Limit of Quantitation	P	>40% diff for detected conc between the two GC columns
	PQL Practical Quantitation Limit	S	Spike Recovery outside accepted recovery limits
	U Indicates the compound was analyzed but not detected.		

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	CH-PCB-04
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	GLAZING COMPOUND
Lab ID:	1111085-04A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1221	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1232	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1242	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1248	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1254	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1260	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1262	U	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Aroclor 1268	6100	6.33	63		µg/Kg	1	11/18/2011 12:31:00 AM
Surr: TCX	94.0	0	17-151		%REC	1	11/18/2011 12:31:00 AM
Surr: DCB	106	0	16-152		%REC	1	11/18/2011 12:31:00 AM

Qualifiers:	B Analyte detected in the associated Method Blank	C	Calibration %RSD/%D exceeded for non-CCC analytes
	E Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J Analyte detected below quantitation limits	LOD	Limit of Detection
	LOQ Limit of Quantitation	P	>40% diff for detected conc between the two GC columns
	PQL Practical Quantitation Limit	S	Spike Recovery outside accepted recovery limits
	U Indicates the compound was analyzed but not detected.		

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	CH-PCB-05
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	CAULK
Lab ID:	1111085-05A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1221	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1232	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1242	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1248	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1254	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1260	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1262	U	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Aroclor 1268	250	7.63	76		µg/Kg	1	11/18/2011 12:55:00 AM
Surr: TCX	89.2	0	17-151		%REC	1	11/18/2011 12:55:00 AM
Surr: DCB	88.4	0	16-152		%REC	1	11/18/2011 12:55:00 AM

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	CH-PCB-06
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	SILICONE CAULK
Lab ID:	1111085-06A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1221	U	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1232	U	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1242	U	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1248	U	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1254	U	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1260	U	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1262	5200	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Aroclor 1268	3300	7.81	78		µg/Kg	1	11/18/2011 1:19:00 AM
Surr: TCX	83.4	0	17-151		%REC	1	11/18/2011 1:19:00 AM
Surr: DCB	97.4	0	16-152		%REC	1	11/18/2011 1:19:00 AM

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	CH-PCB-07
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	SILICONE CAULK
Lab ID:	1111085-07A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1221	U	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1232	U	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1242	U	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1248	U	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1254	U	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1260	U	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1262	7000	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Aroclor 1268	4000	9.80	98		µg/Kg	1	11/18/2011 1:43:00 AM
Surr: TCX	80.4	0	17-161		%REC	1	11/18/2011 1:43:00 AM
Surr: DCB	105	0	16-162		%REC	1	11/18/2011 1:43:00 AM

American Analytical Laboratories, LLC.

Date: *23-Nov-11*

ELAP ID : 11418

CLIENT:	Environmental Planning & Management, In	**Client Sample ID:**	CH-PCB-08
Lab Order:	1111085	**Collection Date:**	11/7/2011
Project:	Transfer Bridges & Barge, Greenville Yard	**Matrix:**	SILICONE CAULK
Lab ID:	1111085-08A		

Certificate of Results

Analyses	Sample Result	LOD	LOQ	Qual	Units	DF	Date/Time Analyzed
PCB'S AS AROCLORS SW-846 METHOD 8082			SW8082A		NA		Analyst: SB
Aroclor 1016	U	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1221	U	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1232	U	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1242	U	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1248	U	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1254	U	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1260	U	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1262	1900	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Aroclor 1268	1900	7.52	75		µg/Kg	1	11/18/2011 2:07:00 AM
Surr: TCX	94.1	0	17-151		%REC	1	11/18/2011 2:07:00 AM
Surr: DCB	107	0	16-152		%REC	1	11/18/2011 2:07:00 AM

American Analytical Laboratories, LLC.

Date: 23-Nov-11

CLIENT: Environmental Planning & Management, In
Work Order: 1111085
Project: Transfer Bridges & Barge, Greenville Yard

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082_Misc

Sample ID: MB-33843	SampType: MBLK	TestCode: 8082_Misc	Units: µg/Kg	Prep Date: 11/17/2011	RunNo: 60911
Client ID: PBS	Batch ID: 33843	TestNo: SW8082A	NA	Analysis Date: 11/23/2011	SeqNo: 854939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	U	100									
Aroclor 1221	U	100									
Aroclor 1232	U	100									
Aroclor 1242	U	100									
Aroclor 1248	U	100									
Aroclor 1254	U	100									
Aroclor 1260	U	100									
Aroclor 1262	U	100									
Aroclor 1268	U	100									
Surr: TCX	470		500.0		95.0	17	151				
Surr: DCB	440		500.0		88.5	16	152				

Sample ID: LCS-33843	SampType: LCS	TestCode: 8082_Misc	Units: µg/Kg	Prep Date: 11/17/2011	RunNo: 60911
Client ID: LCSS	Batch ID: 33843	TestNo: SW8082A	NA	Analysis Date: 11/23/2011	SeqNo: 854940

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	800	100	1000	0	79.7	31	149				
Aroclor 1260	780	100	1000	0	77.6	27	147				
Surr: TCX	410		500.0		82.4	17	151				
Surr: DCB	390		500.0		78.3	16	152				

Sample ID: LCSD-33843	SampType: LCSD	TestCode: 8082_Misc	Units: µg/Kg	Prep Date: 11/17/2011	RunNo: 60911
Client ID: LCSS02	Batch ID: 33843	TestNo: SW8082A	NA	Analysis Date: 11/23/2011	SeqNo: 854941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	690	100	1000	0	69.2	31	149	796.6	14.0	20	
Aroclor 1260	780	100	1000	0	77.9	27	147	778.5	0.270	20	
Surr: TCX	390		500.0		78.2	17	151		0	0	
Surr: DCB	380		500.0		75.3	16	152		0	0	

Qualifiers:
B Analyte detected in the associated Method Blank
C Calibration %RSD/%D exceeded for non-CCC analytes
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
LOD Limit of Detection
LOQ Limit of Quantitation
P >40% diff for detected conc between the two GC column
PQL Practical Quantitation Limit

Appendix F
Laboratory Accreditations

Appendix F -1

Asbestos Laboratory Accreditation - Alpha

NEW YORK STATE - DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH
LICENSE AND CERTIFICATE UNIT
STATE CAMPUS BUILDING 12
ALBANY, NY 12240

ASBESTOS HANDLING LICENSE

Alpha Labs, LLC
14-26 20th Avenue
Long Island City, NY 11102

FILE NUMBER: 04-0427
LICENSE NUMBER: 28968
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 04/20/2011
EXPIRATION DATE: 05/31/2012

Duly Authorized Representative - Anastasia Kentrota

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Maureen A. Cox

Maureen A. Cox, Director
FOR THE COMMISSIONER OF LABOR

BH 439 (4-07)

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2012
Issued April 01, 2011

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DIMITRIOS MOLOHIDES
ALPHA LABS LLC
14-26 28TH AVENUE
LONG ISLAND CITY, NY 11102

NY Lab Id No: 11833
EPA Lab Code:

Is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	EPA 600/M4/82/020
	from 198.1 of Manual
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	ITEM 198.4 OF MANUAL
Lead in Dust Wipes	EPA 7000B
Lead in Paint	ASTM D3335-85A

Sample Preparation Methods

APP. 14.2, HUD JUNE 1995

Serial No.: 44586

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Appendix F-2

Lead Laboratory Accreditation – Alpha

United States Environmental Protection Agency

This is to certify that

Alpha Labs LLC

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

New York

This certification is valid from the date of issuance and expires April 13, 2013

John Gorman, Acting Chief
Pesticides & Toxic Substances Branch

NY-9115-3
Certification #

OCT - 4 2010
Issued On

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2012
Issued April 01, 2011

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DIMITRIOS MOLOHIDES
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	Item 198.1 of Manual
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Asbestos in Non-Friable Material-TEM	ITEM 198.4 OF MANUAL
Lead in Dust Wipes	EPA 7000B
Lead in Paint	ASTM D3335-85A

Sample Preparation Methods

APP, 14.2, HUD JUNE 1995

Serial No.: 44586

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Appendix F-3

PCB Laboratory Accreditation – American Analytical

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2012
Issued April 01, 2011
Revised April 22, 2011

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. LORI BEYER
AMERICAN ANALYTICAL LABORATORIES LLC
56 TOLEDO STREET
FARMINGDALE, NY 11735

NY Lab Id No. 11418
EPA Lab Code: NY00911

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Nutrient		**Phthalate Esters**	
Nitrate (as N)	LACHAT 10-107-4-1C	Benzyl butyl phthalate	EPA 625
Nitrite (as N)	LACHAT 10-107-4-1C		EPA 8270C
Orthophosphate (as P)	SM 4500-P F		EPA 8270D
Phosphorous, Total	EPA 365.4 Rev. 1974	**Polychlorinated Biphenyls**	
	LACHAT 10-115-01-1-B, F	PCB-1016	EPA 608
Organophosphate Pesticides			EPA 8082
Atrazine	EPA 8270D	PCB-1221	EPA 608
Parathion-ethyl	EPA 8270C		EPA 8082
	EPA 8270D	PCB-1232	EPA 608
Phthalate Esters			EPA 8082
Benzyl butyl phthalate	EPA 625	PCB-1242	EPA 608
	EPA 8270C		EPA 8082
	EPA 8270D	PCB-1248	EPA 608
Bis(2-ethylhexyl) phthalate	EPA 625		EPA 8082
	EPA 8270C	PCB-1254	EPA 608
	EPA 8270D		EPA 8082
Di-n-octyl phthalate	EPA 625	PCB-1260	EPA 608
	EPA 8270C		EPA 8082
	EPA 8270D	PCB-1262	EPA 8082
Diethyl phthalate	EPA 625	PCB-1268	EPA 8082
	EPA 8270C	**Polynuclear Aromatics**	
	EPA 8270D	Acenaphthene	EPA 625
Dimethyl phthalate	EPA 625		EPA 8270C
	EPA 8270C		EPA 8270D
	EPA 8270D	Acenaphthylene	EPA 625

Serial No.: 44859

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on recycled paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

Appendix G

Field Calculation Sheets

Calculations

Material	Locations	Additions: Length (Feet)	Width (Feet)	Height (Feet)	Number	Subtractions: Objects	Length (Feet)	Width (Feet)	Height (Feet)	Number	SF
Corrugated Transite Panels - (Sample-1)	Bridge Tower No. 9 Side Walls	76.5		10.8	2	Windows		3	4.5	10	1517.4
	Bridge Tower No. 9 North End Wall	16.5		10.8	1	Windows		3	4.5	1	164.7
	Bridge Tower No. 9 South Divider Wall	16.5		10.8	1	Door		2.5	7	1	160.7
	Bridge Tower No. 9 End Wall Peaks		16	5.2	2						166.4
	Bridge Tower No. 9 Roof	76.5	9.5		2						1453.5
	Bridge Tower No. 12/13 End Wall	15.5		9.8	1	Door		2.5	7	1	134.4
	Bridge Tower No. 12/13 End Peak		15.5	4	1						62
	Apron Tower No. 9 Side Walls *1	76.5		10.8	2	Windows		3	4.5	10	1517.4
	Apron Tower No. 9 North End Wall*1	13.2		10.8	1	Windows		3	4.5	1	129.06
	Apron Tower No. 9 South Divider Wall*1	13.2		10.8	1	Door		2.5	7	1	125.06
	Apron Tower No. 9 End Wall Peaks*1		13.5	4.5	2						121.5
	Apron Tower No. 9 Roof*1	76.5	8.1		2						1239.3
										Total (Rounded Up)	6792

Material	Locations	Additions: Length (Feet)	Width (Feet)	Height (Feet)	Number	LF	SF
Caulks (Sample 3)	Window Perimeter Bridge Tower No. 9	3	0.08	4.5	11	165	13.2
	Window Perimeter Apron Tower No. 9 *1	3	0.08	4.5	11	165	13.2
						330	27

Total (Rounded Up)

*1 - Length is assumed the same as Bridge Tower

Material	Locations	Additions				Subtractions					SF
		Length (Feet)	Width (Feet)	Height (Feet)	Number	Objects	Length (Feet)	Width (Feet)	Height (Feet)	Number	
Aphaltic Coated Metal Panels - (Sample-2)	Weight Shaft 9/10 -S, N, E		20	40	3						2400
	Weight Shaft 9/10 -W		12	10	2						240
			12	30	1						360
			10	14	1						140
	Bridge Tower No. 10 Side Walls	75		10.8	2	Windows		3	4.5	2	1593
						Missing Section	17		10.8	1	-183.6
	Bridge Tower No. 10 Roof	75	9.5		2						1425
	Weight Shaft 10/11 -W		20	40	1						800
	Weight Shaft 10/11 -E		20	20	1						400
	Bridge Tower No. 11 Side Walls	85		10.8	2	Windows		3	4.5	4	1782
						Missing Section	27.1		10.8	1	-292.68
	Bridge Tower No. 11 Roof	85	9.5		2	Missing Section	27.1		9.5	1	1357.55
	Weight Shaft 11/12 -S, N, E, W		12	40	2						960
			20	40	1						800
			20	20	1						400
	Bridge Tower No. 12 Side Walls	75		10.8	2	Missing Section	12.5		10.8	1	1485
						Missing Section	5.3		10.8	1	-57.24
	Bridge Tower No. 12 Roof	75	9.5		2	Missing Section	14.5		9.5	1	1287.25
	Bridge Tower No. 13 Side Walls	15		10.8	1						162
	Bridge Tower No. 13 Roof	6.5	9.5		1						61.75
	Apron Tower No. 10 Side Walls *1	75		10.8	2	Windows		3	4.5	2	1593
	Apron Tower No. 10 Roof *1	75	8.1		2						1215
	Apron Tower No. 11 Side Walls *1	85		10.8	2	Windows		3	4.5	4	1782
	Apron Tower No. 11 Roof *1	85	8.1		2						1377
	Apron Tower No. 12 Side Walls *1	75		10.8	2	Windows		3	4.5	2	1593
	Apron Tower No. 12 Roof *1	75	8.1		2						1215
	Apron Tower No. 12 End Wall Peak		13.5	4.5	1						60.75
	Apron Tower No. 12 End Wall	13.5		10.8	1						145.8
										Total (Rounded Up)	24102

*1 - Length is assumed the same as Bridge Tower

Material	Locations	Additions				Number	SF	Washer Estimate for other Asphaltic Panels			
		Length (Inches)	Width (Inches)	Washer Rate/SF Panel	SF Panels			Bridge No.	SF Panels	Washers	Washer / SF
Cloth Washers (Sample 5)	Bridge Tower No. 10	1	1			1359	10	10	2035	1359	0.5
	Bridge Tower No. 11	1	1			1710	12	11	2847	1710	0.7
	Bridge Tower No. 12	1	1			1125	8	12	3715	1125	0.5
	Bridge Tower No. 13	1	1			149	2				
	Estimate of Washer for All Panels	1	1	0.7	24102	16872	118	Total (Rounded Up)			
						Totals					

*1 - Length is assumed the same as Bridge Tower

Material	Locations	Length (Inches)	Width (Inches)			Number	SF	
Brake Pads (Sample 6)	Bridge Tower No. 10	13	7			4	3	Total (Rounded Up)
	Bridge Tower No. 11	18	6			2	2	Total (Rounded Up)
							5	

Material	Locations	Total SF Each				Number	SF	
Limit Switch Components (Sample 9)	Bridge Tower No. 9	2				1	2	Total (Rounded Up)
	Bridge Tower No. 12	2				1	2	Total (Rounded Up)
							4	

Material	Locations	Length (Inches)	Radius (Inches)			Number	SF	
Tail Plugs (Sample 9-1)	Loading Ramp No. 9	3	1.5			143	8	Total (Rounded Up)
	Loading Ramp No. 12	3	1.5			164	9	Total (Rounded Up)
							17	

Material	Locations	Additions: Length (Feet)	Width (Feet)	Height (Feet)	Number	Subtractions: Objects	Length (Feet)	Width (Feet)	Height (Feet)	Number	SF
Flat Transite Panels Sample CH-1	CH 11/12 Underside	0.8	10.8		2						16.28
		5	3.5		2						34
		14	10.8		1						150.2
		17	10.8		1						182.6
	CH 11/12 Underside Triangles	6.5	3.5		4						38.5
	CH 11/12 East Wall	37.75		13	1	Windows		3.25	6.25	2	378.625
						Missing Section		3	13	1	-39
	CH 11/12 West Wall	32.25		10.75	1	Windows		3.25	6.25	3	285.75
						Door		3	7	1	-21
	CH 11/12 North & South Walls	3.5	1.3		4						17.2
		4.5	1.3		2						10.7
		4.5	4		2						35
		3	3.5		4						41
		4.7	3.5		4						64.8
										Total (Rounded Up)	1195

Material	Locations	Length (Feet)	Width (Feet)	Height (Feet)	Number	LF	SF	
Caulk CH11/12 (Sample 7)	Windows	3.7	0.08	6.5	3	61.2	4.896	Caulk Around Perimeter
	Door	3	0.08	7	1	17	1.36	Caulk on 3 sides (not bottom)
	Additional Caulk on South Window	4	0.08		1	4	0.32	Total Measured Qty
	Additional Caulk on West Window	3	0.08		1	3	0.24	Total Measured Qty
						79	7	Total (Rounded Up)

Material	Locations	Length (Feet)	Width (Feet)	Object #	# Consoles		SF	
Control Console (SF) CH 11/12	Terminal Strips	3	0.2	1	2		1.2	
	Ebony Boards	0.7	0.25	2	2		0.7	
	Ebony Boards	0.5	0.25	1	2		0.25	
	Ebony Boards	0.4	0.25	4	2		0.8	
	Ebony Boards	2	1	1	2		4	
	Ebony Boards	3	0.08	2	2		0.96	
							8	Total (Rounded Up)

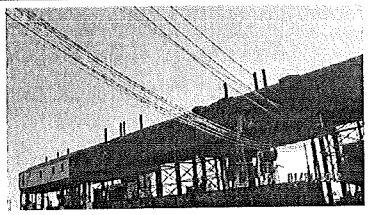
Material	Locations	Length (Feet)	Width (Feet)	Object #			SF		
Misc Electrical Wall Panels	Blocks - Emerg Gen	0.7	0.7	4			3		
	Ebony Boards-Left Utility Feed	0.8	0.7	1			0.6		
	Backer Boards -Heaters	0.8	0.3	1			0.3		
	Backer Boards -Heaters	0.08	0.3	1			0.1	0.4	Heater Sub-total
	Backer Boards -Old Breakers	1.3	2.7	1			3.6		
	Backer Boards -Old Breakers	0.4	2.7	2			2.2		
	Backer Boards -Old Breakers	0.4	1.3	2			1.1		
	Backer Boards -Old Breakers	0.7	2.2	1			1.6	8.5	Breaker Sub-total
							13	Total (Rounded Up)	

Material	Locations	Length (Feet)	Width (Feet)	Object #			SF	
Main Power Distribution	Backer Ends	18.25	6	1			109.5	
	Backer - Middle	5	1.3	1			6.5	
							116	Total

Material	Locations	Length (Feet)	Width (Feet)	Height (Feet)	# of Windows	Interior # Exterior	LF	SF	
Caulk CH 9/10 (Interior & Exterior) - Observed	North Windows	4	0.08	6	1	Qty x2	36	2.88	
	East Windows	3	0.08	4	1	Qty x2	28	2.24	
		2	0.08	3	1	Qty x2	20	1.6	
	West Windows	2.5	0.08	4	2	Qty x2	52	4.16	
	South Windows	4.5	0.08	6	1	Qty x2	38	3.04	
	Door	1.5	0.08	7	1	Qty x2	34	2.72	
							208	17	Total (Rounded Up)

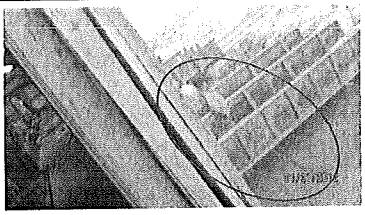
Appendix G - Photos

G.01 Electrical

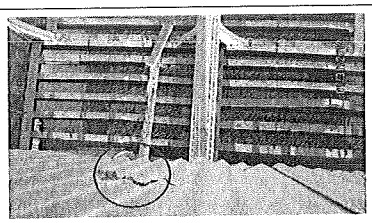


G.01.01 Aerial Conductors to Bridge 11

Note: No aerial conductors to Bridges 9 and 10.

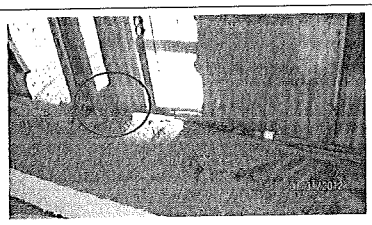


G.01.02 Weatherhead on Bridge 9 Gantry Exterior



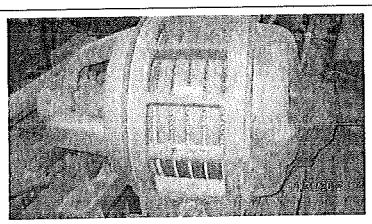
G.01.03 Conductors Cut on Bridge 10 Exterior

Note: Conductors cut in a similar location as the weatherhead for Bridge 9. Conduit to this location is routed similar to the conduit for Bridge 9.

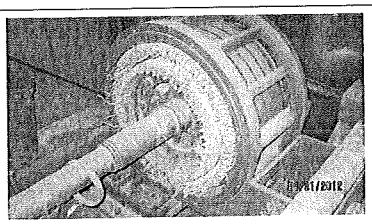


G.01.04 Conductors Cut Inside Bridge 12 Gantry

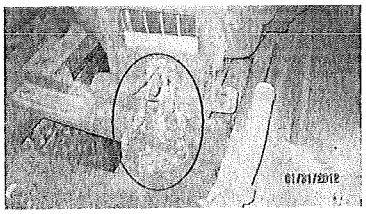
Note: Conductors end near the assumed former weatherhead location and are routed in a similar manner as those for Bridge 9.



G.01.05 Complete Bridge Drive Motor for Bridge 9



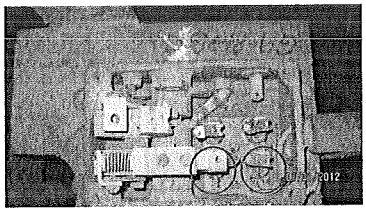
G.01.06 Partial Bridge Drive Motor for Bridge 9



G.01.07 Typical Bridge Drive Motor for Bridge 9 Disconnected

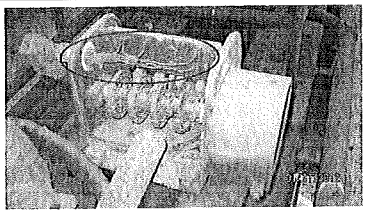
Note: Nine conductors disconnected and wrapped.

G.01.08 Typical Lever Arm Switch for Bridge 9



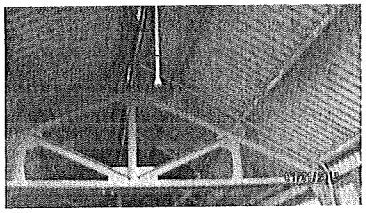
G.01.09 Interior of Lever Arm Limit Switch for Bridge 9

Note: Two connected conductors within the lever arm limit switch.



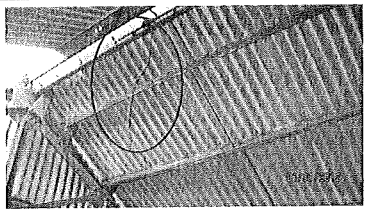
G.01.10 Rotary Cam Limit Switch for Bridge 9

Note: Eight connected conductors within the rotary cam limit switch.



G.01.11 Typical Light fixture for Bridge 9 Gantry

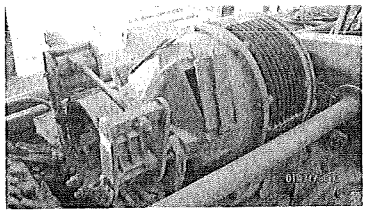
Note: No light bulb for the light fixture.



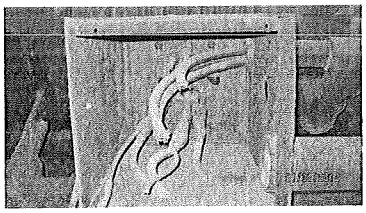
G.01.12 Wire in Bridge 9 Gantry

Note: Assumed former location of light fixture.

G.01.13 Typical Outlet for Bridge 9

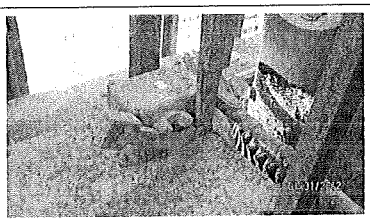


G.01.14 Typical Bridge Drive Motor and Brake Assembly for Bridge 10

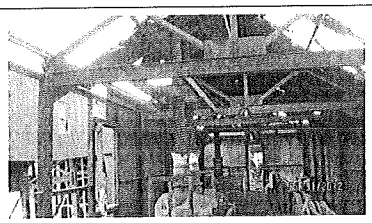


G.01.15 Typical Disconnected Conductors for Bridge Drive Motor and Brake Assembly for Bridge 10

Note: Nine conductors for bridge drive motor and three conductors for brake. All conductors are disconnected.



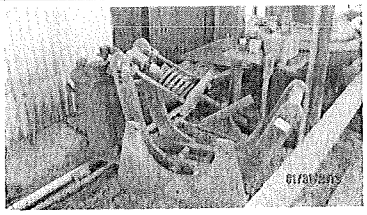
G.01.16 Typical Lever Arm Limit Switch for Bridge 10



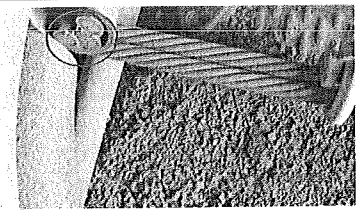
G.01.17 Typical Light Fixtures for Bridge 10

Note: Near light fixture missing its light bulb and far light bulb is not illuminated.

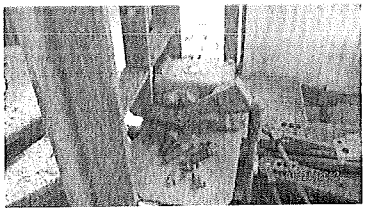
G.01.18 Typical Outlet for Bridge 10



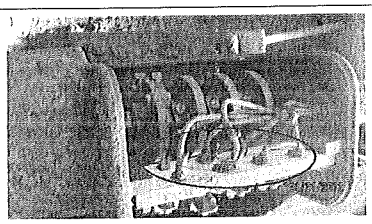
G.01.19 Partial Brake for Bridge 12



G.01.20 Disconnected Conductors for Bridge 12

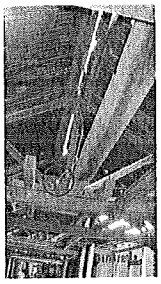


G.01.21 Typical Lever Arm Limit Switch for Bridge 12



G.01.22 Rotary Cam Limit Switch for Bridge 12

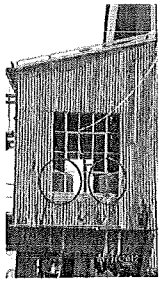
Note: Six connected conductors inside the rotary cam limit switch.



G.01.23 Abandoned Light Fixture for Bridge 12

Note: Missing conduit and light bulb for light fixture.

G.01.24 Outlet for Bridge 12



G.01.25 Control House for Bridges 9 and 10

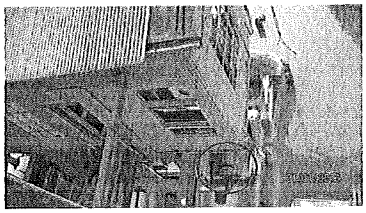
Note: Two control desks on the Bridge 10 side of the control house.

G.01.26 Control House for Bridges 9 and 10

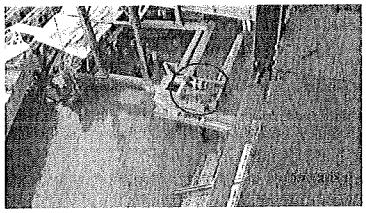
Note: One control desk on the Bridge 9 side of the control house. Also, four conduits exiting the control house on the Bridge 9 side.

G.01.27 Conduits Existing the Control House for Bridges 9 and 10

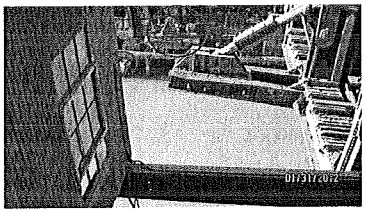
Note: Two conduits exiting the control house near the center (one is disconnected) and two conduits exiting on the Bridge 10 side.



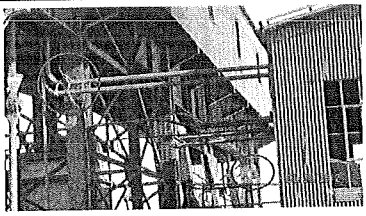
G.01.28 North Winch Motor for Bridge 10



G.01.29 South Winch Motor for Bridge 10

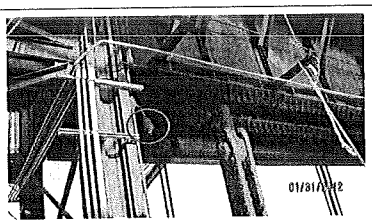


G.01.30 South Winch Motor and Barge Area Light Fixture for Bridge 12



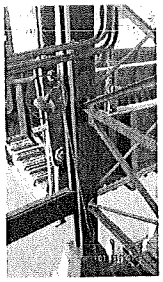
G.01.31 Bridge Area Light Fixtures for Bridges 9 and 10

Note: All light fixtures are missing light bulbs.

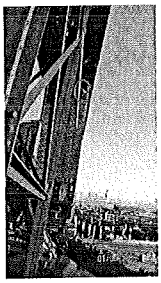


G.01.32 Bridge Area Light Fixture for Bridge 10

Note: Light fixture is missing its light bulb.

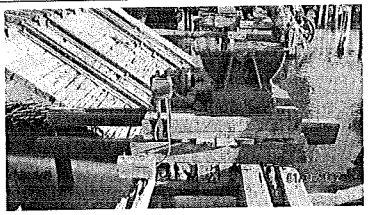


G.01.33 Bridge Area Light Fixture for Bridge 12



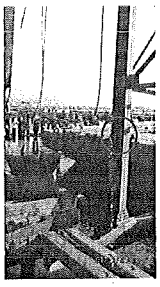
G.01.34 Barge Area Light Fixture for Bridge 10

Note: Light fixture is missing its light bulb.



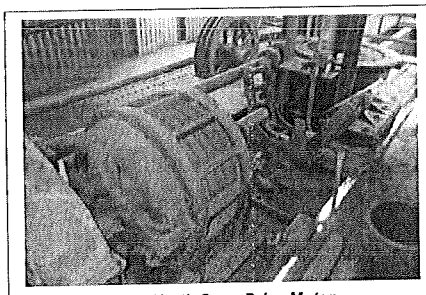
G.01.35 Typical Winch Motor and Electrical Control Station for Bridge 10

G.01.36 Typical Abandoned Electrical Station for Bridge 10



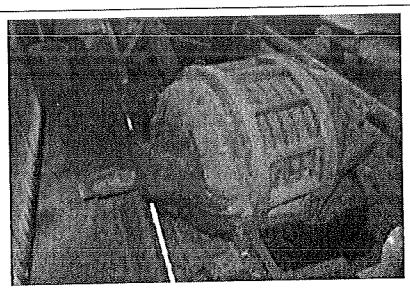
G.01.37 Typical Abandoned Electrical Station for Bridge 10

G.02 Mechanical



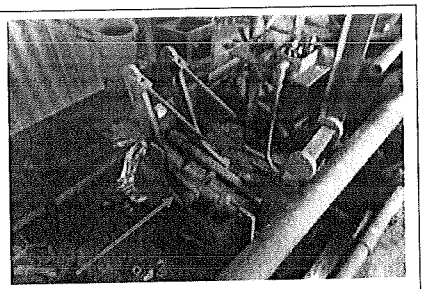
G.02.01 Bridge 9 North Span Drive Motor

Note: Partial drive motor on the north side of Bridge No. 9



G.02.02 Bridge 9 South Span Drive Motor

Note: The Bridge No. 9 south span drive motor has been disconnected and unbolted from its support.

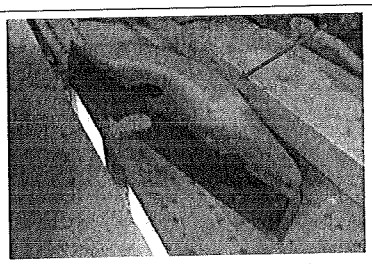


G.02.03 Bridge 9 North Motor Brake

Note: There are no complete sets of motor brakes on Bridge No. 9.

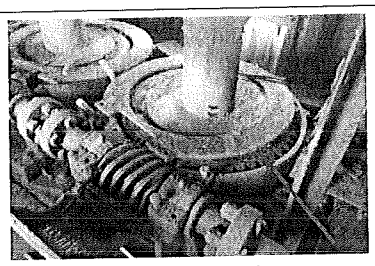
G.02.04 Bridge 9 South Primary Reducer

Note: The cover of the south gear reducer has been removed, exposing the drive gear. Lubricant remains pooled in the bottom of the reducer housing.



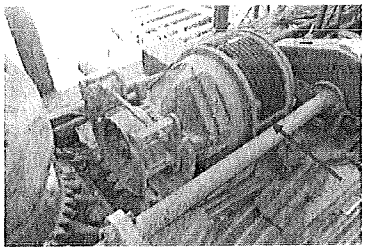
G.02.05 Bridge 9 South Primary Reducer Cover

Note: The top half of the south gear reducer cover has been removed and was placed on the structural steel supporting the counterweight sheaves.



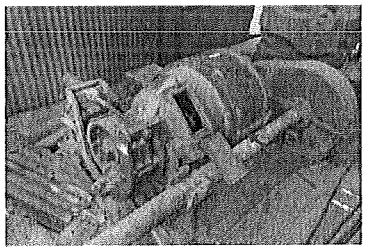
G.02.06 Bridge 9 Center Screw Jack

Note: The Bridge No. 9 screw jacks have been abandoned and are covered in a layer of dirt and debris.



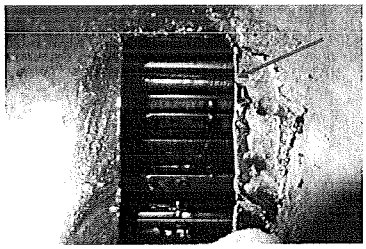
G.02.07 Bridge 10 North Span Drive Motor

Note; Span drive motor rand motor brake assembly remains connected to drive machinery and displays moderate corrosion.



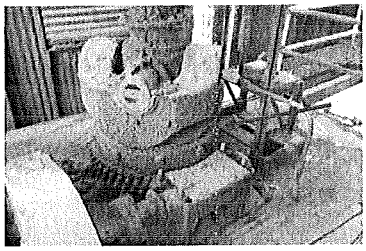
G.02.08 Bridge 10 South Span Drive Motor

Note; Span drive motor rand motor brake assembly remains connected to drive machinery and displays moderate corrosion.



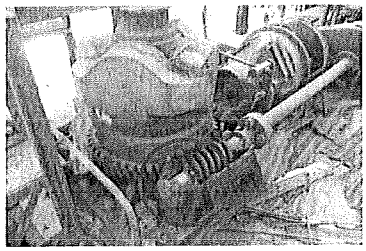
G.02.09 Bridge 10 North Primary Gear Reducer

Note: Bridge No. 10 primary reducers contain gear lubricant.



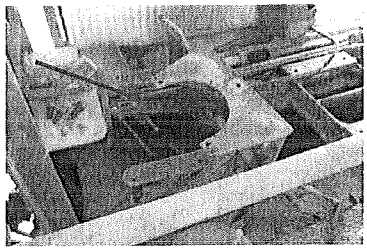
G.02.10 Bridge 10 South Screw jack

Note: The Bridge No. 10 screw jacks have been abandoned and are covered in a layer of dirt and debris.



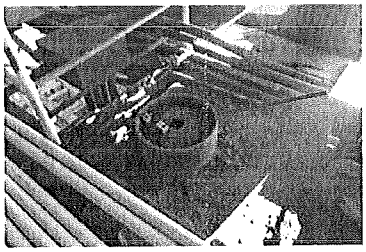
G.02.11 Bridge 10 North Screw jack

Note; Most of the bearing caps on the worm gear reducers for Bridge no. 10 have been removed and are missing.



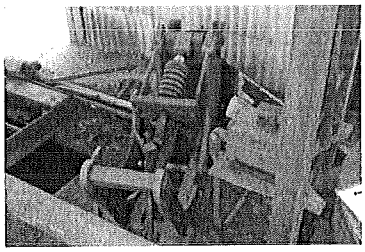
G.02.12 Bridge 12 South Motor Brake

Note: Bridge No. 10 contains only the remnants of motor brakes and brake frames.



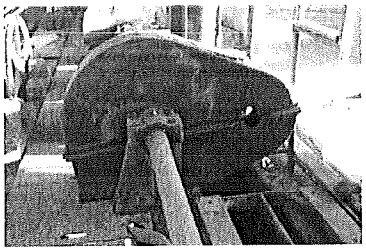
G.02.13 Bridge 12 Abandoned Brake Drum

Note: A brake drum has been abandoned on the machinery house floor near the north screw jack of Bridge No. 12.



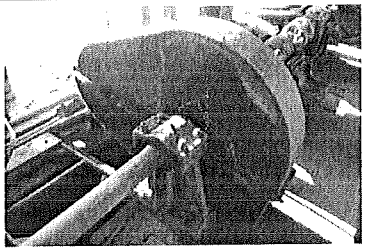
G.02.14 Bridge 12 North Motor Brake

Note: The partial north motor brake of Bridge No. 12 has a complete thrustor.



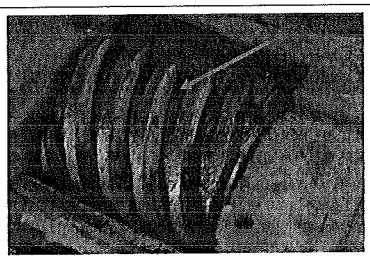
G.02.15 Bridge 12 North Primary Reducer

Note: The north primary reducer housing is complete on Bridge No. 12.



G.02.16 Bridge 12 South Primary Reducer

Note: The south primary reducer housing is complete on Bridge No. 12.



G.02.17 Bridge 12 North Worm Reducer

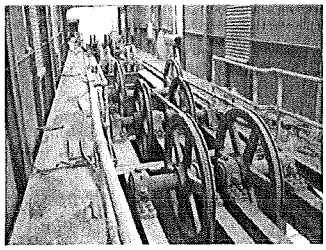
Note: Water infiltration on the Bridge No. 12 worm reducers has caused corrosion on the contact faces of the lead screws.

G.02.18 Bridge 10 Counterweight Sheave

Note: The counterweight sheaves of all transfer bridges display rope corrugations in the grooves.

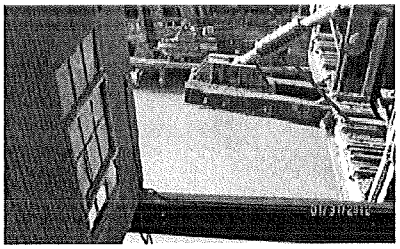
G.02.19 Bridge 9 Counterweight Sheave Bearing

Note: The north counterweight sheave bearings on Bridge No. 9 are missing most of their anchor bolts.



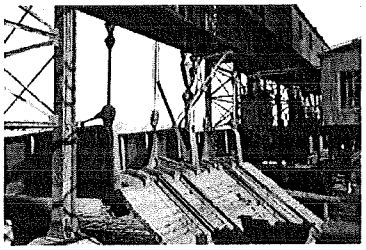
G.02.20 Inside Apron Gantry – Bridge 11

Note: A general view of the apron gantry of Bridge No. 11. Due to inaccessibility, the quantity of equipment in other apron gantries was estimated off of what is present on Bridge No 11.



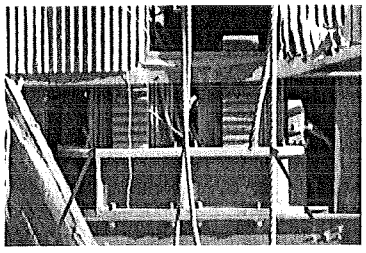
G.02.21 Bridge 12 Friction Cylinder

Note: Bridge No. 12 friction cylinder is still present, though the apron is no longer connect to the bridge.



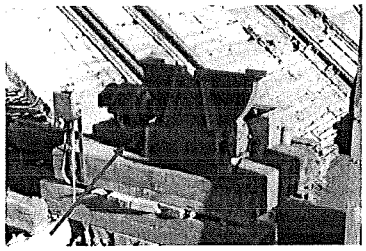
G.02.22 Bridge 10 Apron

Note: The apron of Bridge No. 10 is submerged since it is no loner supported by counterweights or a friction cylinder.



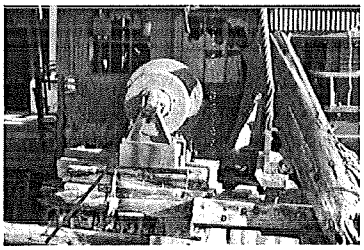
G.02.23 Bridge 10 Apron Operating Machinery

Note: The apron operating machinery for Bridge Nos. 9 and 10 is still present though the machinery has been taken out of service.



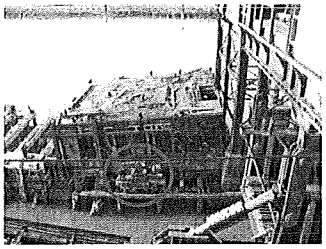
G.02.24 Bridge 10 South Electric Winch

Note: The south electric winch of Bridge No. 10 is present.



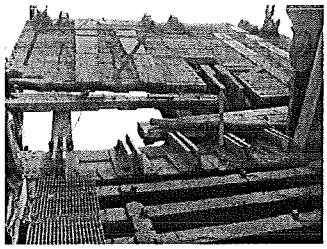
G.02.25 Bridge 10 North Electric Winch

Note: The north electric winch of Bridge No. 10 is complete.



G.02.26 Bridge 12 South Electric Winch

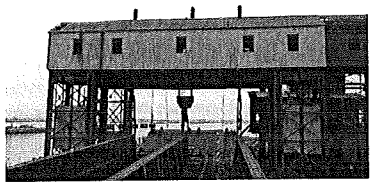
Note: The north electric winch of Bridge No. 10 is present.



G.02.27 Bridge 9 Apron

Note: The friction cylinder for Bridge No. 9 is missing. Notice the remnants of the lock bars and hand winches.

G.03 Structural

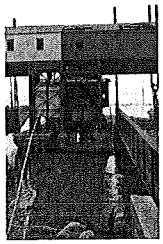


G.03.01 Bridge 9 Gantry

Bridge 9 Gantry is shown looking Southeast.

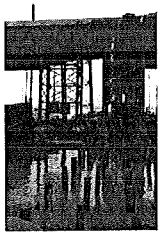
G.03.02 Bridge 9 Gantry Column

Bridge 9 North Gantry Column is shown looking Southeast.



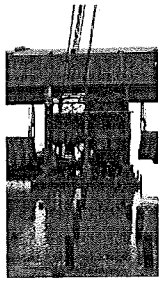
G.03.03 Bridge 9 and 10 Gantry Column

Bridge 9 South and Bridge 10 North Gantry Column is shown looking Southeast.



G.03.04 Bridge 10 and 11 Gantry Columns

Bridge 10 South Gantry Column and Bridge 11 North Gantry Column are shown looking Southeast.

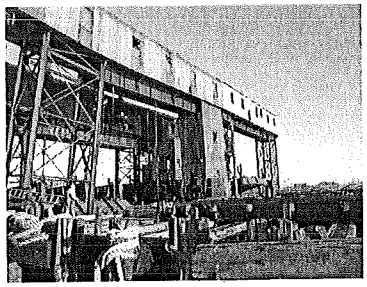


G.03.05 Bridge 11 and 12 Gantry Column

Bridge 11 South and Bridge 12 North Gantry Column is shown looking Southeast.

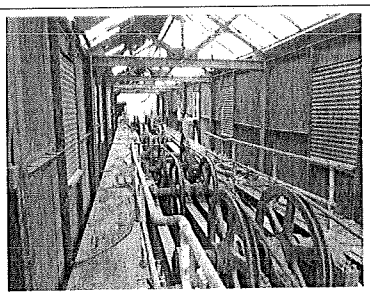
G.03.06 Bridge 12 Gantry Column

Bridge 12 South and the previously removed Bridge 13 North Gantry Column is shown looking Southeast.



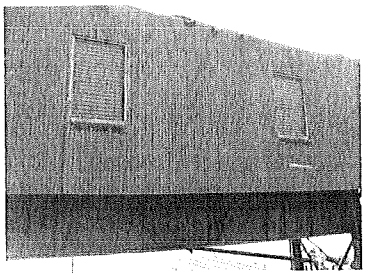
G.03.07 Bridge 9 and 10 Apron Gantries

Bridge 9 and 10 Apron Gantries are shown looking North.



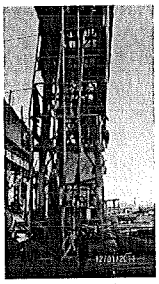
G.03.08 Apron Gantry Interior

The interior of the Bridge 11 and 12 Apron Gantry is shown looking North East.



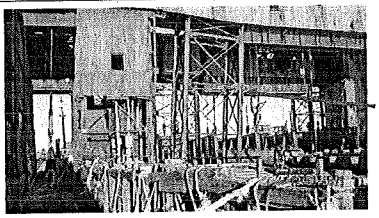
G.03.09 Bridge 10 Apron Gantry

Bridge 10 Apron Gantry floor beam is shown looking north.



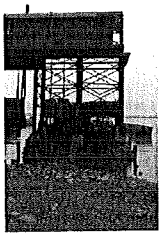
G.03.10 Bridge 11 Apron Gantry Columns

Bridge 11 North Apron Gantry Column is shown looking Northeast. The columns are leaning toward the east (toward the water).



G.03.11 Bridge 10 and 11 Apron Gantry Columns

Bridge 10 South and Bridge 11 North Apron Gantry Column is shown looking North West. Bridge 10 Apron Gantry Column is no longer plumb.



G.03.12 Bridge 12 Gantry Column

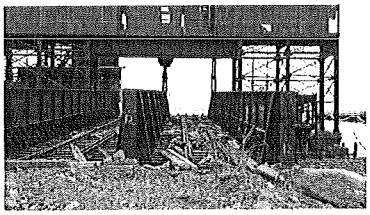
Bridge 12 South and the previously removed Bridge 13 North Gantry Column is shown looking Southeast.

G.03.13 Bridge 9

Bridge 9 is shown looking Southeast.

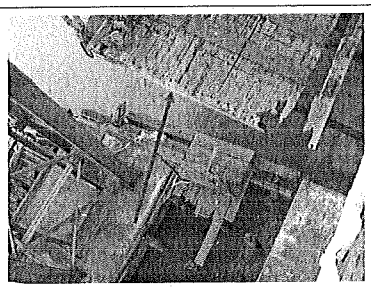
G.03.14 Bridge 10

Bridge 10 is shown looking Southeast.



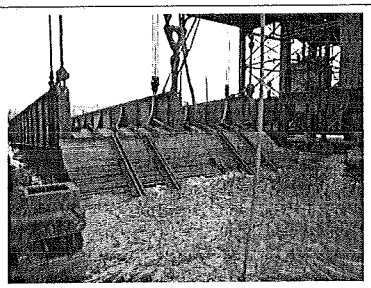
G.03.15 Bridge 11

Bridge 11 is shown looking Southeast.



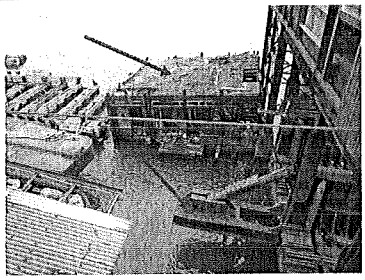
G.03.16 Bridge 9 Apron

Apron 9 is still intact.



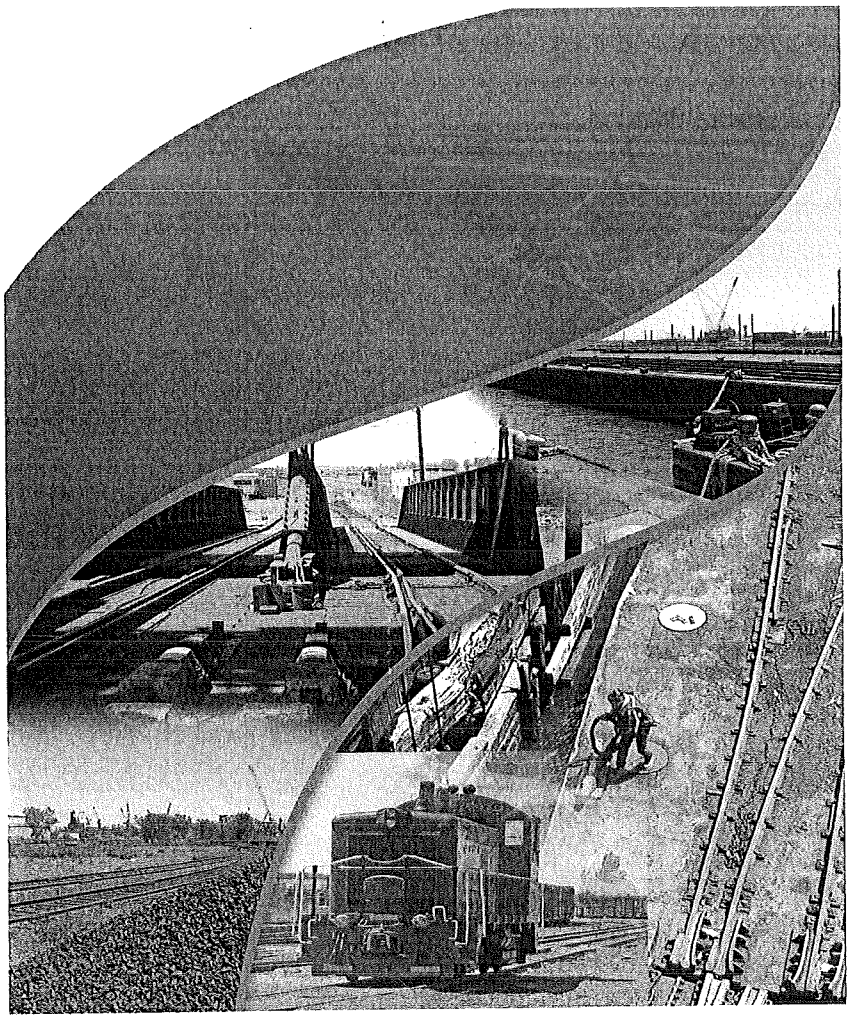
G.03.17 Bridge 10 Apron

Apron 10 with east end submerged.



G.03.18 Bridge 12 Apron and Power House

Apron 12 (bottom) is shown with only remnants of two center stringers that are attached to the apron strut. The abandoned power house (top) is shown.



THE PORT AUTHORITY OF NY & NJ

Greenville Yard

Cross Harbor Freight Program

Design Development Report
100% Submission

Contract No. 11 –
65th Street Facility Fender and Mooring System

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PID# 12189000

Contents

Executive Summary

Introduction

Greenville Yard is the western terminus of the current rail car float (barge) system, which operates between Jersey City and 65th Street Facility on the Brooklyn waterfront. The rail car float system that moves goods across the New York Harbor has been in existence since before the growth of the national highway system and before the construction of vehicular bridges spanning the Hudson River. The Cross Harbor rail freight operation at Greenville Yard once encompassed six rail transfer bridges, as many as thirty-nine rail car floats, and upland rail support facilities. Today only one remaining transfer bridge structure (Bridge #11) is operational in Greenville Yard.

The operator of the rail car float system is New York New Jersey Rail, LLC (NYNJ Rail), a switching and terminal railroad owned by the Port Authority of New York and New Jersey (PA) since November 2008. Since freight trains are not allowed in Amtrak's North River Tunnels, and the Poughkeepsie Bridge was closed in 1974, the ferry is the only freight crossing of the Hudson River, south of the Alfred H. Smith Memorial Bridge, 140 miles to the north of New York City. The Cross Harbor Freight Program (CHFP) is the last remaining rail car float operation in the Port of New York and New Jersey.

65th Street Rail Yard is one of two possible receiving sites for the Cross Harbor Freight Program, across New York Harbor from Greenville. The Bush Terminal, at 51st Street, was the sole connecting site for Greenville's rail cars until November 2012, when the NYNJ Rail transferred car float operations to the 65th Street Rail Yard Facility, to ship and receive rail cars to and from Greenville Yard. Until November, 2012 the 65th Street facility had not been utilized by the Cross Harbor Freight Program on a steady basis. However, as of November, 2012 the 65th Street facility resumed operations as the eastern terminus of the current rail car float (barge) system between Brooklyn and Greenville Yard.

The 65th Street facility was rebuilt in 2001 to accommodate existing, three track wide car floats. As part of the Port Authority's plan for rail car float service expansion, replacement car floats, four tracks wide, (with double the rail car capacity) will be placed into service. Due to the wider car floats that will soon be calling the 65th Street facility home and subsequent service expansion, it is necessary to modify the current berths and fender system to accommodate the four-track wide car floats. The 65th Street Yard currently has one of its two bridges in service. This Yard will be expanded through the CHFP to utilize both Bridge No. 1 and Bridge No. 2, as service demand increases. Additionally, the fender system at the 65th Street Facility will be re-designed to allow for the simultaneous berthing of two four-track wide car floats.

Under its CHFP, the Port Authority of New York and New Jersey, with funding from the Federal Highway Administration (FHWA) is redeveloping the Greenville Yard in Jersey City. This redevelopment is being done to increase the amount of freight moved by rail; thereby reducing the region's dependence on trucks. The major goal of the CHFP is to improve goods movement by rail across New York Harbor.

The HDR team is currently authorized to proceed with Contract 11, which is the re-design of the fender system at 65th Street to accommodate four-track wide car floats.

The following is a brief outline of the work items for each of the disciplines involved in Contract 11:

Environmental

The Environmental section will discuss the existing hazardous materials present within the project limits and methods of disposal. This section will also discuss permitting requirements and dredging work to be performed at the site.

Geotechnical

The Geotechnical section will discuss the foundation piling conditions for the rehabilitation of the fenders and mooring system at Slip No. 1 and Slip No. 2

Naval Architecture

The Naval Architecture Section will discuss improvements to the fender and mooring systems for Slip No. 1 and No. 2.

Sustainable Design

This section will provide a summary of the Sustainable Design aspects of the project. A sustainability checklist, for Contract 11 is also included.

Construction Cost Estimate

Construction Cost Estimates are prepared for each applicable discipline of the Design Development Report (DDR).

Construction Phasing, Staging and Schedule

A Construction Schedule and discussion is provided in this Design Development Report. Staged construction is also considered.

Chapter 1 - Contract Overview

1.01 Program Overview

Greenville Yard is the western terminus of the Cross Harbor Freight railcar float (barge) system, which operates between Jersey City, NJ and since 2012, the 65th Street Facility on the Brooklyn, NY waterfront. This barge system that moves goods across the New York Harbor has been in existence since before the growth of the national highway system and before the construction of vehicular bridges spanning the Hudson River. The Cross Harbor rail freight operation at Greenville Yard once encompassed six rail transfer bridges, as many as thirty-nine rail barges, and upland rail support facilities. As of October 2012, Transfer Bridge Nos. 9, 10 and half of 12 are still standing but inoperable and Transfer Bridge No. 11 was still operational. In October 2012, damage from Hurricane Sandy and structural stability concerns forced the emergency demolition of Greenville Yard Transfer Bridges Nos. 9, 10, 11 and 12. A pontoon bridge floated from Bush Terminal was retrofitted to fit at the Greenville Yard Slip No. 11 and is currently the only operational transfer bridge at Greenville Yard. Barge No. 16 is currently the only operational car float utilized in the Cross Harbor Freight Program (CHFP).

The operator of the railcar float system is New York New Jersey Rail, LLC (NYNJ Rail), a switching and terminal railroad owned by the PANYNJ since November 2008. Since freight trains are not allowed in Amtrak's North River Tunnels, and the Poughkeepsie Bridge was closed in 1974, the CNYNJ Rail is the only freight crossing of the Hudson River south of the Alfred H. Smith Memorial Bridge, 140 miles to the north of New York City. The Cross Harbor rail freight operation is the last remaining car float operation in the Port of New York and New Jersey.

Ultimately, the Greenville Yard area will contain three distinct rail transfer sections: an Intermodal Container Transfer Facility (ICTF) to support the Global Terminal operations at Port Jersey Peninsula, a barge-to-rail container transfer facility, and an expanded Cross Harbor Rail Freight Program.

Under its CHFP, the PANYNJ, with funding from the Federal Highway Administration (FHWA), is redeveloping the Greenville Yard in Jersey City. This is required to increase the amount of freight moved by rail; thereby reducing the region's dependence on trucks. The major goal of the CHFP is to improve the flow of goods by rail across New York Harbor.

This program is divided in to the following twelve (12) Contracts as follows:

- *Contracts 1 and 1A – Rehabilitation of Transfer Bridge No. 11 and Fender Slip No. 11 (Active)*

  This Contract has changed after damage from Hurricane Sandy, which forced the emergency demolition of all four transfer bridges at the Greenville Yard (Transfer Bridge Nos. 9, 10, 11, 12). However, prior to this action, the scope for Contract 1 (Contract Number NYNJR 644.515) included all of the design work required to bring Bridge No. 11 to a safe operating state with a reliable service life of seven (7) years. Contract 1A (Contract Number NYNJR 644.519) included all of the design work required to bring Fender Slip No. 11 to a safe operating state with a reliable service life of seven (7) years. Due to the poor condition of the existing Transfer Bridge 11 structure, emergency monitoring, temporary and shoring repairs were also required. These emergency repair designs were a subset of Contract 1 "Repair of existing transfer Bridge No. 11" and were being performed by Railroad Construction Company as an add-on to Contract Number NYNJRR 644.520. Currently, HDR is wrapping up the as-built demolition plans for the Greenville site under Contract 1.

- *Contract 2 – Replacement of Car floats (Active)*

  Contract 2 (Contract Number NYNJR 644.516) includes design effort required to produce procurement documents that will outline a method of either procuring two new car floats or updating two car floats to safely work with the existing and future operation of the Cross Harbor Freight Program.

- *Contract 3 – Support Tracks for Transfer Bridge No. 9 (On Hold)*

  Contract 3 includes all of the design work required to construct new railroad tracks to Bridge No. 9, and required yard improvements including drainage, lighting, and other utilities. This contract is currently on hold and any remaining effort is being rolled into Contract 8.

- *Contract 4 – Off-Site Tracks (Tropicana) and Reconfigure "A" Yard Tracks (Active)*

  Contract 4 includes all of the design work required to construct new lead in tracks to the Tropicana site and connections to A Yard.

- *Contract 5 – Demolition of Bridge Nos. 9, 10, and 12 (On Hold)*

  Contract 5 included all of the design work required to demolish Bridge Nos. 9, 10, and 12. Due to the emergency demolition of Transfer Bridge Nos. 9, 10, 11 and 12 under Contract 1, this contract is in the process of being cancelled and no further updates will occur for this Contract.

- *Contract 6 – Transfer Bridge No. 9 (On Hold)*

  Contract 6 includes design work that will be required to construct new transfer Bridge No. 9, new fenders for Bridge No. 9, and all dredging required for barge operations at the new bridge. This work is only authorized through the Basis of Design Report phase.

- *Contract 7 – Replacement of Car floats (On Hold)*

  Contract 7 includes all of the design work required to produce procurement documents for a new rail car float to be used at all NYNJ Rail locations; which will mirror the results of Contract 2. Subsequently, no additional updates will occur for this Contract. This effort will roll into Contract 2.

- *Contract 8 – Tracks for Transfer Bridge No. 10 (Active)*

  Contract 8 includes all of the design work required to construct new railroad tracks to Bridge No. 10 with additional work from Contract 3 being the design work required to construct new railroad tracks to Bridge No. 9. This Contract will now also include other design work from Contract 3, namely yard improvements including drainage, lighting, and other utilities.

- *Contract 9 – Transfer Bridge No. 10 (Active)*

  Contract 9 includes all of the design work required to construct the new transfer Bridge No. 10 and new fender system for Bridge No. 10. This work has been authorized through the Design Development Report phase only.

- *Contract 10 – Demolition of Transfer Bridge No. 11 (On Hold)*

  Contract 10 includes all of the design work required to demolish Bridge No. 11. No work is proceeding at this time. Consequently, this contract is being closed due to the emergency demolition of the transfer bridges at Greenville Yard.

- *Contract 11 – 65th Street Facility Fender and Mooring System (Active)*

  Contract 11 includes all of the design work required to modify the fenders and dolphins at the 65th Street Facility in New York. This work has been authorized through the Design Development Report phase.

The HDR team was authorized to proceed with Contracts 1 through 5 in September 2011. The HDR team was authorized to proceed with Contract 7 on January 12, 2012 and Contracts 6 and 9 on April 12, 2012. Contract 8 was authorized September 21, 2012 and Contract 11 was authorized to proceed on October 3, 2012. Contract 10 was never given an official notice to proceed.

1.02 Contract 11 Scope

A determination was previously made in the Car Float Dimensional Analysis portion of Contract 2 that the proposed four-track wide car float could operate at 65th Street in Brooklyn, with modifications to the fender systems at both of the facility's berths. It was therefore determined that modifications to the 65th Street facility's fender system, including capacity calculations for the remaining sections of fender system for the larger displacement four-track wide car float would be required. The HDR team was subsequently requested to provide a proposed contract scope for this additional work. The following is the authorized scope of work for Contract 11:

Engineering and design services for the 65th Street facility Slips, #1 and #2 will include the following:

- Modify current fender system to allow two; four-track wide car floats to berth at the lift bridges.
- Analyze the remaining central fender system to determine its ability to accommodate the four track wide rail car capacity car floats. Design revisions to the central fender system
- Revise the design for the outboard fender systems at the two (2) berths in order to replace the outboard systems being removed to accommodate the four track car floats
- Prepare new design for required mooring and/or breasting dolphins to berth two rail car floats, using largest car float displacement in operation, four-track wide car float
- Investigate, design, and incorporate rolling fender system on the alignment dolphins
- Coordinate tug operator review to confirm fender and dolphin geometries arrange and attend one phone conference
- Prepare drawings for environmental permitting applications based on client approved 30% design level details
- Prepare construction technical specifications
- Prepare construction drawings
- Perform mooring analysis for two four track wide car floats at 65th Street Slips #1 and #2 and preparation of subsequent report
- Review shop drawings and respond to RFI's during construction
- Provide input for project schedule
- Construction cost estimating
- Construction scheduling
- Preparation, application, submittal and expediting of environmental and building permits
- Mooring analysis.
- Shop drawing review and responding to RFI's during construction

Chapter 2 - Environmental

2.01 Overview

The environmental aspect regarding the proposed fendering and mooring improvements at the 65th Street Rail Yard Bridge includes the acquisition of environmental permits for the proposed in-water construction activities and for the removal/disposal of any hazardous materials (e.g., either from dredged sediments or removed in-water structural elements). Those environmental permits to perform such work are identified in this section. Items containing regulated or hazardous materials, which must be handled appropriately to mitigate health hazards to personnel as well as the surrounding environment, are also herein identified.

It should be noted that the existing fendering/mooring system is relatively recent as it was constructed in 2001 during the last rehabilitation effort of the 65th Street Rail Yard by the New York City Economic Development Corporation (NYCEDC). However, the new design criteria of the PANYNJ's Cross Harbor Freight Program (CHFP) now require a different fendering/mooring system for wider rail barges with larger capacity than the car floats car floats never considered during the last rehabilitation design of 2001. As a result, the existing fendering/mooring system will be removed in its entirety in order to allow for the construction of a newly-design system. In order to accommodate for sufficient 2-foot under keel clearance, a new project design depth of -15 feet below Mean Low Water (MLW) will be accomplished via additional dredging; as further detailed in Chapter 4 (Naval Architecture)

Upland work (above Mean High Water - MHW) is not anticipated for the existing gantry platform or the actual rail yard.

2.02 Permitting

2.02.01 Field Evaluation

As noted above, the existing fendering/mooring system is relatively new (about 10 years old) and it consists of three (3) separate Steel piling, timber faced fields/racks with associated walkway, ladder, and navigational hardware, as depicted in Appendix A. Overall, the existing system consists of approximately nine (9) 30-inch diameter steel pipe pilings along with fields of typical timber piles (18-inch diameter). Combined footprint is about 8,000 square feet, for an estimated water column volume of about 70,000 cubic feet below MLW (assuming an average depth of about 9 feet below MLW at the fender racks). The entirety of this existing fendering/mooring system will be removed pulling all piles down to bedrock or their respective design depths. No piles will be cut down to the mud line.

- **Regulated Materials**

In spite of the relatively new design of the existing fendering/mooring system (about 10 years old), it is expected that the structural elements to be removed will:

- Contain some asbestos-containing materials (ACM) associated with the slip fender system (creosote-coated timber piles) as well as the walkway, ladder, and navigational hardware (including electrical components).
- Not contain any lead-based paints.

In light of the necessary dredging activities, the sediment sampling and testing plan still needs to be performed in order to fully ascertain the sediment characteristics and chemistry to be disposed of. However, it is anticipated that the characteristics of the material retrieved will be typical of the accumulated sediments found in the waters surrounding the industrial waterfronts of the New York City metropolitan area. Due to the presumed physical and chemical characteristics of the material to be dredged, it is expected that the dredged material is non-Historic Area Remediation Site (non-HARS) suitable and it will be placed at the PANYNJ-owned upland disposal facility at the UTEX site; as further detailed in Chapter 4 (Naval Architecture).

2.02.02 Design Approach

At the time this version of the Design Development Report was prepared, no preliminary consultation has yet occurred with either the U.S. Army Corps of Engineers (USACE) or the New York State Department of Environmental Conservation (NYSDEC) - most importantly nor with the U.S. Fish and Wildlife Service (USFWS), U.S. Coast Guard (USCG); the National Marine Fisheries Service (NMFS), the New York State Department of State (NYSDOS), and the New York City Department of City Planning (NYCDCP). Preliminary coordination (including formal pre-application meetings) with those regulatory agencies and preparation of respective environmental documentation (listed below) will be initiated shortly after the submittal of this DDR version to the PANYNJ. Ultimately, this Chapter of the DDR will be updated as permits and approvals are obtained from the respective regulatory agencies. There are a number of applicable federal and state regulations that will govern the in-water construction, dredging, and dredged material disposal. Due to the project scope, which includes expanding the mooring facilities to accommodate larger barges and dredging beyond previously authorized limits, it is anticipated the project will not qualify for a federal Nationwide Permit (NWP). Therefore, an individual permit through the Joint NYSDEC/USACE Joint Permit Application process will be required for the construction activities and dredging in the regulated tidal waters of the Upper New York Bay below MHW). At a minimum, the Joint Permit Application will require compliance with the following statutes and regulations:

- Section 404 of the Clean Water Act for the "Discharge of Dredged or Fill Materials into all Waters of the U.S."
- Section 10 of the Rivers and Harbors Act for "All Structures and Work within the Navigable Waters of the U.S."
- Section 401 of the Clean Water Act – NYSDEC Water Quality Certificate (WQC)
- Coastal Zone Management Act - The proposed improvements would be located within the regulated coastal zone and will require coastal zone consistency documentation. Therefore, consultation with NYCDCP/NYSDOS will be required for consistency with the locally-mandated Waterfront Revitalization Program (WRP); last revised in 2011 and also known as the "Vision 2020; the New York City Comprehensive Waterfront Plan".
- Section 7 of the Endangered Species Act - consultation with NYSDEC, USFWS, NMFS.
- Magnuson-Stevens Fishery Conservation and Management Act (MSA) - Essential Fish Habitat (FH) consultation with NMFS.

Section 106 of the National Historic Preservation Act (NHPA) - While consultation with the New York State Office of Parks Recreation and Historic Preservation (NYSOPRHP) and the New York Landmark Preservation Commission (NYCLPC) will be required; it is anticipated that no listed or eligible resources will be adversely affected by the proposed project. In light of the proposed dredging activities, a Sediment Sampling & Testing Plan (S&T Plan) will need to reviewed, approved and performed in compliance with NYSDEC's regulations. At minimum, compliance with the NYSDEC Division of Water's Technical and Operational Guidance Series (TOGS) 5.1.9 "In-Water and Riparian Management of Sediment and Dredged Material" will required. However, in the event that the dredged material is disposed of within a UTEX facility in the State of New Jersey, additional approvals and permits may be required with the New Jersey Department of Environmental Protection (NJDEP). Under such circumstances, the combined NYSDEC/NJDEP Joint agreement Letter of 2003 for "Sampling & Testing Protocol for Dredged Material" Plan Letter of July 2003 would be applicable at

NYSDEC/NJDEP's discretion. Regardless of disposal methodology, the final S&T Plan and Sediment Analysis Report - once completed - will be referenced to Chapter 4 "Naval Architecture" and appended to this DDR.

While no new structural elements will be placed within the U.S.-designated Navigation Channel (the Bay Ridge Channel along the South Brooklyn waterfront); it is anticipated that limited coordination with the USCG will be required for those proposed mono-pile fenders that are located the furthest away from the shore.

- ***Regulated Materials***

While only few asbestos-containing materials (ACM) would be encountered during the removal of the existing mooring/fenders, their respective disposal will be performed pursuant to NYCDEC regulations. In addition, any PCB-containing material (caulk and creosote piles) is considered non-hazardous, but removal and disposal of this material will require proper disposal at a licensed facility.

Under the new design for the proposed fender and mooring system, it should be noted that the use of several mono-pile fenders (rather than fields of standard timber piles) will improve sustainability by removing numerous quantities of creosote piles in the Upper New York Bay.

2.02.03 Design Calculations

There are no Environmental Calculations at this time. However, this section will ultimately refer to the 100% design plans and present a matrix table that summarizes the number of new in-water piles along with their respective combined impact to benthic habitat (footprint impacts in square feet) and water column habitat (volume impacts in cubic feet). A comparison between existing and proposed conditions will also be presented in order to make the case that overall in-water environmental conditions have been improved (smaller footprint than before).

See dredging discussion for calculations behind the required area and sediment volume to be dredged.

2.03 Dredging

2.03.01 Project Description

The project consists of the dredging of the berthing area at the 65th Street facility in Brooklyn, NY, necessary to safely navigate the design vessel (car float barge) and accompanying tug(s) to the berth for loading and unloading operations. The new car float design provides for a barge with a maximum length overall (LOA) of 270 feet and a maximum beam of 59 ft. Vertical distance from the deck to the keel is 14 feet, with a fully loaded design draft of 10 ft. Assuming a desired underkeel clearance of 2 feet, the dredging project design depth for the car float is -12 feet mean low water (MLW). However, the tug requires an operating depth of -15 feet MLW. The car floats will be capable of carrying 18 60-ft rail cars on an arrangement of four parallel rails. Due to the rake (3:1 slope) of the bow, the car floats will require a minimum water depth of -12 feet MLW approximately 30 feet from the edge of the existing bridge to the stern of the barge, a distance of approximately 240 ft. Since existing water depths are probably less than 15 feet more than 270 feet offshore, it is anticipated that dredging will be required beyond the immediate vicinity of the 65th Street Bridge slips to accommodate the new car floats and tugs.

2.03.02 Existing Bathymetry

A hydrographic survey was conducted by AmerCom Corporation using a SonarMite echo sounder from 11/29/12 to 12/14/12. The area surveyed was from the bridge slips seaward to approximately 950 feet offshore and approximately 650 feet wide. Depths in the vicinity of the bridges ranged from -4.55 feet MLW near the edge of the bridge to -39.68 feet MLW approximately 950 feet offshore. Currently, calculations are being performed to determine the proposed dredge area and dredge quantity required for the operation of the new car floats and tug. Upon completion of the drawing and calculations a revised DDR will be prepared and submitted for review and approval. Assuming a dredging footprint of approximately 6,100 square yards (110 yards by 55 yards), it is anticipated that approximately 8,000 cubic yards would have to be dredged from the bridge slips and nearby area. This dredging footprint and estimated quantity will be revised and confirmed, once the new soundings are plotted on a drawing and subsequent volume calculations are completed. A one foot allowable overdredge would add an additional volume of 2,000 cubic yard for a total of 10,000 cubic yard.

2.03.03 Sediment Characteristics

In support of the proposed dredging work and required permit applications (as discussed in Chapter 2 – Environmental), HDR will prepare/submit a sediment sampling and testing (S&T) plan for review by the New York State Department of Environmental Conservation (NYSDEC), pursuant to NYSDEC's Division of Water-Technical and Operational Guidance Series (TOGS) 5.1.9. In turn, the results of the chemical analyses will enable HDR to determine the most suitable disposal site or beneficial use for such dredged material. Upon NYSDEC's approval of the Sediment S&T Plan, the actual sampling and laboratory analyses will be performed by PANYNJ's contactors. The results of the Sediment Sampling Report and findings of the sediment characteristics will then be reported in this section of the DDR.

2.03.04 Dredging

The minimum dimensions of the proposed dredging template are 110 yards by 55 yards (rectangular area). This area is an estimate and will likely be revised once the current bathymetry is plotted. The minimum dredge depth shall be 15 feet below MLW with an allowable overdredge tolerance of 1 foot. An additional paid overdredge amount will generate 2,000 cubic yard for a total of 10,000 cubic yard.

Due to the confined area and likely disposal options, the contractor shall utilized a mechanical dredge (clamshell or backhoe) and place the dredged material in a scow for transport to the upland disposal site. Depending on the actual dredged volume and the equipment provided, it is possible that the material could be removed in two barge loads. Since no side slope dredging will be specified, the contractor shall dredge to the project depth, to the horizontal limits of the template and allow the adjacent material to seek its natural angle of repose. A second pass around the perimeter of the template with the dredge will remove any material that sloughed in and will ensure complete removal of sediment to -15 feet MLW within the template.

Approximate dredge limits shall be revised and finalized after current bathymetry is provided and plotted. It will be the dredging contractor's responsibility to perform a detailed hydrographic survey and to determine the final dredge limits and volume. The required dredged depth shall be verified by post-dredge hydrographic survey.

2.03.05 Dredged Material Disposal

A suitable dredged material disposal site will be selected after the results of the sediment analysis and subsequent consultation with NYSDEC. Due to the presumed physical and chemical characteristics of the material to be dredged around the 65th Street facility, it is expected that the dredged material is non-HARS suitable and it will be have to be disposed of at an approved upland facility.

2.03.06 Permitting

There are a number of applicable federal and state regulations that will govern the in-water construction, dredging, and dredged material disposal. Due to the project scope, which includes expanding the mooring

facilities to accommodate larger barges and dredging beyond previously authorized limits, it is anticipated the project will not qualify for a federal Nationwide Permit (NWP). Therefore, an individual permit from the Department of the Army, through the Joint Permit Application process, will be required for the construction activities and dredging in a U.S. navigable waterway. The proposed project will require, at a minimum, compliance with the following statutes and regulations:

Section 404 of the Clean Water Act

Section 10 of the Rivers and Harbors Act

Section 401 of the Clean Water Act – NYSDEC Water Quality Certificate

Consistency with the Coastal Zone Management Act

Section 106 of the National Historic Preservation Act

Endangered Species Act

Magnuson Stevens Fishery Conservation and Management Act

In the event that the dredged material is disposed of within the State of New Jersey, additional approvals and permits may be required.

2.03.07 Design Calculations

The dredge volume quantity will be calculated using Autodesk Civil 3D software program. The methodology used will be to develop a proposed 3D surface of the dredge limits defined for this project and compare that to the new updated bathymetry survey data surface to yield the desired volume quantity. A quantity will be calculated for the design depth (-15' MLW) and a separate quantity will be calculated for the additional 1' overdredge quantity.

Chapter 3 - Geotechnical

3.01 Overview

The proposed fender system will require installation of large diameter monopiles for mooring/breasting the car floats proposed for the Cross Harbor Freight Program. The monopiles will also be designed to capture a runaway car float. Monopiles are proposed at or near the existing shore's edge and at a distance of approximately 250 to 300 feet outshore of the existing bulkhead. The required monopile diameter, wall thickness and length will depend on the loading and lateral load capacity that can be achieved in the given subsurface soil conditions.

The available subsurface information obtained from the nearshore borings made in 1988 for the reconstruction of the 65th Street Rail Yard and borings made adjacent to the site for the original construction of the Owl's Head Water Treatment Plant immediately south of the site will be used to develop the soil design profile and parameters for analysis and design.

3.02 Field Evaluation

Based on the subsurface information available for the site and the fact that relatively uniform subsurface conditions exist to a significant depth at the site, additional subsurface investigation will not be required. Soil design parameters will be estimated using the available subsurface information for developing the monopile response for the given lateral loads.

The available geotechnical information for the site indicates that nearshore subsurface conditions comprise approximately 15 feet of soft organic silt and clay overlying a deep deposit of moderately compact to compact sand and gravel. Subsurface conditions further outshore comprise approximately 20 feet of soft organic silt and clay overlying approximately 15 feet of loose to lightly compact sand, overlying a deep deposit of moderately compact to compact sand and gravel with little clay. Water depths vary from approximately 10 feet at the inshore end to approximately 13 feet at about 300 feet outshore of the bulkhead. Top of rock is very deep at the site.

3.03 Design Approach

The monopile fenders will be designed to take the full design lateral loading in cantilever action. Monopile lateral load capacity is developed primarily in the upper competent soil strata and will depend on the monopile stiffness and depth below the mudline where fixity is achieved. Monopile length will be selected to develop the fixity required to provide the design lateral load capacity. The pile lateral stiffness will be governed primarily by its wall thickness, which can be varied along the pile length in accordance with the stiffness and strength demand to achieve economy. Pile lateral stiffness may also be supplemented with concrete fill (reinforced or unreinforced) within the pile, if necessary.

The lateral load analyses performed for a 48" and 60" diameter x 1" wall monopile for the nearshore conditions indicate that the minimum pile tip depth required to develop fixity is approximately 65 feet below the existing mudline for the 48" monopile and approximately 72 feet for the 60" monopile. Similar analyses performed for outshore conditions indicate that the minimum pile tip depth required is approximately 70 feet below the mudline for the 48" monopile and 77 feet for the 60" monopile.

The analysis results indicate that the 48" diameter monopile can provide an ultimate lateral load capacity of 160 kips at a lateral deflection of approximately 18 inches for the inshore conditions and 150 kips and 19 inches of deflection for the outshore conditions. The 60" diameter monopile capacity is governed by the structural capacity and can provide an ultimate lateral load capacity of 192 kips at a deflection of about 10 inches for the inshore conditions and 192 kips for the outshore conditions at a deflection of 12 inches.

3.04 Design Calculations

The soil-structure interaction analysis program L-PILE will be used to develop pile-soil response for the proposed loading for determining depth to fixity, strength demand and deflection with depth. The monopile capacity design will be based on allowable stress design. The soil design profile used for the program input and the program analysis plots for the monopile bending moment capacity, pile bending moment versus lateral load and pile deflection versus lateral load are included in Appendix D.

Chapter 4 - Naval Architecture

4.01 Overview

The Port Authority of New York New Jersey intends to use the 65th Street Rail Yard facility in Brooklyn New York for the transport of rail cars, loading and discharging to/from car floats. The yard went into full-time operation after a period of closure. Projections for demand of the facility's services are expected to grow over the near term. The Port Authority has several existing rail car floats; however only one is now operable, Car Float #16. The PANYNJ is in the process of procuring two sister car floats, under Contract 2. These new car floats will be used to transport rail cars across New York Harbor between 65th Street Rail Yard and Greenville Rail Yard. The capacity of existing Car Float #16 is (9) 60-foot long fully loaded rail cars, weighing 286,000lbs each. The car floats being designed and procured will be four-tracks wide and accommodate (18) 60-foot long fully loaded rail cars per car float. This work is being performed under Contract 11 of the Cross Harbor Freight Program (CHFP) with the purpose to upgrade the 65th Street Rail Yard so that it may load and unload larger four-track wide car floats. The capacity of the proposed four-track wide car floats is (18) 60-foot long fully loaded rail cars, weighing 286,000lbs each. The facility will be used by New York New Jersey Rail, LLC.

4.02 Field Evaluation

The 65th Street Rail Yard is similar to Greenville Rail Yard in that it is a rail car float loading and discharge facility. The yard ties the rail car transport operation from New Jersey into the greater New York freight rail system. In year 2000, the rail yard was rehabilitated with new fender and mooring structures; two new bridges, #1 and #2, with gantry systems, and other associated components to make the facility functional.

Four-track wide car floats, with the proposed capacity of the new car floats currently being procured, were never considered during the rehabilitation design of 1997. The Port Authority of New York New Jersey has now requested that the 65th Street Yard be re-designed to accommodate these larger vessels. In preparation for the facility's projected service increase. The 1997 rehabilitation considered that only the Port Authority's narrower and shorter existing Car Float #16 and Car Float #29, be accommodated. Through the new facility, suitability must be maintained for existing Car Float #16 as well as the proposed four-track wide car floats. Existing Car Float #29 is no longer in service.

This scope of work includes evaluation of the existing facility's fendering and mooring capabilities for the new design vessels, design of new fender and mooring structures as required, a mooring analysis using existing metocean data and construction support.

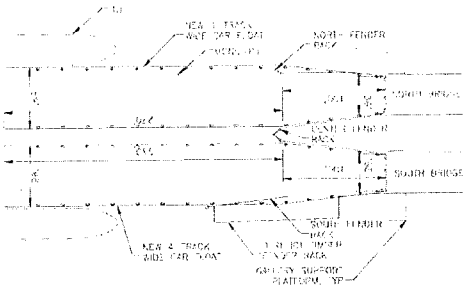


Figure 1 – Existing 65th Street Facility W/ Proposed Car Floats Shown

Three different sized car floats, two new and one existing, drive this design process. The two proposed car floats to be procured and may vary in length overall from 360 feet to 370 feet, and vary in beam from 57 feet to 59 feet. The existing car float has length overall of 290 feet and beam of 41 feet. The new car floats require a wider berth for approach and mooring than that required for the existing car float. Shown in Figure 1, the existing North Fender Rack, South Fender Rack, North Mono-pile and Derelict Timber Fender Rack are within the footprint of the superimposed four-track wide proposed car floats. The existing structures built in 2000 are in relatively good condition and because of this, their re-use and adaptation for the new facility was considered. In order to re-use these existing fender and mooring elements, they would need to be salvaged, refurbished and reinstalled. Also, due to the larger loads, each structure would need to be built-up to meet minimum strength requirements. It is estimated that this cost would exceed the cost of the new proposed facility elements and perform less adequately; therefore it is recommended that all four of these structures be removed.

The Center Fender Rack, as shown, maintains a one-foot offset from the bow of the proposed car float. This fender rack was not designed for the displacement of the proposed car float, which is nearly twice the displacement of the existing car float. Although the existing Center Fender Rack could be shored up to accommodate the increased loads, the cost is estimated to exceed the three replacement mono-pile dolphins, both in installation cost and in maintenance cost, and therefore, it is recommended that the Center Fender Rack be removed as well. See Appendix, D for Port Authority supplied as-built drawings for the 65th Street facility. See Appendix D for the evaluation analysis of the existing Center Fender Rack.

4.03 Monopile Fenders

Nine, monopile Fenders are being proposed for fabrication and installation at the 65th street facility, to replace the existing fender structures. The monopiles are each identical and consist of a 60 inch diameter, 1.378 inch wall thickness, steel pipe pile installed deep into the overburden, per the geotechnical design. Geotechnical design has determined a minimum tip elevation of -85 feet, MLW. Floating around each large diameter piling is a foam fill donut fender. See SK-107, Appendix A. On top of the floating donut fender rests a steel fabricated bollard ring that has 4 mooring points.

The foam donut fender will measure approximately 13 feet in outer diameter. The inside diameter of the donut will be just larger enough to spin freely around the piling, without binding. The foam donut is a composite of incompressible foam (does not absorb energy) and compressible foam (does absorb energy from vessel collisions). The incompressible foam acts as a spacer to provide the car float a further standoff distance from the piling, such that the car float does not contact the above bollard in the case of a collision. The foam is covered with a fiber reinforced poly urethane skin both, to keep water out of the foam and to protect against abrasion.

The monopile fender proportions, geometry, relation to the bollard rings, freeboard, draft, line loads, angles of loading and load cases were all considered in the design. The monopile fenders can function both for mooring and berthing simultaneously in our case of adjacent Slips No. 1 and No. 2, which share several of the proposed structures.

4.04 Approach and Berthing

New monopile fenders are designed to aid in berthing each car float. The fender system will be stiff, but able to dissipate impact energy without being damaged under design operation and storm conditions. Monopiles will serve as both a guide to align car floats on approach and as a fulcrum from which to turn the car float about for alignment correction. The donut fenders rise and fall with the tide and are free to rotate, minimizing wear and tear upon berthing of the car floats.

A tug may be tied to the starboard side of a car float, while docking at South Slip No. 1, or the port side while docking at North Slip No. 2, for either the new or existing car floats. Vertical, "spotting" poles are mounted to the monopile fenders to aid the tug operator in locating these structures when approaching with a loaded car float. These poles will extend above the top of the rail cars and be visible to the tug captain at all operating water levels and conditions. One, solar power navigation light is provided on the out shore most monopile. The light will be required to comply with US Coast Guard regulations imposed from the project permit.

4.05 Mooring

Based on the proposed berth configuration shown in Figure 2 below, car float moorage at each berth is supported by the bridge slip equipped with high capacity winches and nine monopile dolphins each with a floatable donut fender and a four-bollard ring refer to Appendix A for design drawings. A bollard ring is mounted on top of the donut fenders and rotates independently of the donut fenders, such that the donut fenders may freely rotate during vessel impact, while another car float is tied to the bollards in the adjacent slip.

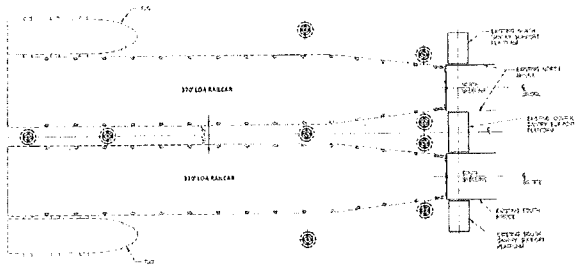


Figure 2 –65th Street Facility W/ Proposed Fender System Shown

A mooring analysis was performed to optimize monopile placement and to assess limiting environmental conditions for the new car float for both loading / unloading operations and over-night (non-operation) moorage. In this study, a set of possible worst-scenario mooring cases were analyzed under the design environmental conditions. According to the Basis of Design document, it has been assumed that the 3-second gust of 35 mph is the limiting wind speed for the operating condition, and the 50-year return period storm condition (104 mph gust speed or 3.7 ft. wave) is the limiting condition for non-operation moorage. For a more severe environmental scenario such as a major hurricane approach, it is recommended that the float is taken for sheltering in advance of the event.

Figure 3 below shows the recommended car float mooring arrangements.

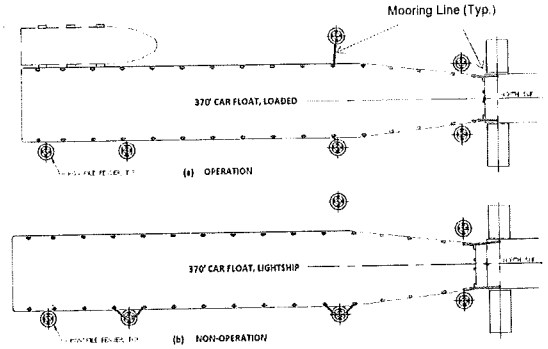


Figure 3 –65th Street Facility W/ Proposed Mooring Arrangement Shown

as shown in Figure 3a, during or loading / unloading operations, 50 ton load capacity winches on the bridge are required for tensioning head lines and holding the loaded float in place. Two head lines and two breasting lines are generally required, however in a worst condition scenario, double breasting lines on the berthing dolphin side are recommended.

For overnight moorage, the float should be pulled away 9 ft. from the bridge face, so that the two monopile dolphins in the middle are aligned to the center of two adjacent cleats on the float (see Figure 3b above). Two head lines and four breasting lines are generally required. However in the case of severe northerly wind storms, two additional breasting lines should be added using the offshore-most monopile dolphin. All mooring lines should be loosely tied up in a consistent way so that no load concentration occurs in any individual line.

Mooring analysis results suggest that the proposed mooring design will satisfy the mooring requirements for the proposed car floats. Design mooring loads were developed based on the analysis results, to check mooring structure design. It has been confirmed that the proposed mooring bollard load capacity (30 tons) and the recommended mooring rope size (125 kip minimum breaking strength) are appropriate for car float moorage under the design conditions.

Refer to the mooring analysis report in Appendix D for further details.

4.06 Access

In the operation configuration, all car floats may be accessed via the bridge. In the non-operation configuration the car float will be pulled away from the bridge face. A removable walkway may be used to board the moored vessel from the bridge face.

4.07 Design Life

The service life that the proposed structures are being designed for is 50 years. Fifty year is a typical service life to design marine structures by and is consistent with that of the assumed design life for the existing 65th Street Bridges, No. 1 and No. 2, as well as the proposed Greenville Yard bridges, which will also be designed and constructed under the CHFP contracts.

The service life is an added consideration in the design of marine structures and other structures exposed to corrosive environments. Corrosion reduces load carrying capacity over time. Corrosion rates of marine structures are typically related to salinity of the water, wave and current interaction with the structure and temperature of water. Mil loss is the common measurement of damage due to corrosion.

In order to preserve load carrying capacity of the proposed monopile this design recommends that the piling be hot-dip galvanized, for the length exposed to the atmosphere. The bollard ring shall be hot-dip galvanized as well. It may not be practical to galvanize the fabricated donut fender sleeve apparatus, therefore this design allow for coating the exposed steel, per Port Authority Standard Specification for coal tar epoxy coating and installation of sacrificial anodes, as identified on SK-107, of Appendix A.

4.08 Design Calculations

Included in this DDR are calculations that verify the structural adequacy of the fender and mooring system shown on the construction drawings generated for the Port Authority of New York New Jersey at 65th Street Rail Yard, New York. The calculations for the fender and mooring system consider both environmental loads and inertial loads. The environmental load calculations take wind and/or current velocities and transform them into forces acting on the car float. The inertial calculations take the mass and velocity of the car float and the stiffness of the dock and translate them into forces and deflections using standard physics applications and equations. The resulting forces are then applied to the mooring structures which is the basis for the design of the mooring system structural elements. The design of structural elements is based on these forces. Complete calculations are included in Appendix D.

Chapter 5 - Sustainable Design

5.01 Overview

The Port Authority of New York and New Jersey (PANYNJ) has a directive to "to reduce adverse environmental impacts of the design, construction, operation and maintenance and occupancy or leasing of new or substantially renovated buildings and facilities, reconstruction projects, and programs." All project types for the PANYNJ are to achieve a Certified or greater level of sustainability in accordance with the PANYNJ Sustainable Design Guidelines.

Specific credits for the 65th Street Bridge design scope of work were evaluated under 'Marine Structures - Docks, Wharves, Bulkheads, etc.' scope of work utilizing the PANYNJ's Sustainable Infrastructure Guidelines. A total of 7 of 14 credits are suggested for being pursued, ensuring a 'Certified' status in accordance with the PANYNJ requirements. The following provides a detailed explanation of the requirements for each credit suggested. The credit checklist, as provided in Appendix D and this associated write up are living documents. Should the development of design lead to selecting other alternatives for performing work discussed in the Design Development Report, the credit checklist and associated requirements will be re-evaluated.

5.02 Field Evaluation

5.02.01 IM-1: Use Recycled Materials

The purpose of this credit is to incorporate materials with recycled content to preserve the raw materials resource base and to increase value and demand by supporting markets for recycled materials. One point can be achieved for this credit.

To achieve 1 point for this credit the entire quantity of the project's specified materials must meet the percentage of recycled content required in the Sustainable Infrastructure Guidelines for a one of the following: asphalt (RAP), concrete, aggregate base course, non-pavement applications, recycled material on site, or steel.

The Project team will submit documentation showing one of the following have been specified in contract documents:

- 10% recycled content on asphalt RAP top course for all roadways and parking lots
- 25% recycled content on asphalt RAP bottom course for all roadways and parking lots
- Concrete mix shall be designed containing: 30% fly ash OR 40% Ground Granulated Blast Furnace OR 4% Silica Fume OR 10% Metakaolin (clay based pozzolan)
- 50% Recycled Concrete Aggregate (RCA) for Aggregate Base Course
- 25% RCA for Pipe Bedding Material
- 40% recycled content of HDPE for piping material
- 50% recycled content in steel

5.02.02 IC-2: Protecting Existing Natural Systems

The purpose of this credit is to protect the natural environment, as well as any sensitive, natural or cultural features from disturbance, degradation or damage due to construction activities at the site. Two points can be achieved for pursuing this credit.

In order to achieve this credit the Project Team will prepare a site plan proving there will be no site disturbance 10 feet beyond the Limit of Work Line. A description of additional strategies implemented during construction shall also be provided. Strategies that shall be included are:

- Limit site disturbance to a maximum of 10 feet beyond immediate area of the Limit of Work Line as reflected on the site plan
- Utilize compromised or severely compacted land, or hardtop/pavement for storing of equipment and road machinery
- Monitor work to ensure progress according to protection schemes and make adjustments if necessary for greater protection of existing natural systems. When changes are warranted, construction activities shall be adjusted to maintain required disturbance limits and protective measures

5.02.03 IC-4: Utilize Green Construction Equipment

The purpose of this credit is to protect worker health and site atmospheric quality by using current best management practices utilizing EPA recommended diesel emissions control technologies and ultra low-sulfur diesel (ULSD) in vehicles and non-road site equipment. One point can be achieved for pursing this credit.

To achieve this credit, construction equipment on-site shall use the ULSD specified in the Port Authority's Infrastructure Guidelines. Furthermore, idling time will be limited to 3 minutes. Documentation will be provided to the Port Authority showing compliance with requirements.

5.02.04 IC-5: Reduce Noise and Vibration During Construction

The purpose of this credit is to minimize impact of construction work by reducing noise pollution and vibration associated with construction activities and use of non-road equipment. One point can be achieved for pursing this credit.

All devices shall be equipped with acoustically attenuating shields. Furthermore, all idling time will be limited to 3 minutes. Documentation will be provided to the Port Authority showing compliance with requirements.

5.02.05 IC-6: Implement Construction Waste Management

75% diversion - all required materials

The purpose of this credit is to establish a plan to divert the maximum amount of infrastructure construction and demolition waste from disposal in landfills and/or incinerators. One point can be achieved for pursuing this credit.

To achieve this credit, the Project team shall submit documentation from the contractor showing a minimum of 75% of the demolition and construction debris, by weight, has been diverted from a landfill and/or incinerator for the following materials:

- Asphalt concrete

- Portland cement concrete
- Steel
- 75% diversion - all recommended materials

One point can be achieved for pursuing this credit. To achieve this credit, the Project team shall submit documentation from the contractor showing a minimum of 75% of the demolition and construction debris, by weight, has been diverted from a landfill and/or incinerator for the following materials:

- Metals – Steel, Aluminum, Copper, Zinc, Stainless Steel, Iron, etc.
- Concrete Paving, pipe, etc.
- Asphalt paving
- Non-chlorinated plastic pipe
- Masonry
- Glass
- Curbing materials
- Clean Dimensional Wood
- Cardboard
- Packaging
- Plastics
- Biodegradable materials

Chapter 6 - Construction Cost Estimate

6.01 Overview

The table below has been included to summarize the current cost estimates for the Contract 11 Modification of Fender System at the 65th Street Facility. The recommended design includes demolition of the existing fender system and construction of a fender and mooring system within to berth two, four-track wide car floats simultaneously in Slips No. 1 and Slip No. 2 at the 65th Street Facility. Spreadsheets containing cost estimates for the below disciplines can be found in Appendix B.

Drawing details are located in Appendix A.

Summary of Cost Estimate - Contract 11 65th Street Brooklyn – Fender & Mooring System Re-Design	
Discipline	65th Street facility Slip 1 and Slip 2 Fender System Re-Design New Fender System
Architectural	$ 81,000
Civil	$ NA
Electrical	$ 3,000
Mechanical	$ NA
Structural	$ 1,770,888
General Conditions	$ 202,889
Geotechnical	$ 174,000
Subtotal	$ 2,231,777
Overhead/Profit (10%)	$ 223,178
Engineering Contingency (10%)	$ 111,589
Bonding (1%)	$ 25,670
Extra Work (6%)	$ 161,693
TOTAL	$ 2,882,257

To arrive at the above estimated costs, several assumptions have been made and are as follows.

- No architectural or engineering fees for the contractor are included
- Overtime is excluded and escalation is not included
- The extra work line covers heavy and difficult construction (i.e. working around the existing CHFP transfer operations, utilizing heavy equipment, etc.)
- The construction of a contractor staging area is included within the general conditions number
- Construction will take place during normal business hours
- Net Cost Work allowances are not reported in the below numbers. A Net Cost Work line item represents an allowance to cover change orders and unforeseen items such as additional abatement costs, etc.
- Working in contaminated soils, machinery replacement costs, permits, removal of existing barges, construction of a contractor staging area, lead paint/asbestos abatement are all excluded at this time. Basis of Estimate

This estimate is based on the drawings and documents prepared by the HDR team for the re-design of the 65th Street facility fender and mooring system to accommodate four-track wide car floats, simultaneously berthed in slips 1 and 2. Specifically, drawings SK-101, SK-102, SK-103, SK-104, SK-105, SK-106 & SK-107 dated 01/11/2013 were utilized to develop material take-offs, quantities and other requirements of the new fender and mooring system.

Qualifications / Clarifications:

- The labor costs included in this estimate was developed at local union rates, and excludes a Project Labor Agreement (PLA). Escalation is not included.
- The following items were specifically not included in this estimate:
  - Architecture and Engineering Fees.
  - Working in contaminated soils.
  - Special seismic requirements.
  - Third party commissioning costs.
  - Temporary Shoring costs.
  - Machinery replacement.
  - Permit preparation.
  - Mechanical.
  - Construction enclosure fence.
  - Lead abatement.
  - Asbestos abatement.
  - PANYNJ - Safety/ Maintenance crew during the work

Chapter 7 - Construction Phasing, Staging and Schedule

7.01 Overview

The construction schedule for upgrades to the 65th Street Rail Yard fender and mooring system have several variables that could impact the timeline, including the permitting related to in water work for dredging and pile driving. Samples of the proposed dredge materials have not yet been obtained however this effort will be completed in the forthcoming weeks.

Ultimately, construction planning actions and sequences will be defined by the contractor's own means and methods. The anticipated construction schedule for Contracts 11 can be found in Appendix C.

7.02 Construction Phasing

This facility is an active rail site and will remain active during construction. Of paramount importance is the impression upon the contractor that dredging, fender removal and proposed structure installation should not impede normal transfer operations at more than one of the two bridges at 65th Street at any one time. The contractor will have to phase his operations as delineated in Appendix A, SK-104, and execute the work in such a way as to not impact transfer operations. This could result in night/weekend work, or scheduled rehabilitation actions to coincide with transfer bridge downtime during normal working hours.

There are two work zones identified on SK-104, depicting the proposed project site. The two zones are divided along the centerline between Slip No. 1 and No. 2. South Slip No.1 is designated as the phase one work zone, as it is currently not operating. North Slip No. 1 is designated as the Phase 2 work Zone. Work in Zone 2 shall not begin until work in Zone 1 is complete and the contractor has vacated. The 100% construction drawings will further define the rail yard operation and egress requirements so that the contractor has a clear understanding for bidding the project.

The facility's car floats should be given right-of-way on the water.

7.03 Construction Staging and Schedule

All construction operations for this work under Contract 11, occurs a minimum of one hundred feet from shore. It is expected that the contractor will work from the water and bring materials and equipment to and from the site via barges. It is not expected that the contractor will need an uplands material staging area, however, the Port Authority will be consulted for a suitable location to be designated in the 100% design drawings. The contract will need to consider appropriate equipment which may include work barges, floating cranes, a clam shell dredge bucket, pile driving hammer, etc.

The overall project schedule from award to final acceptance by NYNJR is anticipated to roughly take 6 months. Although at the contractor's discretion and while observing the operational requirements of the facility, the production work may be divided into six general categories:

7.03.01 Phase I

1) Demolition of the existing structures in Slip No. 1

2) Dredge Slip No. 1

3) Install proposed of the proposed monopile dolphins within in Slip No. 1

7.03.02 Phase II

4) Demolition of the existing structures in Slip No. 2

5) Dredge Slip No. 2

6) Install proposed of the proposed monopile dolphins within in Slip No. 2

Appendix A - Sketches

THE PORT AUTHORITY OF NY & NJ

65TH STREET RAIL YARD

CROSS HARBOR FREIGHT PROGRAM
FENDER AND MOORING SYSTEM
SLIP NO. 1 & 2

CONTRACT NO. NYNJR-644.536

50% SUBMISSION
0'/11/2013

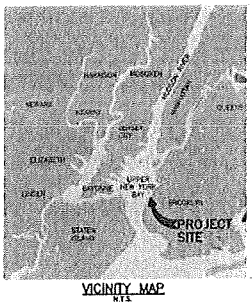
No	Date	Revision	Approved

ASSISTANT CHIEF ENGINEER/DESIGN — DATE

PROGRAM DIRECTOR, PI — DATE

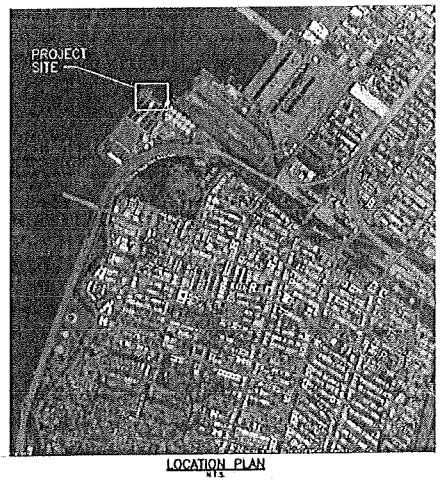
CHIEF ENGINEER — DATE

Drawing Number SK-101
PCN 111-M000



VICINITY MAP
N.T.S.

DRAWING INDEX	
DWG NO	DRAWING TITLE
SK-101	TITLE SHEET
SK-102	VICINITY MAP, LOCATION PLAN AND DRAWING INDEX
SK-103	GENERAL NOTES
SK-104	DEMOLITION PLAN
SK-105	PROPOSED SITE PLAN
SK-106	MOORING ARRANGEMENT PLAN
SK-107	MOORING SECTIONS & DETAILS



LOCATION PLAN
N.T.S.

Sheet 2 of 7

THE PORT AUTHORITY OF NY & NJ

60% SUBMISSION
01/11/2013

No	Date	Revision	Appvd

ENGINEERING DEPARTMENT

NEW YORK AND NEW JERSEY RAILROAD, LLC

Title
CROSS HARBOR FREIGHT PROGRAM
FENDER AND MOORING SYSTEM
SLIP NO. 18
AT 65TH STREET RAIL YARD

VICINITY MAP
LOCATION PLAN
AND
DRAWING INDEX

Designed by	Drawn by	Checked by

Date 01/10/13

Contract Number NYNJR-844.536

Drawing Number SK-102

PW# 1218000

GENERAL NOTES

DESIGN CRITERIA

1.0 LOADS

1.1 WIND LOADS

	PROPOSED CAR FLOAT	EXISTING #18 CAR FLOAT
OPERATION	35 MPH 3 SEC	35 MPH 3 SEC
NON-OPERATION	104 MPH 3 SEC	104 MPH 3 SEC

1.2 FACILITY OPERATORS SHALL MONITOR WIND SPEED AT THE SITE TO ENSURE OPERATING WIND SPEED ARE NOT EXCEEDED.

1.3 SEISMIC PARAMETERS
S_s = 0.518
S_1 = 0.184
SITE CLASS E

1.4 MOORING LOADS

MOORING LINE LOAD 60K

1.5 LIVE LOADS

UNIFORMLY DISTRIBUTED LIVE LOAD 60 psf
CONCENTRATED LIVE LOAD (AT ANY LOCATION) 2,000 lb.

1.6 SNOW LOAD 20 psf

1.7 BERTHING IMPACT

	PROPOSED CAR FLOAT	EXISTING #18 CAR FLOAT
APPROACH VELOCITY	0.8 FT/SEC	0.8 FT/SEC

APPLIED NORMAL TO BERTH FACE

2.0 DESIGN CARFLOATS

		PROPOSED CAR FLOAT		EXISTING #18 CAR FLOAT
DISPLACEMENT TONNAGE SHORT TONS		4,524		2,500
LENGTH	ft.	370	360	330
WIDTH	ft.	59	57	41
HEIGHT (MOULDED)	ft.	14	12	9
MAXIMUM DRAFT (LOADED)	ft.	7	7	5
MAXIMUM FREEBOARD	ft.	11	9	7
MINIMUM FREEBOARD	ft.	7	5	4
# RAILCARS		18	18	9

3.0 GEOTECHNICAL

3.1 . GEOTECHNICAL RECOMMENDATIONS UNDER DEVELOPMENT.

4.0 DESIGN LIFE

4.1 SHALL BE 50 YEARS FOR PROPOSED STRUCTURES.

MATERIAL & CONSTRUCTION

1.0 GENERAL

1.1 DETAILED REQUIREMENTS FOR MATERIALS, CONSTRUCTION AND FABRICATION ARE DESCRIBED IN THE FOLLOWING.

1.2 EXISTING STRUCTURE LOCATIONS AND EXTENTS ARE SHOWN APPROXIMATE. THE CONTRACTOR SHALL VISIT THE PROJECT SITE AND VERIFY DIMENSIONS AND LOCATIONS OF ALL EXISTING STRUCTURES, PRIOR TO BEGINNING WORK. THE ENGINEER SHALL BE NOTIFIED FOR DIRECTION IF DISCREPANCIES ARE FOUND.

1.3 IN CASE OF CONFLICT THE FOLLOWING PRECEDENCE SHALL APPLY:
(1. HAVING MOST PRECEDENCE AND 5. HAVING LEAST PRECEDENCE)
1. CALLOUTS AND NOTES ON INDIVIDUAL DRAWINGS
2. GENERAL NOTES
3. PROJECT SPECIFICATIONS
4. MANUFACTURER RECOMMENDATIONS/SPECIFICATIONS
5. OTHER STANDARDS AND SPECIFICATIONS

2.0 PROJECT DATUM AND TIDE ELEVATIONS

2.1 ALL ELEVATIONS ARE PROVIDED RELATIVE TO MEAN LOW WATER (MLW) ESTABLISHED BY NOAA FOR BATTERY STATION, NY. MLW IS EQUAL TO PORT AUTHORITY DATUM +295'.

TIDAL INFORMATION (BATTERY STATION)
MHHW +4.65'
MHW +4.53'
MLW 0.00'
MLLW -0.20'

3.0 PILES & SLEEVES

3.1 REQUIRED MINIMUM PILE TIP ELEVATIONS ARE INDICATED ON THE DRAWINGS. INSTALLATION METHOD SHALL NOT DAMAGE THE PILING. VIBRATORY PILE DRIVING, IMPACT DRIVING, SOCKET DRILLING, JETTING OR INSTALLATION BY OTHER MEANS MAY BE REQUIRED TO ACHIEVE MINIMUM SPECIFIED PILE TIP ELEVATION.

3.2 PILES & SLEEVES SHALL MEET CARBON EQUIVALENCY REQUIRED BY AWS D1.1.

3.3 A VERSASTEEL INSIDE OR OUTSIDE FLANGE CUTTING SHOE SHALL BE INSTALLED ON ALL PILE TIPS, ONLY IF INSTALLATION METHOD WILL NOT CONFLICT WITH SHOE. CONTRACTOR SHALL VERIFY THAT CUTTING SHOES WILL NOT IMPEDE INSTALLATION OF A DRILLING METHOD, IF USED.

3.4 EACH PILE INSTALLED SHALL BE SUBJECT TO THE APPROVAL OF ENGINEER. UNACCEPTABLE PILES ARE PILES THAT ARE DAMAGED, DO NOT ACHIEVE MINIMUM PLAN TIP ELEVATION, ARE INSTALLED OUT OF POSITION, OUT OF PLUMB OR ARE BELOW CUTOFF ELEVATION. UNACCEPTABLE PILES SHALL BE REPLACED AND/OR REDRIVEN TO SPECIFIED REQUIREMENTS AT NO ADDITIONAL EXPENSE TO THE OWNER.

3.5 CLEARLY MARK EACH PILE WITH ITS DESIGNATION AND OVERALL LENGTH. IN ADDITION, CLEARLY MARK EACH PILE AT INTERVALS OF 1 FOOT ALONG ITS FULL LENGTH PRIOR TO DRIVING, WITH LENGTH NUMBERS EVERY FIVE FEET. ALL MARKINGS SHALL BE VISIBLE FROM 360 DEGREES AROUND THE PILING.

3.6 LOCATION TOLERANCE, (U.N.O.):
- MAXIMUM VARIATION FROM PILE CUT-OFF ELEVATION 0 INCHES
- MAXIMUM HORIZONTAL OUT OF POSITION: 2 INCHES
- ALIGNMENT: 1% FROM VERTICAL

3.7 ACCURATELY RECORD THE FOLLOWING AS APPLICABLE:
- SIZE, LENGTH AND LOCATIONS OF PILES
- BLOW COUNTS
- FINAL TIP (BASE) AND TOP ELEVATION
- PILE DRIVING HAMMER USED
- DRILLING LENGTH ELEVATIONS
- DRILLING EQUIPMENT USED

3.8 PILING SHALL NOT BE CONCRETE FILLED.

4.0 STRUCTURAL STEEL

4.1 MATERIALS, WORKMANSHIP, FABRICATION, ERECTION AND CONNECTION DESIGN SHALL CONFORM TO "AISC MANUAL OF STEEL CONSTRUCTION", 14TH EDITION, AND AWS D1.1.

4.2 MATERIALS, (U.N.O. ON PLANS):
WIDE FLANGE AND TEE's – ASTM A992 OR ASTM A572 GR 50
CHANNELS, ANGLES, PLATES AND S SHAPES – ASTM A36
ROUND & RECTANGULAR HSS – ASTM A500 GR B
PILES & SLEEVES – ASTM A252 GR 3
PIPE – ASTM A53 GR B

4.3 ALL WELDING SHALL BE DONE BY AWS QUALIFIED WELDERS USING ELECTRODES CONFORMING TO AWS SPECIFICATION D1.1 CLASS E70XX SERIES.

5.0 MOORING & BERTHING

5.1 NAVIGATION LANTERN M704-5 AS MANUFACTURED BY CARMANAH SHALL BE ATTACHED TO SPOTTING POLES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL VERIFY THAT LIGHT MODEL AND PROGRAMMING CONFORM TO PERMIT REQUIREMENTS AND US COAST GUARD REGULATIONS PRIOR TO FABRICATION.

5.2 DONUT FENDER SHALL BE 13 FT DIA x 14 FT HIGH AS MANUFACTURED BY TRELLEBORG OR ENGINEER APPROVED EQUIV.

5.3 FENDER MANUFACTURER SHALL REVIEW DETAILS AND PROVIDE DESIGN OF COMPONENT PARTS AND SUPPORT CONNECTIONS. ALL BOLTS, CHAINS AND CONNECTORS SHALL BE GALVANIZED OR SST.

6.0 DEMOLITION

6.1 TAKE ALL NECESSARY PRECAUTIONS TO CONTAIN THE DEMOLITION WITHIN THE LIMITS DESIGNATED. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE TO THE EXISTING STRUCTURES INTENDED TO REMAIN.

6.2 ANY DAMAGE INCURRED IN THE EXECUTION OF THIS CONTRACT TO ANY PART OF THE PROPERTY OR STRUCTURE NOT SPECIFICALLY DESIGNATED FOR DEMOLITION SHALL BE REPAIRED, REPLACED, AND/OR RECONSTRUCTED BY THE CONTRACTOR, AT HIS EXPENSE, TO ITS ORIGINAL CONDITION.

6.3 REMOVE AND DISPOSE OF ALL DEMOLITION DEBRIS OFF SITE IN ACCORDANCE WITH ALL COUNTY, STATE AND FEDERAL REQUIREMENTS.

7.0 STEEL COATINGS

7.1 ALL REINFORCING STEEL, STRUCTURAL STEEL, PILING, BOLLARD RINGS, HARDWARE, U.N.O SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A767, ASTM A123, & ASTM A153.

7.2 FIELD TOUCH-UP OF HOT-DIP GALVANIZED STEEL SHALL INCLUDE SSPC SP1 SOLVENT CLEANING AND TOUCH-UP WITH ZINC RICH COMPOUND 2.5 TO 3.5 MILS DRY FILM THICKNESS USING ZRC COLD GALVANIZING COMPOUND OR SOUTHERN COATINGS GALVACON COLD GALVANIZING COMPOUND. REPAIR SHALL BE IN ACCORDANCE WITH ASTM A780.

7.3 PILES SHALL BE GALVANIZED FULL LENGTH, EXCEPT BOTTOM 40 FEET SHALL BE BARE.

7.4 DONUT FENDER STEEL SHALL BE DIV. 2 COAL TAR EPOXY COATED PER PROJECT SPECIFICATION, WHERE POSSIBLE, AND IN ACCORDANCE WITH DONUT FENDER DESIGNERS RECOMMENDATIONS.

8.0 CODES AND REFERENCE STANDARDS

8.1 MATERIALS AND TESTING HAVE BEEN SPECIFIED TO CONFORM TO THE CURRENT EDITIONS OF RELEVANT STANDARDS PUBLISHED BY THE FOLLOWING ORGANIZATIONS.

8.2 ASCE 7-05

8.3 PIANC 2002

8.4 AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL AISC 14th ED.

8.5 AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)

8.6 AMERICAN CONCRETE INSTITUTE ACI 318-11

8.7 AMERICAN WELDING SOCIETY AWS D1.1

8.8 OSHA STANDARDS

8.9 MANUFACTURER RECOMMENDATIONS/SPECIFICATIONS

8.10 WHEREVER CODES, ORDINANCES, STANDARDS, ETC. ARE REFERENCED TO IN THESE NOTES, IT SHALL BE ASSUMED TO BE THE LATEST EDITION UNLESS NOTED OTHERWISE.

9.0 QUALITY CONTROL

9.1 COMPLY WITH THE SPECIFIED STANDARDS AND MANUFACTURER RECOMMENDATIONS AS MINIMUM QUALITY FOR THE WORK EXCEPT WHERE THE DRAWINGS INDICATE HIGHER STANDARDS OR MORE PRECISE WORKMANSHIP.

9.2 CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CORRECTING ANY ALTERATIONS TO SITE CONDITIONS CAUSED BY CONSTRUCTION ACTIVITIES NOT IN CONTRACT.

9.3 CONTRACTOR SHALL PROTECT ALL EXISTING AND NEW UTILITIES, STRUCTURES AND EQUIPMENT FROM DAMAGE. CONTRACTOR SHALL INVESTIGATE AND LOCATE UNDERGROUND UTILITIES THAT MAY CONFLICT WITH WORK. PILE CUTOFF SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

9.4 CONTRACTOR SHALL FOLLOW ALL FEDERAL, STATE & LOCAL ENVIRONMENTAL REGULATIONS AND MEET THE REQUIREMENTS SET FORTH IN PERMITS APPROVING CONSTRUCTION.

10.0 SUBMITTALS

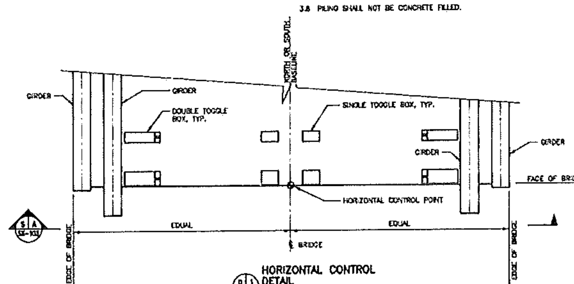
10.1 PRIOR TO FABRICATION, THE FOLLOWING SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER:
1. FABRICATION DRAWINGS
2. MATERIAL CERTIFICATIONS
3. PILE INSTALLATION PLAN – INCLUDING METHOD, EQUIPMENT, MATERIALS, SKETCHES, SEQUENCE, ETC.
4. SCHEDULE
5. PILE DRIVING AND/OR DRILLING LOGS
6. CONCRETE MIX DESIGN
7. DONUT FENDER AND BOLLARD RING DESIGN

11.0 CATHODIC PROTECTION

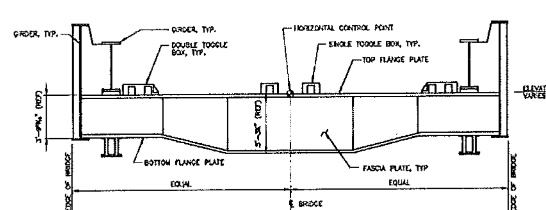
11.1 SHALL COMPLY WITH DNV-RP-B401. ALL ANODE DESIGN, INSTALLATION AND FABRICATION SHALL COMPLY WITH SAID SPECIFICATION. ANODES SHALL BE MOUNTED ON DONUT FENDER, ALUMINUM AND BE DESIGNED ACCORDING TO THE SPECIFIED DESIGN LIFE IN THESE GENERAL NOTES.

LIST OF ABBREVIATION

CP-HORIZONTAL CONTROL POINT
P-WORK POINT



D 1 SK-103 HORIZONTAL CONTROL DETAIL



S A SK-103 HORIZONTAL CONTROL SECTION

Sheet 3 of 7

THE PORT AUTHORITY OF NY & NJ

50% SUBMISSION
01/11/2013

No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

NEW YORK AND NEW JERSEY RAILROAD, LLC

Title
CROSS HARBOR FREIGHT PROGRAM
FENDER AND MOORING SYSTEM
SLIP NO. 1 & 2
AT 65TH STREET RAIL YARD

GENERAL NOTES

T.FISHER	B.SUKO	B.LEE
Designed by	Drawn by	Checked by

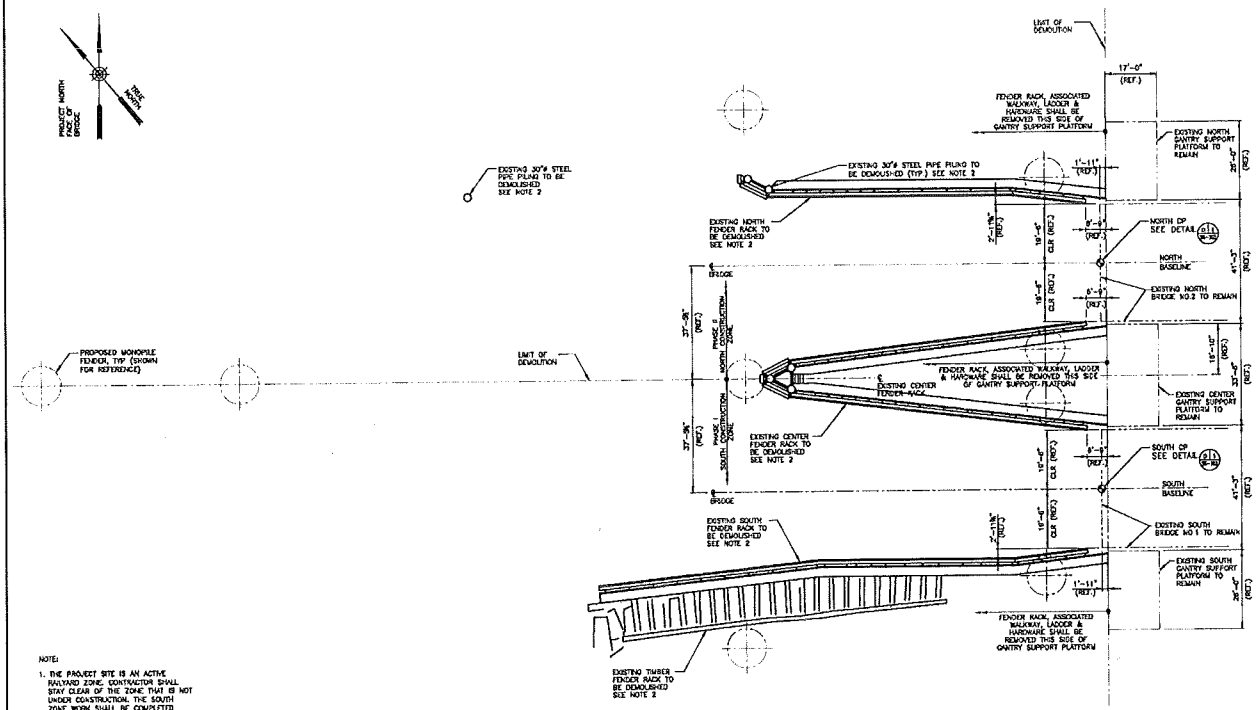
Date 01/10/13

Contract Number NYNJR-644.536

Drawing Number SK-103

PDF 12199000

THE PORT AUTHORITY
OF NY & NJ



DEMOLITION PLAN
SCALE 1" = 15'-0"

NOTE:

1. THE PROJECT SITE IS AN ACTIVE RAILYARD ZONE. CONTRACTOR SHALL STAY CLEAR OF THE ZONE THAT IS NOT UNDER CONSTRUCTION. THE SOUTH ZONE WORK SHALL BE COMPLETED BEFORE THE NORTH ZONE WORK BEGINS.
2. PILING SHALL BE REMOVED IN ENTIRETY.
3. FIELD VERIFY DIMENSIONS, QUANTITIES, LIMITS, EXTENTS OF ALL EXISTING STRUCTURES, TO REMAIN AND TO BE DEMOLISHED

50% SUBMISSION
01/11/2013

No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

NEW YORK AND NEW JERSEY RAILROAD, LLC

Title
CROSS HARBOR FREIGHT PROGRAM
FENDER AND MOORING SYSTEM
BLP NO. 181
AT 65TH STREET RAIL YARD

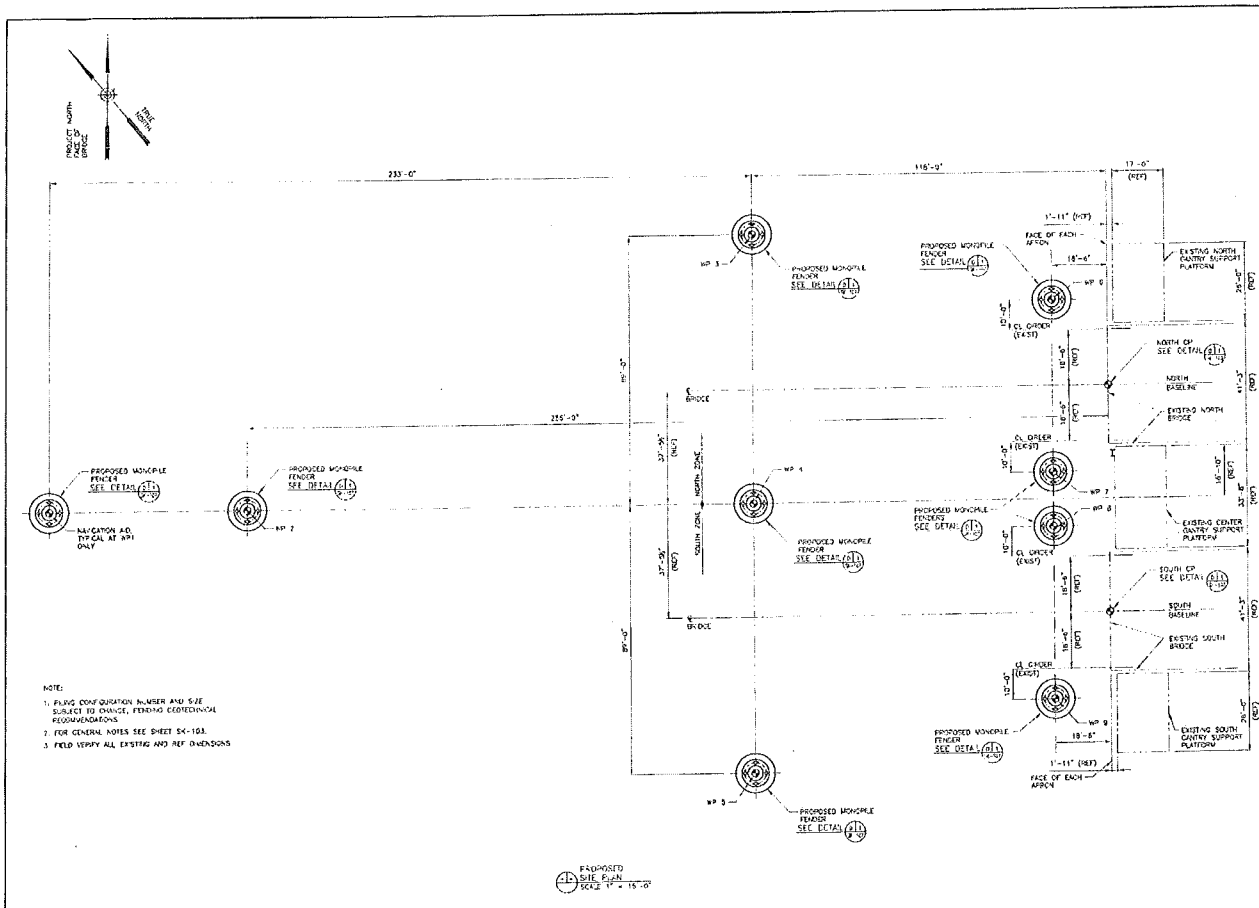
DEMOLITION PLAN

STAFF	CAVILIERI	BLEE
Designed by	Drawn by	Checked by
Date	01/10/13	

Contract Number NYNJR-644.536

Drawing Number SK-104

PDM 12186030



PROPOSED SITE PLAN
SCALE 1" = 15'-0"

NOTE:

1. FLEVG CONFIGURATION, NUMBER AND SIZE SUBJECT TO CHANGE, PENDING GEOTECHNICAL RECOMMENDATIONS
2. FOR GENERAL NOTES SEE SHEET SK-103.
3. FIELD VERIFY ALL EXISTING AND REF DIMENSIONS

Sheet 6 of 7

THE PORT AUTHORITY
OF NY & NJ

60% SUBMISSION
01/11/2013

No	Date	Revision	Approved

ENGINEERING DEPARTMENT

NEW YORK AND NEW JERSEY RAILROAD, LLC

Title
CROSS HARBOR FREIGHT PROGRAM
FENDER AND MOORING SYSTEM
SLIP NO. 1 & 2
AT 65TH STREET RAIL YARD

PROPOSED SITE PLAN

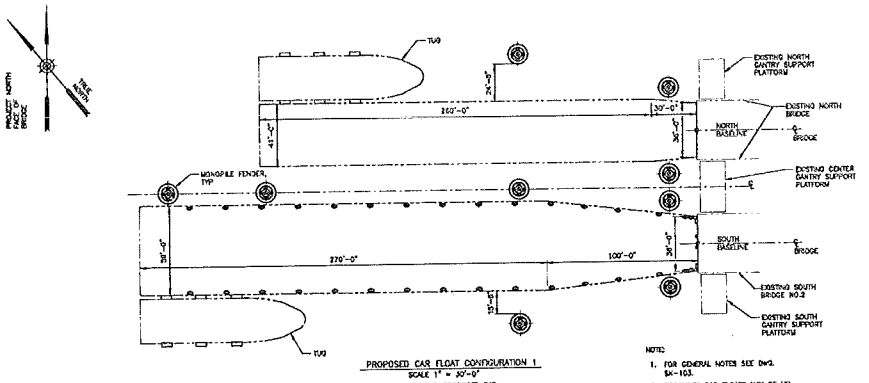
FISHER	C.WILLARD	ELITE
Designed by	Drawn by	Checked by

Date 01/10/13

Contract Number NYNJR-644.536

Drawing Number SK-105

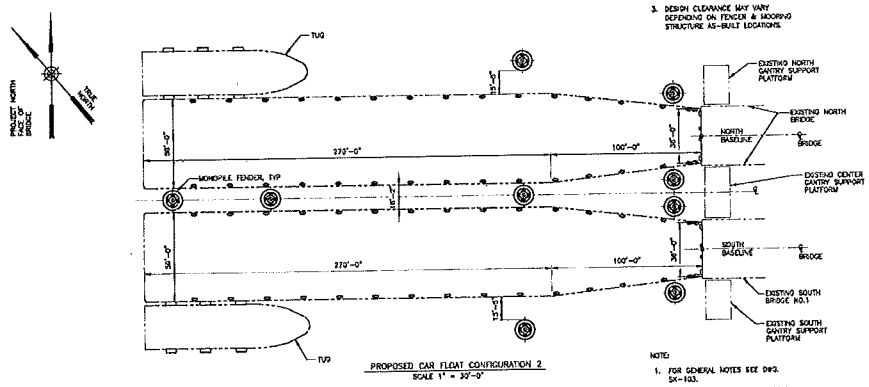
PDF 12199000



PROPOSED CAR FLOAT CONFIGURATION 1
SCALE 1" = 30'-0"

NOTE: EXISTING & PROPOSED CAR FLOAT MAY MIRROR ABOUT ℄ FACILITY, NOT SHOWN

NOTES:
1. FOR GENERAL NOTES SEE DWG. SK-103.
2. PROCURED CAR FLOATS MAY BE UP TO 10'-0" SHORTER IN LOA AND UP TO 2'-0" NARROWER IN BEAM THAN SHOWN.
3. DESIGN CLEARANCE MAY VARY DEPENDING ON FENDER & MOORING STRUCTURE AS-BUILT LOCATIONS.



PROPOSED CAR FLOAT CONFIGURATION 2
SCALE 1" = 30'-0"

NOTES:
1. FOR GENERAL NOTES SEE DWG. SK-103.
2. PROCURED CAR FLOATS MAY BE UP TO 10'-0" SHORTER IN LOA AND UP TO 2'-0" NARROWER IN BEAM THAN SHOWN.
3. DESIGN CLEARANCE MAY VARY DEPENDING ON FENDER & MOORING STRUCTURE AS-BUILT LOCATIONS.

Sheet 8 of 7

THE PORT AUTHORITY OF NY & NJ

50% SUBMISSION
01/11/2013

No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

NEW YORK AND NEW JERSEY RAILROAD, LLC

Title
CROSS HARBOR FREIGHT PROGRAM
FENDER AND MOORING SYSTEM
ELP NO. 1 & 2
AT 65TH STREET RAIL YARD

MOORING ARRANGEMENT PLAN

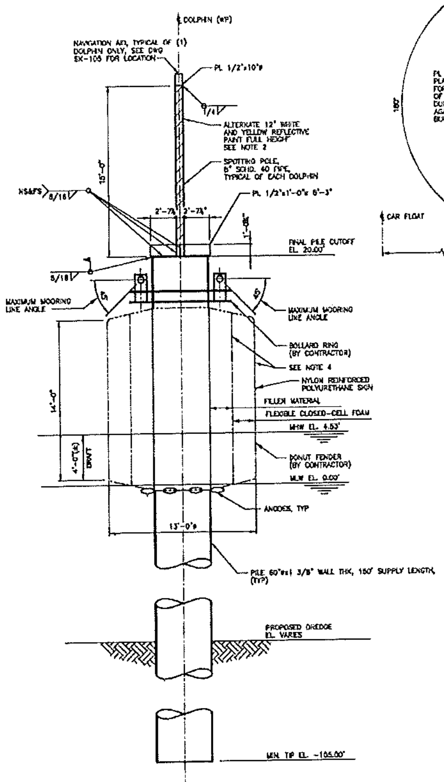
Designed by	Drawn by	Checked by

Date 01/10/13

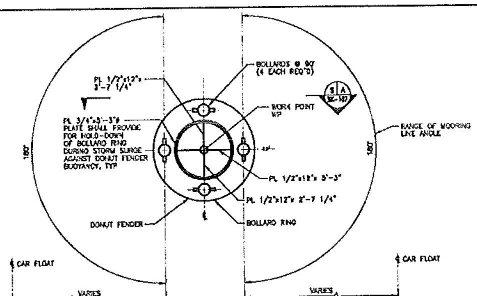
Contract Number NYNJR-644.638

Drawing Number SK-106

PDF 131 89005



SECTION
PROPOSED MONOPILE FENDER
SCALE: 1/4" = 1'-0"



DETAIL
PROPOSED MONOPILE FENDER
SCALE: 1/4" = 1'-0"

NOTES:
1. PILING CONFIGURATION NUMBER AND SIZE SUBJECT TO CHANGE, PENDING GEOTECHNICAL RECOMMENDATIONS.
2. REFLECTIVE PAINT SHALL HAVE 4 LB'S PER GALLON GLASS BEADS, MILL SPEC 10, AS SUPPLIED BY COLESAFETY OR ENGINEER APPROVED EQUAL.
3. FOR GENERAL NOTES, SEE DRAWING SK-103.
4. DONUT FENDER AND BOLLARD RING DESIGN AND MANUFACTURING BY TRELLEBORG OR ENGINEER APPROVED EQUAL. BOLLARD CAPACITY 30 TONS. BOLLARD RING SHALL ROTATE INDEPENDENT OF DONUT (TYP). MOORING LINES SHALL NOT RUB AGAINST ANY PART OF BOLLARD RING. CAR FLOAT SHALL BE MINIMUM 6" CLEAR OF BOLLARD RING WHEN DONUT FENDER IS FULLY COMPRESSED. FENDER SHALL ABSORB 7.9FT-KIP OF ENERGY PER FOOT OF FENDER HEIGHT AT 60% DEFLECTION.

Sheet 7 of 7

THE PORT AUTHORITY OF NY & NJ

50% SUBMISSION
01/11/2013

No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

NEW YORK AND NEW JERSEY RAILROAD, LLC

Title
CROSS HARBOR FREIGHT PROGRAM
FENDER AND MOORING SYSTEM
SLIP NO. 1 & 2
AT 65TH STREET RAIL YARD

MONOPILE SECTIONS AND DETAILS

R.LEE	D.SUMO	T.FISHER
Designed by	Drawn by	Checked by

Date 01/10/13

Contract Number NYNJR-644.536

Drawing Number SK-107

PID 11189000

Appendix B - Cost Estimate

ASSOCIATES
A CONSTRUCTION CONSULTING FIRM

PROJECT FENDER AND MOORING SYSTEM SLIP NO. 1 & 2

65TH STREET RAIL YARD

Construction Cost Estimate

CONTRACT NO. NYNJR-644 - 50% DESIGN - 100% DDR SUBMITTAL

January 4, 2013

VJ ASSOCIATES

BASIS OF ESTIMATE

PROJECT :	PROJECT FENDER AND MOORING SYSTEM SLIP NO. 1 & 2
LOCATION :	Jersey City, NJ
ENGINEER:	Worley Parsons
PHASE :	Contract NO. NYNJR-644 - 50% Estimate Submission - 100% DESIGN SUBMITTAL
AREA IN SF :	
DATE :	January 4, 2013

The estimate is based on the drawings and documents prepared by Worley Parsons S101, S102, S104, S106, S110 & S113 dated 01/02/2012

Qualifications / Clarifications :-

- Labor costs included at local union rates, and exclude a PLA.
- Escalation is not included

The estimate excludes the following :-

- A-E Fees.
- Working in contaminated soils
- Special seismic requirements.
- Third party commissioning costs.
- Temporary Shoring costs excluded from this scope of work
- Machinery replacement is excluded from the estimate.
- Permit preparation
- Any removal of existing barges
- Mechanical, Plumbing, Drainage
- Staging area
- Construction enclosure fence
- Lead abatement
- Asbestos abatement
- PANYNJ 'Safety/ Maintenance crew during the work
- Construction of emergency shoring platforms

THE PORT AUTHORITY OF NY & NJ

- Engineering Department

Engineer's Estimate Summary CONTRACT NO. NYNJR-644 - 50% Submission - 100% DDR SUBMITTAL

Project Title: PROJECT FENDER AND MOORING SYSTEM SLIP NO. 1 & 2 — 65TH STREET RAIL YARD

Project Mgr/ext: _____ Project ID _____ Work Hours: _____ DAYS

Lead Eng/Arch _____ Cost/Proc Code: _____ Const. Start-Finish-Duration: _____

Contract No: _____ Cost Center #: _____ No. Addenda: _____

Stage: III Interval Order #: _____ Prepared by InHouse/Consult: Consultant

Bid Date: _____ WBS Element: _____ Estimate Revision Number: _____

Item	Description	Total Dollars	Comments
1	General Requirements (10% of Direct Costs)	$ 202,889	
2	Civil		
3	Structural	$ 1,770,888	
4	Architectural	$ 81,000	
5	Mechanical		
6	Plumbing		
7	Fire Protection		
8	Electrical	$ 3,000	
9	Electronics		
10	Environmental		
11	Geotechnical	$ 174,000	
12	Traffic (permanent construction only)		
13	Sub-Total	$ 2,231,777	
14	Gen. Contractor Overhead & Profit (10%)	$ 223,178	Rounded
15	Engineering Contingency (5%)	$ 111,589	EE Use: Net Cost %
16	Engineer's Estimate Sub-Total	$ 2,566,543	$ 2,567,000 5.00%
	Classified 0.0%		$ 2,567,000
	Unclassified (Lump Sum)		
17	Net Cost Work	$ 128,350	Allowance = 5% of Rounded EE
18	Inflation	$ -	
19	Payments to Contractors (Items 16-18)	$ 2,694,893	SAP Total
20	Extra Work (6%)	$ 161,693.60	$ 2,857,044
21	Performance Bond (1% of Rounded EE)	$ 25,670	
22	Total Construction Cost	$ 2,882,257	

The Revision Number field is used to record changes prior to the bid opening including the rev date of the Pre-Bid meeting.

Item 1 -- EMSD estimator will assist EM's with the General Conditions estimate if required.

Items 2-12 -- These items include Subcontractors Overhead & Profit.

Item 14 -- General Contractor's Overhead & Profit is typically 6-12% of sum of Items 1-11, as determined by the EMSD Estimator.

Item 15 -- Contingency of Items 13 & 14 is calculated as follows: 15-25% for Stage I, 10% for Stage II, and 0% for Stages III/IV.

Item 16 -- The Engineer's Estimate is always prepared in "today's" dollars, as of the date of the estimate. See item 18 for inflation/escalation.
The rounded Engineer's Estimate is used for bid comparison purposes and for calculating Items 19-22.

Item 17 -- List Net Cost Work items: Allowance = 5% of Rounded EE

Item 18 -- Inflation, if necessary, is applied when construction is projected to begin 19 months or more in the future.
The inflation rate should be obtained from the EMSD Estimator.

Items 19-22 -- These dollar amounts are to be included on the appropriate lines of the "Project Cost Pro Forma" for the project.

Item 20 -- Extra Work -- maximum 6% for heavy construction and 0% for buildings (use rounded E.E. - line 16)

The shaded box values will be input into SAP by the EMSD Estimators.

NOTE: OCIP Insurance (6% of items 19-20) is covered in the "Project Cost Pro Forma".

Additional Notes: _____

SAP Requisition #: _____

Required Stage III only

EMSD Estimator / Date	Lead Engr/Architect / Date	Program Manager / Date
Required Stages I - IV	Required Stages I - IV	Required Stages I - IV

B.01 PROJECT FENDER AND MOORING SYSTEM SLIP NO. 1 & 2.xlsx

THE PORT AUTHORITY OF NY & NJ
Engineering Department
CONTRACT NO. NYNJR-644 - 50% DESIGN ESTIMATE - 100% DDR SUBMITTAL
PROJECT FENDER AND MOORING SYSTEM SLIP NO. 1 & 2

Contract No.: 0 — Discipline: — Sheet:
Charge Code: _____ — Prepared by: VJAssociates — Date:
Project Mgr.: _____ — Checked by: _____ — Date: 04/01/2013
Project Title: PROJECT FENDER AND MOORING SYSTEM SLIP NO. 1 & 2 — Consultant Name: HDR — Consultant Contact:

Item #	Description	Quantity	Unit	Unit Price $ Material	Unit Price $ Labor	Total $ Material	Total $ Labor	Total $	Assumptions / Basis
3	STRUCTURAL								
	See S-104								
	Demolition								
	Remove existing south fender rack including all piling - 167'x 12' high	2,004	SF	-	15.00	-	30,060	30,060	
	Remove existing center fender rack including all piling - 222'x 12' high	2,664	SF	-	15.00	-	39,960	39,960	
	Remove existing north fender rack including all piling - 124'x 12' high	1,488	SF	-	15.00	-	22,320	22,320	
	Remove existing timber fender rack at south	1,700	SF	-	15.00	-	25,500	25,500	
	Remove existing walkways, ladders and all associated hardware behind above south, center and north fender racks.	593	LF	-	50.00	-	25,150	25,150	
	Remove existing 30" diameter steel pipe pilings in its entirety	2	EA	-	3,000.00	-	6,000	6,000	
	Remove existing hardware, tires, connector or associated debris at existing gantry support platforms to remain as required.	1	LS	-	5,000.00	-	5,000	5,000	
	New Work:								
	Proposed monopile fenders	1	LS	15,000.00	50,000.00	15,000	50,000	65,000	
	Mobilization/Demobilization	1	LS	10,000.00	25,000.00	10,000	25,000	35,000	
	Pile testing								
	PROPOSED MONOPILES								
	Provide new steel pipe piles - 60" dia x 1 3/8" thick wall at proposed monopiles - See S-113 - 150 LF x 9 locations - include coal tar epoxy coating system	1,350	LF	265.00	240.00	357,750	324,000	681,750	
	14'-0" High donut fender at above mono piles including ballast, 30 ton bollard capacity. Manufactured by Fruhbeuf or approved equal	9	EA	35,000.00	25,000.00	315,000	225,000	540,000	
	Assume no work at existing north, center and south gantry support platforms								No work
	Assume no work at existing north and south bridges								No work
	Subtotal					697,750	777,990	1,475,740	
	ADD - Subcontractor's OH&P	20%						295,148	
	TOTAL							1,770,888	TOTAL STRUCTURAL
4	ARCHITECTURAL								

Contract No.: 0
Charge Code:
Project Mgr.:

THE PORT AUTHORITY OF NY & NJ
Engineering Department
CONTRACT NO. NYNJR-644 - 50% DESIGN ESTIMATE - 100% DDR SUBMITTAL

Discipline:
Prepared by: VJAssociates
Checked by:

Sheet:
Date:
Date: 04/01/2013

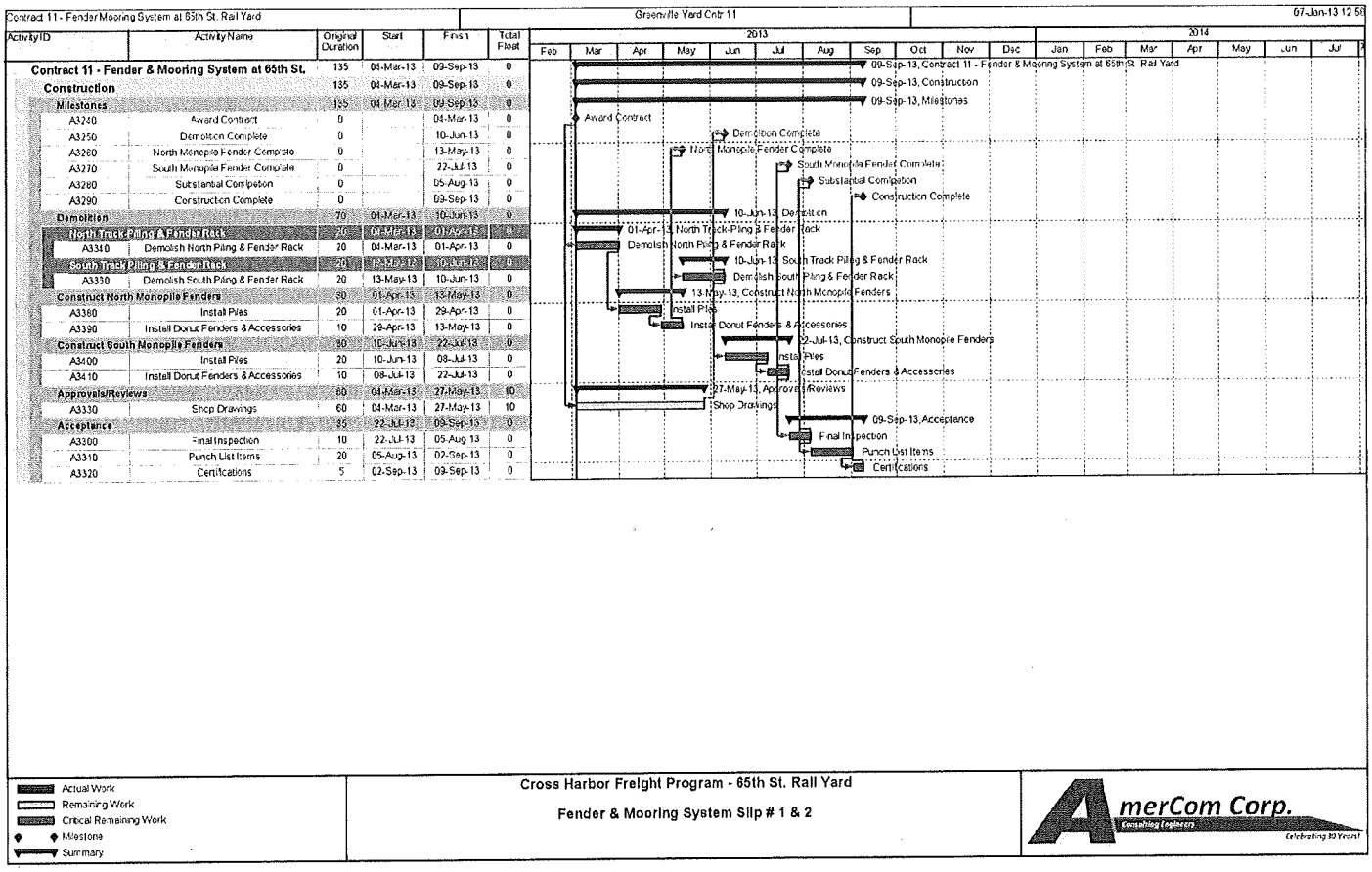
Project Title: PROJECT FENDER AND MOORING SYSTEM SLII NO. 1 & 2

Consultant Name: HDR

Consultant Contact:

Item #	Description	Quantity	Unit	Unit Price $		Total $		Total $	Assumption / Basis
				Material	Labor	Material	Labor		
	15'-0" High 8" diameter steel pipe bollard with steel plate bollard ring cap and white and yellow reflective paint at monopiles. See S-113	9	EA	5,000.00	2,500.00	45,000	22,500	67,500	
	Subtotal					45,000	22,500	67,500	
	ADD : Subcontractor's OH&P	20%						13,500	
	TOTAL							81,000	TOTAL ARCHITECTURAL
8	ELECTRICAL								
	Navigation aid, typical at one dolphin only	1	EA	2,000.00	500.00	2,000	500	2,500	
	Subtotal					2,000	500	2,500	
	ADD : Subcontractor's OH&P	20%						500	
	TOTAL							3,000	TOTAL ELECTRICAL
11	GEOTECHNICAL								
	Mobilization/ Demobilization	1	LS	-	45,000.00	-	45,000	45,000	
	Dredging if required	1	LS	-	100,000.00	-	100,000	100,000	
	Subtotal					-	145,000	145,000	
	ADD : Subcontractor's OH&P	20%						29,000	
	TOTAL							174,000	TOTAL GEOTECHNICAL

Appendix C - Construction Schedule



Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

Cross Harbor Freight Program - 65th St. Rail Yard

Fender & Mooring System Slip # 1 & 2

AmerCom Corp.
Consulting Engineers
Celebrating 10 Years!

Appendix D - Support Documents

APPENDIX D – SUPPORT DOCUMENTS

D.01 LIST OF SPECIFICATIONS

SPECIFICATION 1	02363 STEEL PIPE PILES A 1-8-17
SPECIFICATION 2	02392 ZINC-RICH EPOXY-COAL TAR EPOXY COATING SYSTEM FOR STEEL PILING A 04-01-11
SPECIFICATION 3	03301 PORTLAND CEMENT CONCRETE LONG FORM A 05-12-09
SPECIFICATION 4	05120 STRUCTURAL STEEL FRAMING
SPECIFICATION 5	05506 MISCELLANEOUS STEEL A 5-31-06
SPECIFICATION 6	09910 PAINTING A 02-24-10

FENDER SYSTEM

STRUCTURAL CALCULATIONS

Prepared For:

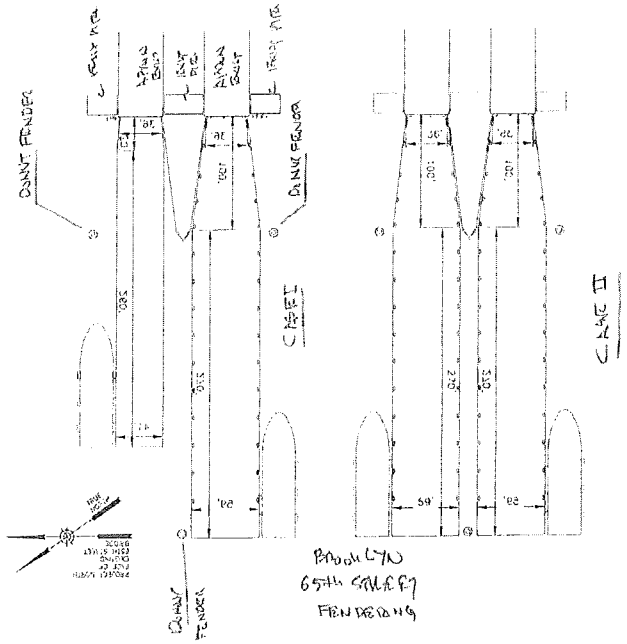
HDR

WorleyParsons Project No. 308101-03888

Jan-13

	TITLE: Structural Calcs	BY: RRL DATE: 12/7/12	PROJECT No.: 308101-03888
	PROJECT: CHFP 65th Street Rail Yrd Bridges 1 & 2	CUSTOMER: PANYNJ	PAGE: Cover

GIVEN: DONUT FENDER LAYOUTS

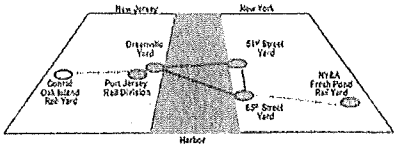


REFERENCE : DETAILS OF DONUT FENDERS.

8/14

NYNJ RAIL

CARFLOAT FACT SHEET



(NYNJR SYSTEM DIAGRAM)

New York New Jersey Rail, LLC, (reporting mark NYNJ) is a unique short line marine railroad, owned by the Port Authority of New York and New Jersey (PANYNJ). NYNJR Operation provides a definitive short cut for rail transportation across the metro NY/NJ Harbor.

HARBOR CROSSING TIME:	40 Minutes (one-way voyage across harbor)
DAYS OF SERVICE:	Monday to Friday (0700-1500)
UNLOADING/LOAD TIME:	20 Minutes per load or unload
CARFLOAT TRIPS PER DAY:	Current 1-2 Carfloats when traffic available; 3-4 per day possible (8 hour day) of increased traffic
CURRENT TRAFFIC LIMITS:	The only operating Carfloat #16 supports current traffic of 4-5 Carfloat trips per week; could support triple traffic level increase.
NY&A INTERCHANGE (BAYRIDGE):	Monday - Friday
CONRAIL INTERCHANGE (GREENVILLE):	Monday - Friday

3/14

Fisher, Tim (Bellevue)

From:	Esfandiari, Afshin (Vancouver)
Sent:	May-29-12 11:54 AM
To:	Kukucka, James
Cc:	Fisher, Tim (Bellevue)
Subject:	Port Jersey Cross Habor Freight Terminal - Car Float Buoyancy Information
Attachments:	Appendix A - Drawings.pdf

Jim,

The buoyancy information for four track car float alternatives is summarized in the table below.

Car Float Capacity	Self-weight (lbs)	Loaded Displacement (lbs)	Car Float Depth (ft)	Car Float Empty draft (ft)	Car Float Fully Loaded Draft (ft)
18 Rail Car Float	3,900,000	9,000,000	12 → 14'	3.25	7.3 → 7.8'
22 Rail Car Float	5,600,000	12,000,000	14.5	3.9	8.3
26 Rail Car Float	7,400,000	15,000,000	16.5	4.5	9.0

I have also attached the latest revison of the coceptual drawings. Please let me know if any other information is needed.

Regards,

Afshin Esfandiari, Ph.D., P.Eng.
Senior Structural Engineer
BC Business Unit
Infrastructure & Environment Operations, WorleyParsons Canada
Tel: +1 604 298 1616 Direct: +1 778 945 5420 Fax: +1 604 298 1026
Suite 600-4321 Still Creek Drive, Burnaby, BC, V5C 6S7, Canada
www.worleyparsons.com afshin.esfandiari@worleyparsons.com

Lee, Rick (Portland)

From: Johnson, Jerry (Vancouver)
Sent: May-02-12 12:18 PM
To: Lee, Rick (Portland)
Cc: Esfandiari, Afshin (Vancouver); Kukucka, James
Subject: RE: New barge Characteristics (48039)
Attachments: 60 ft Cars.pdf

Rick,

The drawing for the Alternative 1 car float is attached. For your impact calculations, add 18 cars at 286,000 lbs each to the lightship displacement of 3.9 million lbs. In other words, the loaded vessel weight is 4,524 short tons. Thanks

Jerry

Jerry R. Johnson, P.Eng., P.E.
Technical Director, Naval Architecture
BC Business Unit
Infrastructure & Environment Operations, WorleyParsons Canada
Tel: +1 778 945 5425 | Mob: +1 604 702 0321 | Fax: +1 604 985 2561
Suite 600 | 4321 Still Creek Drive | Burnaby, BC V5C 6S7 | Canada
www.worleyparsons.com jerry.johnson@worleyparsons.com

From: Kukucka, James
Sent: May-02-12 11:52 AM
To: Lee, Rick (Portland)
Cc: Johnson, Jerry (Vancouver); Esfandiari, Afshin (Vancouver)
Subject: RE: New barge Characteristics (48039)

Rick,

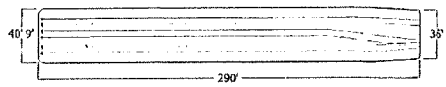
The PA has still not made their decision, although I think they are going to go with the 18 x 60 ft. rail car float. I will advise when this is confirmed. Afshin, can you send Rick the drawing of that car float?

Jim

James Kukucka
Manager of Transportation, Ports, Terminals & Rail | WorleyParsons Group
Tel: (810) 834 - 6609 | Mob: (810) 869 - 9414

From: Lee, Rick (Portland)
Sent: Wednesday, May 02, 2012 2:49 PM
To: Esfandiari, Afshin (Vancouver)
Cc: Kukucka, James; Johnson, Jerry (Vancouver)
Subject: New barge Characteristics (48039)

CARFLOAT #16



LENGTH 290' X 40' (9' sidewall)
743' OF TRACK SPACE.

EMPTY				LOADED				
Starboard Track	Center Track	Port Track	Total	Starboard Track	Center Track	Port Track	Total	Tonnage capacity
273'	197'	273'	743'	273'	197'	273'	743'	900
4-60' cars	3-60'	4-60'	11 cars	3-60' cars	2-60'	3- 60'	8 cars	
3-90' cars	2-90'	3-90'	8 cars	2-90' cars	2-90'	2-90'	6 cars	

CARFLOAT #29

LENGTH 360' X 41' (9' sidewall)
957' OF TRACK SPACE.

EMPTY				LOADED				
Starboard Track	Center Track	Port Track	Total	Starboard Track	Center Track	Port Track	Total	Tonnage capacity
345'	267'	345'	957'	345'	267'	345'	957'	1100
5-60' cars	4-60'	5-60'	14 cars	3-60' cars	4-60'	3-60'	10 cars	
3-90' cars	2-90'	3-90'	8 cars	3-90' cars	2-90'	3-90'	8 cars	

SN: *Carfloat #29 is moored at NYNJR Greenville Yard Harbor and not in service.*

www.nynjr.com

Project		By	Date	Page 6 of 14
Subject		Ckd	Date	Job No

BERTHING COEFFICIENTS

$C_E = 1.0$
$C_B = 0.9$
$C_M = 1.5$ → $C = 0.8$
$C_c = 1.0$
$C_s = 1.0$

DESIGN VESSELS

controls ⇒ 210' x 34' x 14'

$m = \frac{\Delta}{g} = \frac{4529\ LT \times 2240\ lb/LT}{32.2\ ft/s^2} = 281^k$

KINETIC ENERGY $E = \frac{1}{2} m V^2$

$E_B = \frac{1}{2} \times 281^k \times 0.8 \times \frac{0.8^2}{1} \times 0.8 = 72^{ft\text{-}k}$

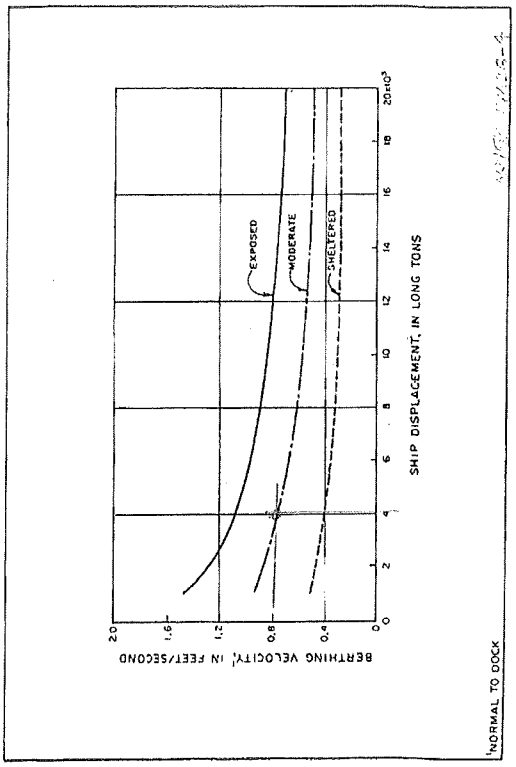
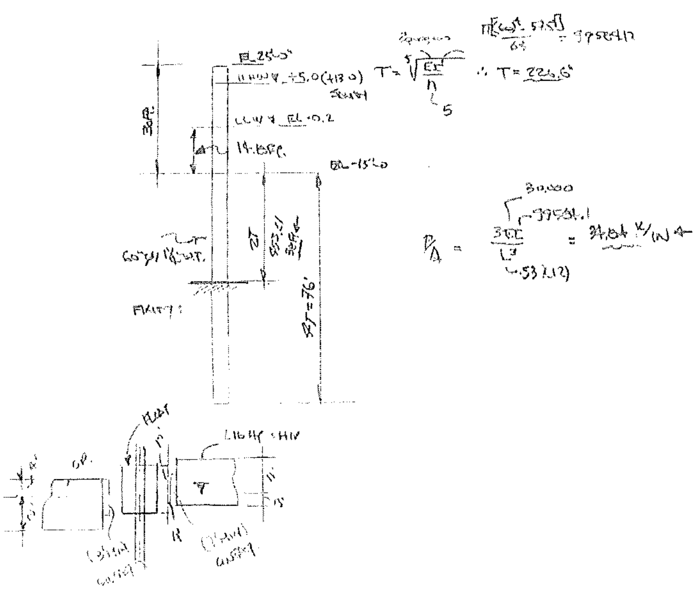


FIGURE 41
Berthing Velocity, V_N, Versus Ship Displacement and Relative Environmental Condition

WorleyParsons

Project	By	Date	Page
CHPP Conway #11	RML	11/4/2012	8 of 14
Subject: Point of Fixity	Chk	Date	Job No. 3-51...

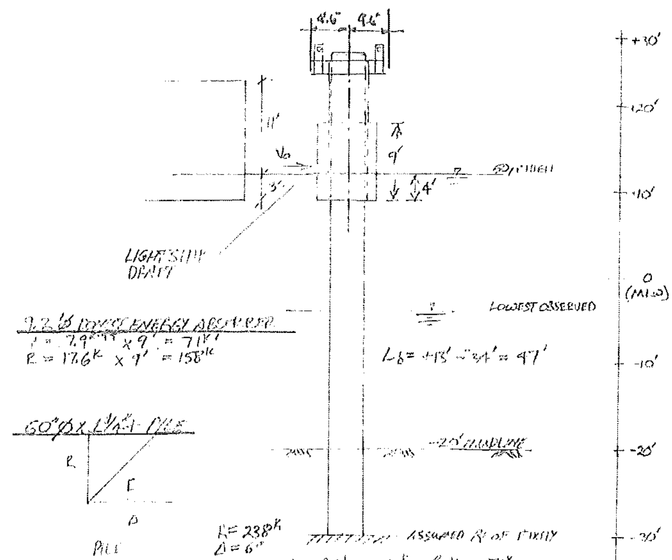
DETERMINE POINT OF FIXITY 60"Ø X 1¼" W.T.



WorleyParsons

Project	By	Date	Page
CHPP Conway #11	TZ		9 of 14
Subject: MONO-PILE FENDER	Chk RML	Date	Job No.

PILE REVIEW



9.2 ft LOWEST ENERGY ABSORBED

$E = 7.9^{k/ft} \times 9' = 71^{k'}$

$R = 17.6^k \times 9' = 158^k$

$R = 238^k$, $\Delta = 6"$

$E_p = \frac{P\Delta}{2} = 282^k \times \frac{6"}{12} \times \frac{1}{2} = 71^k$

$\therefore$ Energy Capacity $= 71^k + 71^k = 142^k >$ Berthing Energy $= 72^k$ OK

ΣF_B ΣF_P $\quad$ P_{max} (REDUCED PMAX ϕM_n)

$72^k - 71^k = 1^k \quad \Delta/F_p = 1/71 = 0.014 \times 282^k = 4^k$

$P = 1.6 \times (158^k + 4^k) = 254^k < P_{max} = 282^k \quad \therefore$ PILE OK IN BENDING

10/14

E	29000	ksi
Fy	42	ksi
π	3.141592654	
ϕ	0.9	

D	t nominal	t actual	D/t actual					Axial	Flexure
12.75	0.250	0.219	58	76	48	214	311	Non-slender	Non-compact
16	0.313	0.282	57	76	48	214	311	Non-slender	Non-compact
18	0.375	0.344	52	76	48	214	311	Non-slender	Non compact
24	0.500	0.459	53	76	48	214	311	Non slender	Non compact
30	0.625	0.594	51	76	48	214	311	Non-slender	Non-compact
36	0.750	0.719	50	76	48	214	311	Non-slender	Non-compact
48	1.000	0.969	50	76	48	214	311	Non-slender	Non-compact
54	1.125	1.094	49	76	48	214	311	Non-slender	Non compact
60	1.250	(1.219)	(49)	76	48	214	311	Non slender	Non compact

Z	Fy	ϕMn
34	42	108
70	42	219
107	42	338
260	42	818
514	42	1,618
895	42	2,819
2,143	42	6,751
3,062	42	9,645
4,212	42	13,267 ← compact

L	Δ
31	12.2
33	11.0
35	11.1
37	9.3
39	8.2
41	7.6
43	6.3
45	6.1
47	6.0 ←

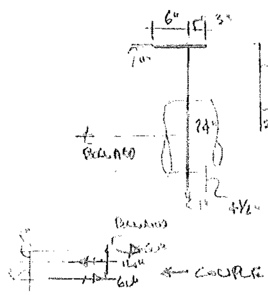
Pmax
3
7
10
22
41
69
157
214
282 ←

I	S	A	Weight	r
169	27	9	29	4.4
430	54	14	47	5.6
743	83	19	65	6.2
2,399	200	35	118	8.3
5,931	395	55	187	10.4
12,401	689	80	271	12.5
39,593	1,650	143	487	16.6
63,633	2,357	182	619	18.7
97,247	(3,242)	225	766	20.8

$0.45 \times \frac{E}{F_y} = 310.71$

For Non compact $\phi M_n = \left(\frac{0.021 E}{D/t_{actual}} + F_y\right) \times S \times \frac{1}{12} \times \phi = 13,234^{k'}$ ≅ for compact 0%

APPROX. RING SIZE:

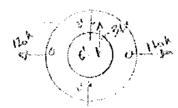


A	D	AD	AD²	I
24	12	288	3456	1152
6	24	144	3456	–
30		432	6912	1152

$\bar{D} = \frac{\Sigma AD}{\Sigma A} = 14.4$

6912
6220.8
1843.20

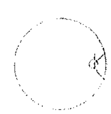
$S_{MIN} = \frac{1843.2}{14.4} = 128.00$



M = (6)(340) = 2040"kips

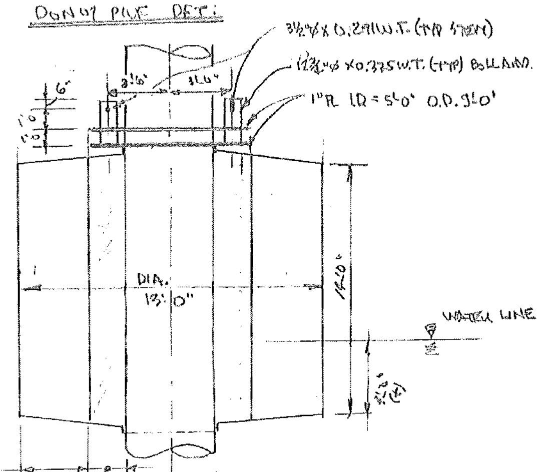
$S_{REQ'D} = \frac{2040}{0.9(36)} = 63.0\ in^3$

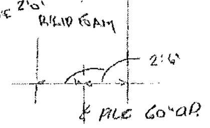
CHK WELD = π(12.75)(5/16)(0.707)(0.3)(70)(1) = 372 kips > 120 O.K.



$V_{CAP} = (2)(144)(.45)(1) = 129.6^{kips}$ O.K

DONUT PILE DET:





60%(2) = 14.4 IN.

14.4 K/FT (8) = 115.2 K / 14.4" = 8.0 K/IN.

1/K TOTAL = 1/8 + 1/31.69 = 1/6.51 K/IN.

6.51 K/IN.

MV² = KX²

201 (1.8)² (12) = 6.51 (X²) ∴ X = 18.22 ∴ P = 118.6 KIPS

V = 0.6 FT/SEC 584.0 ← fb = 118.6 (53) (12)(20) / 59584.1 = 22.71 KSI ≤ (42)(0.6) = 25.2 KSI

WT:

PL (5)(π)(17)(1)(40.8) = 10895#

PLATES: π(4.5² - 2.5²)(1)(40.8)(2) = 3587#

BOLLARDS: 49.61 (2.5)(4) = 496#

BOLLARDS (10.66)(3)(4) = 128#

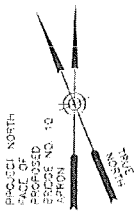
15,106#

× (1.1)

16 616.7# ≈ 17,000#

BUOYANCY: π(6.5² - 2.5²)(62.4) = 7057#/FT.

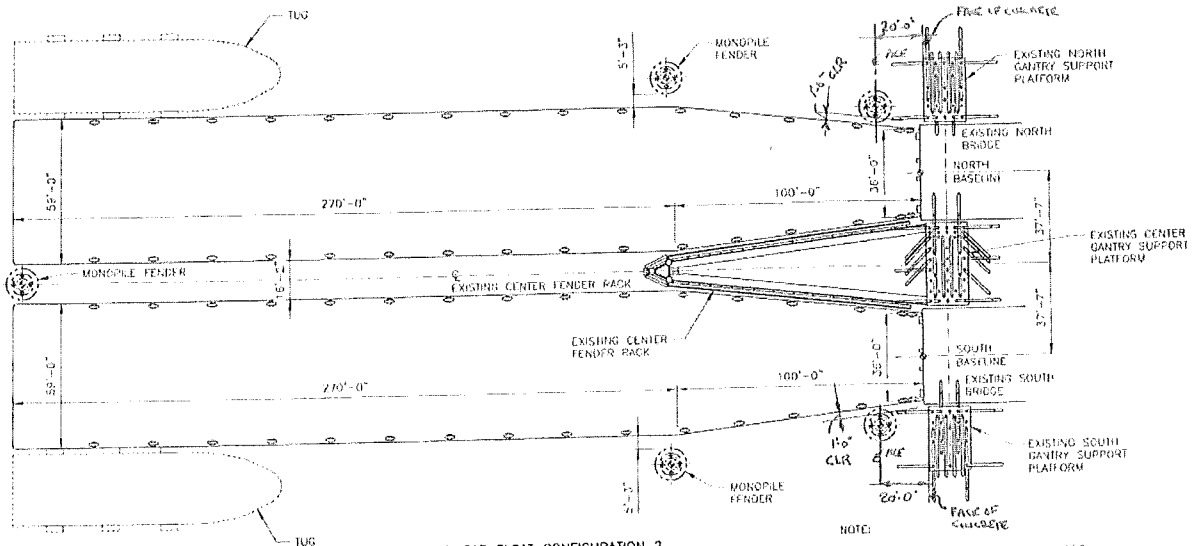
DRAG ≈ 3.0 FT:



FLOAT MAY MIGRATE ABOUT 'C' FACILITY, NOT SHOWN

TO 2'-0" NARROWER IN BEAM THAN SHOWN.

3. DESIGN CLEARANCE MAY VARY DEPENDING ON FENDER & MOORING STRUCTURE AS-BUILT LOCATIONS



PROPOSED CAR FLOAT CONFIGURATION 2

SCALE 1" = 30'-0"

NOTE:

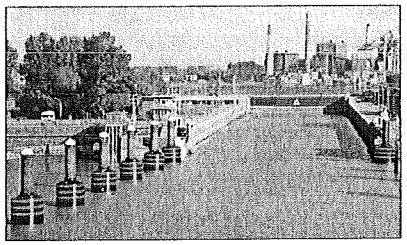
1. FOR GENERAL NOTES SEE DWG. S103.
2. PROCURED CAR FLOATS MAY BE UP TO 10'-0" SHORTER IN LOA AND UP TO 2'-0" NARROWER IN BEAM THAN SHOWN.
3. DESIGN CLEARANCE MAY VARY DEPENDING ON FENDER & MOORING STRUCTURE AS-BUILT LOCATIONS.

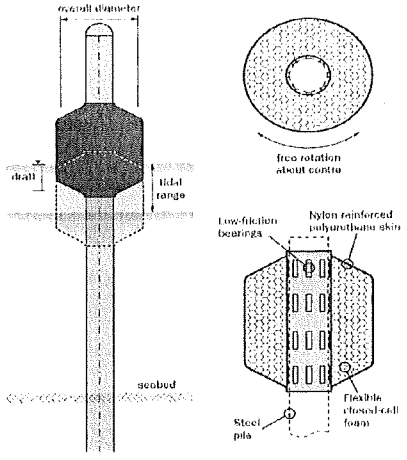
DONUT FENDERS

Donut Fenders are an effective solution for simple berthing dolphins, guiding and turning structures. The buoyant Donut floats up and down a single tubular pile and freely rotates to help align or redirect ships.

The internal casing has long lasting, low-friction bearings which need minimal maintenance. The foam is unsinkable and cannot burst or deflate. The Donut skin is durable polyurethane reinforced with continuous nylon filaments.

Donut Fenders are custom designed for every application. They can have supplementary buoyancy to present a raised contact face. The body can be additionally protected with SeaTimber rubbing strips to cope with ferry berthings. Bright colours are often used to improve visibility and safety.





Features

- Freely rotates around a pile
- Roses and tails with water level
- Fast to install
- Requires minimal maintenance
- High performance
- Low hull pressures
- Will not mark ship hulls

Options

- Additional buoyancy tanks to raise fender height
- Tank to adjust and trim draft
- Various netting options for heavy duty applications

Applications

- Corner protection
- Turning structures
- Lead in jetties
- Simple breasting dolphins
- Bridge protection
- Ro/Ro berths

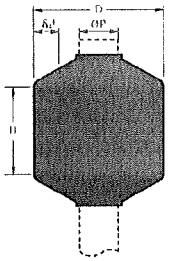
TRELLEBORG

Standard manufacturing and performance tolerances apply (see pages 12-35 to 12-39)
Publication 6-44, © Trelleborg AB, 2011

DONUT FENDERS

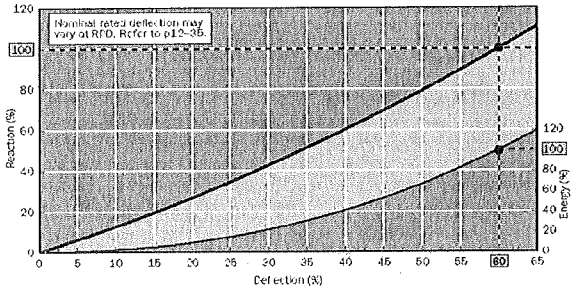
Dimensions and performance

Donut size (D)		Minimum pile (d)		Energy†	Reaction†	Energy†	Reaction†
mm	ft	mm	ft	kNm	kN	ft kip	kip
1270	4.2	610	2.0	7.2	116	1.6	7.9
1450	4.8	710	2.3	9.2	121	2.1	9.0
1520	5.0	762	2.5	10.5	140	2.4	9.6
1780	5.8	914	3.0	14.1	162	3.2	11.1
1910	6.3	965	3.3	16.4	175	3.7	12.0
2030	6.7	1067	3.5	18.6	186	4.2	12.8
2210	7.3	1183	3.9	22.3	204	5.0	14.0
2290	7.5	1219	4.0	23.6	210	5.3	14.4
2400	8.2	1345	4.4	28.0	220	6.3	15.7
2540	8.3	1372	4.5	29.3	234	6.6	16.0
2790	9.2	1524	5.0	36.9	256	8.3	17.6
2970	9.8	1636	5.4	40.1	273	9.0	18.7
3050	10.0	1676	5.5	42.1	280	9.5	19.2
3300	10.8	1820	6.0	49.6	304	11.1	20.8
3450	11.3	1963	6.3	54.6	319	12.3	21.9
3620	11.6	1981	6.5	57.2	327	12.9	22.4
3810	12.5	2134	7.0	65.9	350	14.8	24.0
3960	13.0	2241	7.4	72.1	366	16.2	25.1
4050	13.3	2286	7.5	75.1	374	16.9	25.6
4220	13.6	2388	7.8	81.3	389	18.3	26.7



Increasing Donut height (H) will increase reaction and energy proportionately.

Performances are based on STD grade foam. Other grades also available.
Non standard sizes available on request. Contact Trelleborg Marine Systems for more details.
† values for H = 1000mm.
‡ values for H = 1 foot.
# all performances at δ_d = 60% of Donut resilient foam wall thickness



Standard manufacturing and performance tolerances apply (see pages 12-35 to 12-39)
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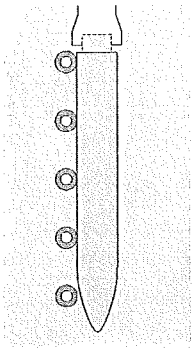
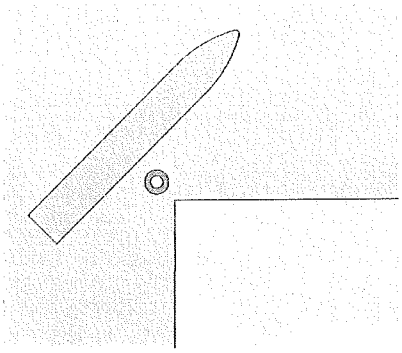
TRELLEBORG

Applications

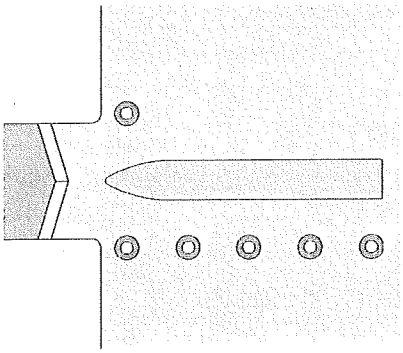
Breasting dolphins

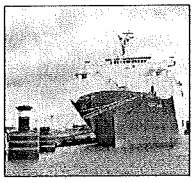


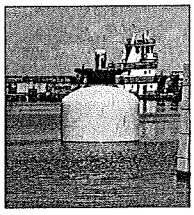
Corner protection



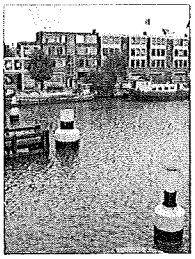
Guiding structures

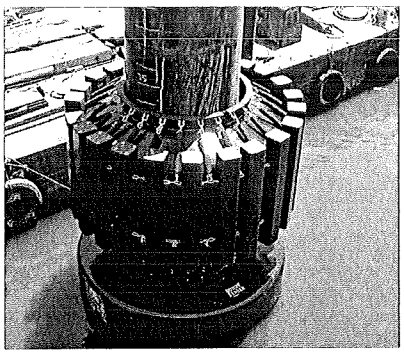


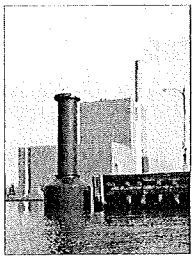


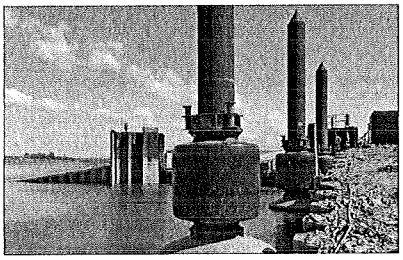


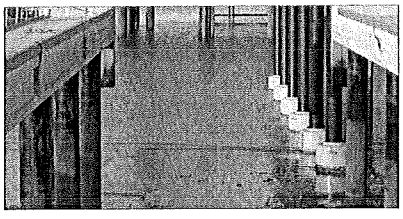
Proven in practice











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MODEL

M704-5

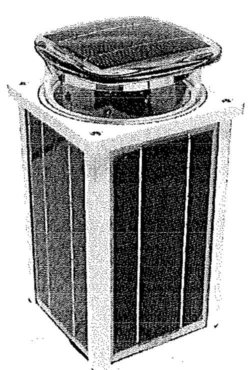
SOLAR LED MARINE LANTERN

THE M704-5 OFFERS EXCEPTIONAL VALUE IN A COMPACT, DURABLE, USER-FRIENDLY DESIGN.

- 4 NM RANGE FOR MOST LOCATIONS[1,2]
- UP TO 155 CD IALA PEAK
- PROVEN TECHNOLOGY PLATFORM
- GPS SYNCHRONIZED FLASH OPTION
- USCG PATON 33CFR66 & 33CFR67 CLASS B & C

Applications

- Fixed or floating visual aids to navigation
- Port and marina entrances
- Channel and canal marking
- Offshore oil & gas infrastructure
- Offshore wind/wave power



Easy Installation

Just mount the M704-5 and it emits light dusk-to-dawn while maintaining its battery. High-quality construction increases vandal and theft resistance.

Low Maintenance

The M704-5 integrates solar panels, battery, electronics, and LED light source into a compact, stand-alone, maintenance-free unit. The replaceable battery extends service life well beyond 5 years.

Reliable

The Energy Management System (EMS) monitors all operations to provide consistent output in the harshest environments. Testing to demanding industry standards and MIL specifications ensures high performance for many years.

Trusted

With thousands of installations worldwide, Carmanah/Sabik solar LED lights operate year-round and are trusted by:

- Australian Maritime Systems
- Brazilian Naval Commission
- Canadian Coast Guard
- CETMEF, France
- Port of Kandla, India
- Maritime and Port Authority of Singapore
- SERBA, Uruguay
- Petrobras, Brazil
- PDVSA, Venezuela
- NOAA – National Data Buoy Centre
- Panama Canal
- Suez Canal, Egypt
- Trinity House Light House Service, UK
- United States Coast Guard
- Vancouver Port Authority

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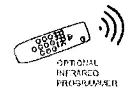
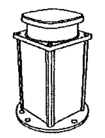
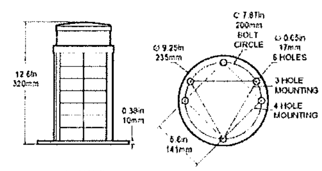




SPECIFICATIONS

Optics	155 cd peak intensity (as per IALA rating), see table
	High Flux Surface Mount LEDs
	IALA compliant chromaticities: Red, Green, White, or Yellow
	256+ flash patterns (including steady-on)
	Vertical Divergence 10° (FWHM)
Energy Collection	High-efficiency cells
Energy Storage	Pure-lead VRLA AGM battery with integrated wide operating range -58 to 176 °F (-50 to 80 °C)
	Battery status (feedback from LEDs)
	Designed for 5 year battery life. Replaceable and recyclable
Energy Management System (EMS)	Intelligent, microprocessor EMS
	On-board diagnostics and data logger
Automatic Light Control (ALC)	When enabled, ALC adjusts output intensity in response to unusually low amounts of sunlight to ensure continued operation
Programming	Programmable with optional infrared programmer
GPS Synchronization	Optional GPS enables two or more lanterns to flash in unison
Construction	Premium, UV-resistant polycarbonate lens
	Marine-grade, powder-coated aluminum chassis
	Waterproof, sealed battery compartment
	Domed top panel
	Base plate matches LED colour
Temperature	-22 to 122 °F (-30 to 50 °C) operating
	-40 to 176 °F (-40 to 80 °C) storage
Weight	26 lb (11.75 kg)
Mounting	3 or 4 bolt, 7.87" (200 mm) mounting pattern
Wind Loading	160 knots (72 m/s)
Ice Loading	0.03 psi (22 kg/m²)
Shock & Vibration	MIL-STD-202G & MIL-STD-810G (for Explosive Atmosphere)
Ingress	IP 68 immersion
	MIL-STD-202G immersion & damp heat cycling
	MIL-STD-810G rain & salt fog
Compliance	USCG PATON 33CFR66 & 33CFR67 Class B & C
	RoHS, WEEE

DIMENSIONS



PEAK INTENSITY

COLOUR	INTENSITY (RANGE*) LOW	MEDIUM	HIGH
Red	34 cd (3.3 NM)	76 cd (4.3 NM)	76.0 cd (4.3 NM)
Green	34 cd (3.3 NM)	76 cd (4.3 NM)	135.8 cd (5.1 NM)
White	34 cd (3.5 NM)	76 cd (4.3 NM)	155.3 cd (5.1 NM)
Yellow	34 cd (3.3 NM)	76 cd (4.3 NM)	92.0 cd (4.6 NM)

[illegible]

Originally designed and built under contract with the U.S. Coast Guard, Carmanah M700 series lanterns were the first solar-powered lanterns using light emitting diodes (LEDs) to enter the U.S. Navigational Aid System.

Carmanah M700 series lanterns are in use by Coast Guards, Navies, and Ports Authorities around the world.

The M704-5 meets tough industry standards:

- MIL-STD 202G for shock and vibration
- MIL STD 810G for Explosive Atmosphere
- IP 68 immersion rating
- USCG PATON 33CFR66, and PATON 33CFR67 Class B & C
- CE
- RoHS / WEEE-compliant

CONFIGURATION

MODEL	OUTPUT ▼	SWITCH ▼	CONTROL ▼	CHASSIS ▼
M704-5	RED GREEN WHITE YELLOW	NON-SWITCHED	GPS NON-GPS	WHITE

[illegible]

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EcoNomics

NEW YORK NEW JERSEY RAIL, LLC.

65th Street Railcar Freight Terminal

Mooring Analysis

308101-03888

4 January 2013

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PROJECT 308101-03888 - 65TH STREET RAILCAR FREIGHT TERMINAL
FILE LOC.: BELLEVUE,

REV	DESCRIPTION	ORIG	REVIEW	WORLEY-PARSONS APPROVAL	DATE	CLIENT APPROVAL	DATE
A	Issued for review	W Chen	R. Lee	J. Kukucka	04-Jan-13		

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MOORING ANALYSIS

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65TH STREET RAILCAR FREIGHT TERMINAL
MOORING ANALYSIS

1. INTRODUCTION

This report summarizes the results of rail car float mooring analysis for the 65th Street Rail Yard terminal, undertaken as part of the New York (NY) and New Jersey (NJ) Railroad, LLC. Cross Harbor Freight Program (CHFP). This study follows a previous mooring study conducted for the Greenville Yard Terminal. Figure A shows the cross-harbor rail car route between the 65th Street terminal on the NY side and Greenville Yard terminal on the NJ side. There are two existing bridge slips at the 65th Street Terminal Slip No. 1 and Slip No. 2. Per client's request, the mooring structures at the facility are being redesigned to accommodate larger size four-rail wide car float for both loading / unloading operations and overnight (non-operation) moorage.

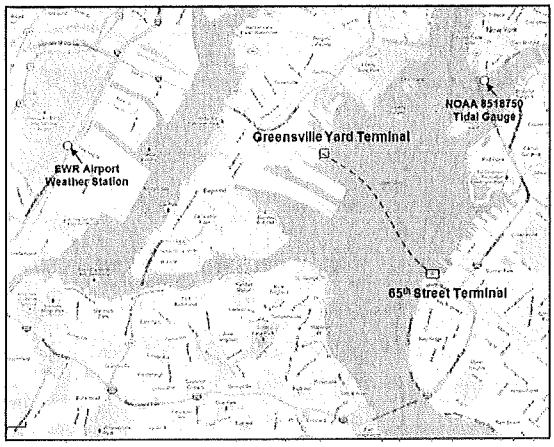

Figure A Project Site and Vicinity (Courtesy of Google Maps - ©2012 Google)

In this study, the design environmental conditions for a mooring analysis were established based on previous study results and additional data newly available and specific to the 65th Street Terminal. The mooring analysis was performed for the proposed design layout using OPTIMOOR software.

The main objectives of this mooring analysis are as follows.

- Evaluate mooring requirements for car float loading/unloading operations.
- Evaluate mooring requirements for car float non-operation moorage.
- Optimize mooring element configurations.
- Assess potential operation limiting conditions.
- Develop design loads for marine structural design.

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MOORING ANALYSIS

2. DESIGN ENVIRONMENTAL CONDITIONS

2.1 Water Levels

The water level at the project site is affected by tidal variations as well as storm surges from the Atlantic Ocean. Long-term water level data (1966 - 2011) collected from NOAA Station 8518750 at the Battery, NY (see Figure A) were analyzed and reported in the separate mooring study for the Greenville Yard Terminal. Some of the results are presented below. Note that the Mean Low Water (MLW) is adopted as the reference vertical datum for the project.

The primary tidal elevations for the project site as adopted from NOAA are presented in Table A.

Table A Tidal Elevations

Description	Abbreviation	Elevation (ft., MLW)
Highest Astronomical Tide	HAT	6.15
Mean Higher High Water	MHHW	4.85
Mean High Water	MHW	4.53
Mean Tidal Level	MTL	2.27
Mean Low Water	MLW	0.00
Mean Lower Low Water	MLLW	-0.20
Lowest Astronomical Tide	LAT	-1.59

The statistical annual high and low water levels based on the 46-year time series are summarized in Table B. Also shown is the newly recorded maximum water level during Hurricane Sandy on October 29th, 2012, which broke the historical record and may be considered as an extreme event with a return period of over 100 years.

Table B Annual High and Low Water Levels

Description	Wave Level (ft., MLW)
Recorded Maximum during Hurricane Sandy (2012)	13.9
Recorded Maximum (1966 - 2011)	9.5
Average Annual High	7.4
Average Annual Low	-3.0
Recorded Minimum (1966 - 2011)	-4.5

Since the current proposed design for the 65th Street Terminal features a floating mooring facility, water level variations will not affect the car float operation. For design of mooring / berthing dolphins, the design extreme stillwater water level of 14 ft., plus wave impact and long-term sea level rise, may be considered.

2.2 Winds

The long-term hourly wind data for the period 1931-2012 from the weather station at Newark International Airport (EWR, see Figure A) were analyzed and summarized in the mooring analysis report for the Greenville Yard Terminal. The results are considered valid for this study and some results are presented here for references. Figure B shows plots of wind roses based on all wind records as well as filtered storm wind records with wind speed > 35 mph (30 knots). Table C presents the statistics of joint wind occurrence frequencies.

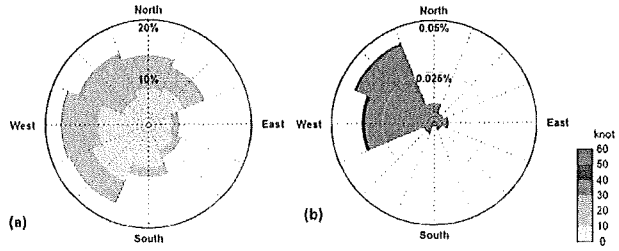

Figure B Wind Roses (a) All Winds; (b) Storm Winds (wind speed > 35 mph)

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Table C Joint Frequency Distribution of Winds (%)

SPEED (knots)	N	NE	E	SE	S	SW	W	NW	Total	Cumul.
0-5	1.16	1.74	1.65	1.43	2.33	3.28	2.21	0.90	14.69	100.00
5-10	5.94	5.97	3.19	4.10	6.03	8.99	7.80	4.70	46.77	85.41
10-15	5.15	3.83	1.23	1.47	1.94	4.08	5.58	6.22	29.50	38.63
15-20	1.12	0.60	0.20	0.11	0.18	0.59	1.36	2.30	6.46	9.13
20-25	0.34	0.13	0.05	0.03	0.04	0.14	0.49	0.92	2.13	2.67
25-30	0.06	0.02	0.01	*	*	0.02	0.10	0.19	0.42	0.54
30-35	*	*	*	*	*	*	0.03	0.04	0.09	0.11
35-40	*	*	*	*	*	*	*	*	0.01	0.02
40-45	*	*	*	*	-	*	*	*	*	*
45-50	*	-	*	*	-	*	*	*	*	*
50-55	-	-	*	*	-	-	*	-	*	*
55-60	-	-	-	*	-	-	-	-	-	*
>60	-	-	-	-	-	-	-	*	*	*
Total	13.77	12.30	6.25	7.15	10.68	17.11	17.57	15.26		
Cumul.	13.77	26.08	32.33	39.48	50.06	67.17	84.74	100.00		

Note: * denotes values less than 0.01%; - denotes no records in the bin.

Storm wind events with peak wind speeds greater than 35 mph were extracted from the available wind records and the frequency analysis was performed to re-evaluate return period wind speeds for both, all-direction storm events and northerly wind storm events. Northerly storms are of particular interest because the 65the Street Terminal is more exposed to northerly wind waves. The results of the return-period wind speeds are presented in Table D.

Table D Extreme Hourly Wind Speeds

Return Period		2 Year	5 Year	10 Year	25 Year	50 Year	100 Year
Wind Speed (All Direction)	(knot)	39	43	49	56	60	64
	(mph)	45	50	56	64	69	74
Wind Speed (N Direction)	(knot)	-	-	33	39	42	44
	(mph)	-	-	38	45	48	51

For the purpose of this mooring analysis, two design conditions were considered, the limiting operating condition and the survival condition.

The limiting wind speed for suspension of cross-harbor freight operation is assumed to be 40 mph, 3-second gust speed, or equivalently 26 mph (23 knots), hourly wind speed. This wind speed is also considered as the limiting wind speed for safe tug operation. According to Table E, wind exceeding this speed has an occurrence rate of approximately 2%, or 175 hours per year on average.

In this study the 50-year return period storm condition is considered to be the survival wind condition. The 50-year return period wind speeds are shown in Table F.

Following the recommendation of Oil Companies International Marine Forum (OCIMF, 2005), the 30-second average wind speeds were used for the mooring analysis. The 3-second design wind speeds were converted to both 1-hour average wind speeds and 30-second average wind speeds, as presented in Table E. The wind speeds in knots, which are used in the OPTIMOOR model, are also presented in the table.

Table E Design Wind Speeds for Mooring Analysis

Condition	3-Sec Average		30-Sec Average		1-Hour Average		Direction
	(mph)	(knot)	(mph)	(knot)	(mph)	(knot)	
Survival Condition	104	91	91	79	69	60	All directions
	73	63	63	55	48	42	N Wind
Operating Condition	40	35	35	30	26	23	All directions
	40	35	35	30	26	23	N Wind

2.3 Currents

Current at the vicinity of the berth location result from tides and the runoff flow. Current measurement data at the vicinity is not available at the time of the study. For the purpose of this mooring analysis, the average design current speed at the site is estimated to be 1.0 knots toward downstream (ebb current). Flood current is mostly sheltered at the berth location. These design currents are presented in Table F.

Table F Design Currents

Berth	Current Speed	Current Direction
North Bridge Slip	1.0 knots	65 deg. (toward Berth Face)
South Bridge Slip	1.0 knots	- 65 deg (off Berth Face)

2.4 Waves

Waves in the bay area are limited to local wind-generated waves or ship-traffic generated wakes. The worst wave scenario that may impact terminal operation at the 65th Street is the northerly wind waves. Design waves associated with northerly design winds were predicted using US Army Corps of Engineers' ACE software package. The results are presented in Table G.

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Table G Design Wind Speeds for Mooring Analysis

Condition	Significant Wave Height (ft.)	Peak Wave Period (s)	Peak Wave Direction
Survival Condition	3.7	3.4	±45 deg. (toward / off Berth Face)
Operating Condition	1.7	2.8	±45 deg. (toward / off Berth Face)

3. MOORING ANALYSIS – MODEL SETUP

3.1 OPTIMOOR Software

OPTIMOOR is a mooring analysis computer program widely used for planning and design of vessel mooring systems and marine terminal structures. The standard mooring analysis in OPTIMOOR is based on the quasi-static approach, which solves force / moment balances and the equilibrium position of the moored vessel under combined static environmental loads. The dynamic mode of OPTIMOOR can be used to analyze dynamic response of a moored vessel under time-varying wind, current, tidal conditions and any other external forces.

For this study, the mooring analysis was performed using both static and seakeeping modules to optimize mooring configurations, and to determine design mooring loads on bollards and dolphins under the combined loads of winds, currents and waves.

The required model input for OPTIMOOR includes vessel shape and dimensions, topside wind areas, berth and mooring configurations, and environmental conditions.

3.2 Railcar Float Particulars

Three railcar floats of different dimensions, as shown in Table H, are expected to be put in service. Only the largest four-rail car float (Proposed No. 2) was analyzed as the design conditions are governed by the largest car float. Besides the float particulars specified in Table H, the windage areas of the over-deck box car for the fully loaded case was estimated to be 560 ft.^{2} end-on, and 4550 ft.^{2} broadside.

Table H Railcar Float Particulars

Car Float	Existing	Proposed No. 1	Proposed No. 2
Displacement (short ton)	2,500	4,520	4,520
LOA (ft.)	290	360	370
Beam (ft.)	41	57	59
Depth (ft.)	9	12	14
Loaded Draft (ft.)	5	7	7
Lightship Draft (ft.)	2	3	3

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3.3 Berth Configuration

Figure C shows the design site plan and car float berth configuration at the 65th Street bridge slips. Due to a symmetric berth configuration for the north (No. 2) and south (No. 1) bridge slips, only the north berth, No. 2, was considered. The proposed berth configuration consists of the following:

- The existing bridge apron with at least two shore-mounted high capacity winches.
- Six monopile dolphins, each equipped with a floatable Donut Fender and a four-bollard ring.

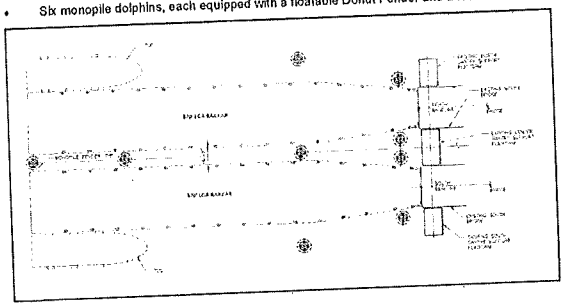

Figure C Terminal Site Plan

3.4 Mooring Line Properties

The mooring lines are assumed to be broke-in polyester ropes with a minimum breaking strength (MBS) of 125 kips. The typical load-elongation curve of the polyester rope as provided in OCIMF is shown in Figure D. Following OCIMF recommendation, the 50% MBS is adopted as the upper limit of the safe working load for the synthetic mooring rope.

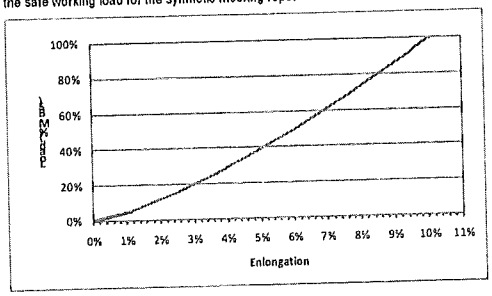

Figure D Mooring Rope Load – Elongation Curve

Two Samson mooring ropes with similar elasticity are recommended for consideration for this application. The main specifications of these ropes are provided in Table I.

Table I Recommended Mooring Rope Specifications

Item	Samson RP-12 SSR-1200	Samson Ultra Blue-8
Samson Product Code	416	252
Strand	12	8
Specific Gravity	1.20	0.94
Diameter	2-1/4 in	2-5/8 in
Weight per 100 ft.	136 lb	131 lb.
Minimum Breaking Load (MBL)	125 kips	126 kips
Elongation at 30% Working Load	4.04 %	4.20 %

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3.5 Fender System

The Trelleborg donut fender used on each monopile dolphin is designed to accommodate design berthing energy and impact loads. Each fender unit is 14 ft. long and has a rated load of 291 kips at a maximum compression of 1.44 ft. (60% of foam wall thickness). The stiffness curve of the donut fender is shown in Figure E.

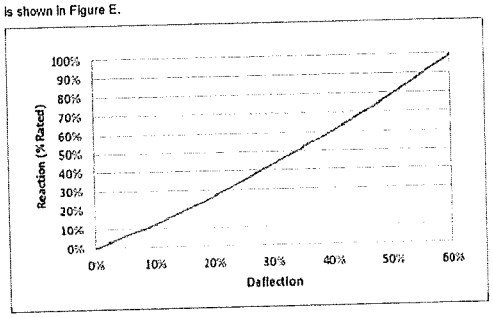

Figure E Donut Fender Performance Curve

3.6 Load Cases

The selected load cases for mooring analyses are presented in Table J. These load cases reflect worst scenarios for both operating and non-operating conditions.

The wind speeds in Table K are the 30-second average wind speeds in knots, as taken from Table E. For the simulation cases with no wave load, the wind direction is noted as "all directions". In the OPTIMOOR program, the maximum mooring loads on mooring lines or bollards can be identified by sweeping the wind direction from 0 to 360 degrees. The maximum wind load is expected to occur when wind is approximately in the beam-on directions (SW or NE) toward the float, in which cases waves are insignificant at the berth. As such wave loads are neglected in these cases. For the cases associated with northerly winds, the directions of wind, wave and current are all presented as the approaching angles relative to the stern side of the car float. Both positive and negative angles are considered, which reflect the cases for a car float at north slip (No. 2) and south slip (No. 1) respectively.

The results of mooring optimization and mooring loads based on the analysis of these load cases are summarized in the next section.

Table J Load Cases

Load Case		Wind (30-sec average)		Wave			Current	
Condition	Loading	Speed (knot)	Direction	H_s (m)	T_p (s)	Direction	Speed (knot)	Direction
Operation	Loaded	30	all directions	-	-	-	1.0	±65 deg to stern
		30	±45 deg to stern	1.7	2.8	±45 deg to stern		
Non-operation	Lightship	79	all directions	-	-	-		
		55	±45 deg to stern	3.7	3.4	±45 deg to stern		

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MOORING ANALYSIS

4. MOORING OPTIMIZATION AND DESIGN LOADS

4.1 Optimized Mooring Arrangement

Mooring arrangements for the design car float for both operating (loading / unloading) and non-operating (over-night moorage) conditions were proposed and optimized through mooring analysis. Figure F shows the optimized berth configuration and the mooring line arrangements, as validated by the OPTIMOOR model. Table K depicts the recommended placement of monopile dolphins measured from the bridge apron for optimal mooring and berthing efficiency.

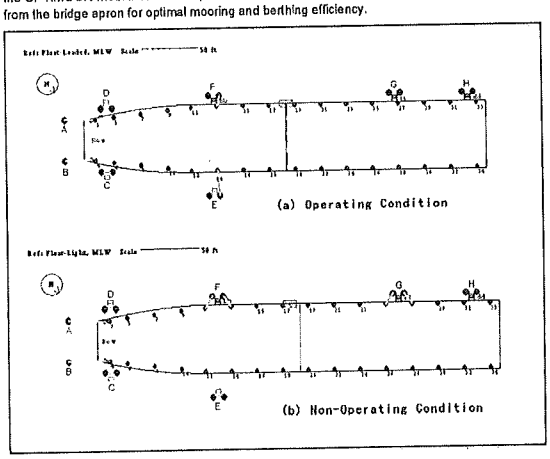

Figure F Mooring Configuration for Normal Condition

Table K Mooring / Berthing Dolphin Placement

Monopile	C	D	E	F	G	H
Distance from Bridge Apron (ft.)	18.5	18.5	118	118	285	351

Under the operating condition, two head lines and two breast lines are generally required. Proper pretentions should be applied to one or two of the head lines depending on the wind and wave conditions. Mooring analysis indicated that the short line at dolphin F will exceed the 50% MBS when strong wind is blowing the float off the berth. Therefore it is recommended that under windy conditions double breasting lines can be applied at Dolphin F (as shown in Figure G), or alternatively another breast line be added at Dolphin G, to ensure that the car float is being held in place during loading / unloading operations.

Under the non-operating condition, the car float needs to be pulled 9 to 10 ft. away from the bridge apron. This allows that the two breasting dolphins, F and G, are approximately aligned to the centre of two adjacent cleats on the float. Two head lines and four breasting lines are generally sufficient for securing the car float against breasting dolphins. No line pretension is needed. Loose tie-up actually helps reduce line loads under rough sea conditions, however the slackness should be uniform on all breasting lines in order to avoid load concentration on individual lines.

More breasting lines would be necessary when stormy northerly winds combined with waves approach the float at an angle greater than 30 degrees to the stern. Therefore in expectation of any extreme northerly wind storm event, 6 breasting lines should be employed for the over-night moorage. Figure G further illustrates the recommended mooring arrangements for stormy weather conditions.

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NEW YORK NEW JERSEY RAIL, LLC.
65TH STREET RAILCAR FREIGHT TERMINAL
MOORING ANALYSIS

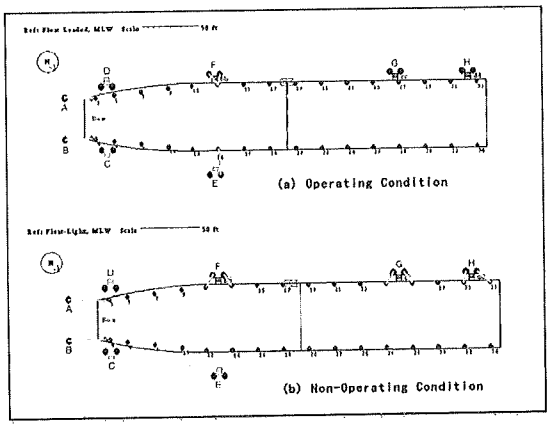

Figure G Recommended Mooring Configuration for Stormy Condition

4.2 Design Mooring Loads

4.2.1 Wind and Current Loads

The expected maximum transverse (broadside) wind and current loads under the limiting operating condition and the survival condition are presented in Table L.

Table L Maximum Under Transverse Wind and Current Loads

Load Case		Wind Speed (30-sec, knot)	Wind Load (klp)	Current Load (klp)
Operation	Loaded	30	41	7
Non-Operation	Lightship	78	105	2

4.2.2 Line Tensions

The maximum single line tensions for both operating and non-operating conditions are presented in Table M. These loads were obtained based on recommended mooring line arrangement for stormy weather conditions (Figure G). Mooring analysis results confirmed that the 30-ton design load capacity for bollards and 125-kip MBS for proposed mooring lines are appropriate. Two bridge mounted winches (on the bridge slip) with 50-ton load capacity are required for holding the float in place and pre-tensioning the head lines during loading / unloading operations.

Table M Maximum Mooring Line Tensions

Load Case		Head Line	Breasting Lines
Operation	Loaded	63 kip	37 kip
Non-Operation	Lightship	21 kip	60 kip

4.2.3 Mooring Loads on Dolphins

The maximum mooring loads on a dolphin resulting from combined line pull are presented in Table N.

Table N Maximum Mooring Loads on Dolphins

Load Case		Load
Operation	Loaded	74 kip
Non-Operation	Lightship	85 kip

4.2.4 Mooring Loads on Fender Panels

The maximum mooring loads on fenders are presented in Table O.

Table O Maximum Mooring Loads on Fenders

Load Case		Load
Operation	Loaded	-
Non-Operation	Lightship	73 kip

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65TH STREET RAILCAR FREIGHT TERMINAL
MOORING ANALYSIS

5. SUMMARY

A mooring analysis was performed to assess mooring requirements for the proposed new car floats and berth configuration at the 65th Street cross-harbor freight terminal. In this study, the design environmental conditions for mooring consideration were established and a set of worst-scenario mooring cases were analyzed for both loading / unloading operation and the over-night (non-operation) moorage. The gust wind speed of 40 mph was adopted as the limiting operating condition, and the 50-year return period storm conditions was adopted as the survival condition for non-operation moorage.

Based on the mooring analysis results, new berth configuration and mooring line arrangements have been optimized. The recommended monopile placement and mooring line layouts are presented in Table K and Figure F and Figure G. The results of mooring loads under the design conditions are summarized in Section 4.2. These results suggest that the proposed design mooring concepts will meet the mooring requirements for proposed car floats under the proposed the design conditions. The resulting loads on structures are within the expected range. For a more severe scenario such as a major hurricane approach, the float should be taken for sheltering in advance of the event.

The above results and conclusions are drawn based on assumptions the analysis is currently based upon, which include mooring rope specifications and proper mooring procedures. Additional analysis may be required in the case of any future changes in environmental conditions or mooring conditions.

SUSTAINABLE INFRASTRUCTURE GUIDELINES
PROJECT CREDIT DOCUMENTATION FORM

PORT AUTHORITY OF NY & NJ

INSTRUCTIONS

For each credit, provide applicable documentation type (drawing #, specification # or narrative) as indicated in project manual.

All documentation is required at the end of Stage 3 and/or 4 as indicated below.

GENERAL PROJECT INFORMATION

PROJECT NAME:	*Enter project name here*
FACILITY:	*Enter facility here*
LE/A or RE:	*Enter LEA or RE name here*
PHONE:	*Enter phone number here*
EMAIL:	*Enter email address here*
PID #	*Enter PID number here*
CONTRACT #	*Enter contract number here*
DATE:	

Credit Number	Credit Title	Documentation Stage	Contract Drawing Number	Reference Specification Number	Narrative Description
SITE SECTION					
IS-1	UTILIZE AN INTEGRATED TEAM APPROACH	1, 2, & 3			
IS-2	PREPARE A SITE ASSESSMENT	1, 2, & 3			
IS-3	MAXIMIZE USE OF PREVIOUSLY DEVELOPED SITES	3			
IS-4	MAXIMIZE USE OF KNOWN CONTAMINATED SITES	3, 4			
IS-5	PROTECT ECOLOGICAL HEALTH OF WETLAND, FLOODPLAINS & RIPARIAN BUFFERS	3			
IS-6	PROTECT AND MAINTAIN ABSORBENT LANDSCAPES	3			
IS-7	UTILIZE PERVIOUS PAVEMENT	3			
IS-8	UTILIZE APPROPRIATE VEGETATION	3, 4			

Credit Number	Credit Title	Documentation Stage	Contract Drawing Number	Reference Specification Number	Narrative Description
IS-9	USE TURFGRASS APPROPRIATELY	3, 4			
IS-10	AMEND AND REUSE EXISTING SOILS	3, 4			
IS-11	BALANCE EARTHWORK	3			
IS-12	COORDINATE UTILITY WORK	3			
IS-13	UTILIZE TRENCHLESS TECHNOLOGY	3			
IS-14	MITIGATE HEAT ISLAND EFFECT	3			
IS-15	MINIMIZE LIGHT POLLUTION	3			
IS-16	OPTIMIZE PUBLIC ENVIRONMENTS - BICYCLES AND PEDESTRIANS	3			
IS-17	OPTIMIZE TRAFFIC SAFETY	3			
IS-18	OPTIMIZE ROADWAY ALIGNMENT SECTION	3			
IS-19	EXPAND OR ENHANCE INTERMODAL CONNECTIVITY	3			
IS-20	USE TRANSPORTATION SYSTEM MANAGEMENT	3			
IS-21	USE TRANSPORTATION TECHNOLOGIES	3			
WATER SECTION					
IW-1	IMPLEMENT STORMWATER BEST MANAGEMENT PRACTICES STRATEGIES	3			

Credit Number	Credit Title	Documentation Stage	Contract Drawing Number	Reference Specification Number	Narrative Description
IW-2	IMPLEMENT RAINWATER NEUTRALITY	3			
IW-3	REDUCE USE OF POTABLE WATER FOR IRRIGATION	3			
IW-4	UTILIZE END USE METERING - WATER	3			
ENERGY SECTION					
IE-1	OPTIMIZE ENERGY PERFORMANCE	3			
IE-2	COMMISSION ELECTRICAL AND MECHANICAL SYSTEMS	3, 4			
IE-3	UTILIZE END USE METERING - ENERGY	3			
IE-4	USE ON-SITE RENEWABLE ENERGY	3			
IE-5	PROTECT OZONE LAYER	3			
IE-6	PROVIDE ALTERNATIVE FUELING STATIONS	3			
MATERIAL SECTION					
IM-1	USE RECYCLED MATERIALS	3, 4			
IM-2	USE LOCAL / REGIONAL MATERIALS	3, 4			
IM-3	REUSE MATERIALS	3			
IM-4	USE DURABLE MATERIALS	3			

Credit Number	Credit Title	Documentation Stage	Contract Drawing Number	Reference Specification Number	Narrative Description
IM-5	USE SUSTAINABLY HARVESTED WOOD	3, 4			
IM-6	MINIMIZE USE OF TOXIC AND/OR HAZARDOUS MATERIALS	3			
IM-7	ENHANCE PAVEMENT LIFECYCLE	3			
IM-8	UTILIZE THIN SURFACE PAVING	3			
IM-9	UTILIZE WARM-MIX ASPHALT TECHNOLOGY	3			
CONSTRUCTION SECTION					
IC-1	MINIMIZE POLLUTION FROM CONSTRUCTION ACTIVITY	3, 4			
IC-2	PROTECT EXISTING NATURAL SYSTEMS	3, 4			
IC-3	UTILIZE TRANSPORTATION MANAGEMENT DURING CONSTRUCTION	3, 4			
IC-4	UTILIZE GREEN CONSTRUCTION EQUIPMENT	3, 4			
IC-5	REDUCE NOISE AND VIBRATION ABATEMENT DURING CONSTRUCTION	3, 4			
IC-6	IMPLEMENT CONSTRUCTION WASTE MANAGEMENT	3, 4			
IC-7	IMPLEMENT INTEGRATED PEST MANAGEMENT DURING CONSTRUCTION	3, 4			
OPERATIONS & MAINTENANCE SECTION					
IO-1	IMPLEMENT SUSTAINABLE LANDSCAPE MAINTENANCE	3			

Credit Number	Credit Title	Documentation Stage	Contract Drawing Number	Reference Specification Number	Narrative Description
IO-2	MAINTAIN SOIL QUALITY	3			

SUSTAINABLE INFRASTRUCTURE GUIDELINES
PROJECT CREDIT CHECKLIST FORM - Version 1.0

PORT AUTHORITY OF NY & NJ

GENERAL PROJECT INFORMATION

PROJECT NAME	[illegible]
FACILITY	[illegible]
LEA or RE	[illegible]
PHONE NUMBER	[illegible]
EMAIL ADDRESS	[illegible]
PID #	[illegible]
CONTRACT #	[illegible]
DATE	[illegible]
PROJECT ACHIEVEMENT	[illegible]

PROJECT CERTIFICATION SIGNATURES

By entering the name below as a digital signature, the LEA and Principal Engineer certify that all information in this document is correct and accurate.

LEA (stage 1) or RE (stage 4) digital signature

Type digital signature here

I certify that the information contained in this document is correct and accurate

Principal digital signature (Stage 2)

Type digital signature here

I certify that the information contained in this document is correct and accurate

PROJECT TYPE

Choose a Project Type or Types	
Airfield New Construction / Reconstruction	☐
Airfield Pavement Rehabilitation	☐
Bridge New Construction / Reconstruction	☐
Bridge and Tunnel Rehabilitation	☐
Civil - Work Orders	☐
Intelligent Transportation System	☐
Marine Structures - Docks, Wharves, Bulkheads, etc.	☑
Parking Lot New Construction / Reconstruction	☐
Parking Lot Rehabilitation	☐
Port Site Work	☐
Roadway New Construction / Reconstruction	☐
Roadway Pavement Rehabilitation	☐
Trackwork	☐
Utility New Construction	☐
Utility Rehabilitation	☐

Associated Scopes of Work	
Landscaping	☐
Exterior Lighting	☐
MECH / EL / Fire Suppression System Installation	☐
Traffic Safety and Public Environment	☐

Category	CREDIT NUMBER	POINTS ACHIEVABLE	CREDIT NAME	PURSUING CREDITS	POINTS ACHIEVED	INCLUDE CREDIT
SITE	IS-1		Utilize Integrated Team Approach	☐		☐
	IS-2		Prepare a Site Assessment	☐		☐
	IS-3		Maximize Use of Previously Developed Land	☐		☐
	IS-4		Maximize Use of Known Contaminated Sites	☐		☐
	IS-5		Protect the Ecological Health of Wetlands and Floodplains	☐		☐
	IS-6		Protect and Maintain Absorbent Landscapes			☐
			15% of absorbent landscape protected and maintained (1 point)	☐		
			50% of absorbent landscape protected and maintained (2 points)	☐		
	IS-7		Utilize Pervious Pavement			☐
			25% of total pavement area utilizes pervious pavement (1 point)	☐		
			50% of total pavement area utilizes pervious pavement (2 points)	☐		
			75% of total pavement area utilizes pervious pavement (3 points)	☐		
	IS-8		Utilize Appropriate Vegetation	☐		☐
	IS-9		Use Turfgrass Appropriately	☐		☐
	IS-10		Amend and Reuse Existing Soils	☐		☐
	IS-11		Balance Earthwork			☐
			25% less removal of material or less new material required (1 point)	☐		
			50% less removal of material or less new material required (2 points)	☐		
	IS-12		Coordinate Utility Work			☐
			Coordinate Utility Work (1 point)	☐		
			Install Leak Detection System (1 point)	☐		
	IS-13		Utilize Trenchless Technology			☐
			Rehabilitation of existing pipe (2 points) or	☐		
			Replacement of pipe (1 point)	☐		
	IS-14		Mitigate Heat Island Effect			☐
			50% of site area utilizes heat island effect mitigation strategies (1 point)	☐		
			75% of site area utilizes heat island effect mitigation strategies (2 points)	☐		
			95% of site area utilizes heat island effect mitigation strategies (3 points)	☐		
	IS-15		Minimize Light Pollution	☐		☐
	IS-16		Optimize Public Environments - Bicycles and Pedestrians			☐
			Pedestrian amenities (1 point)	☐		
			Bicycle amenities (2 points)	☐		
	IS-17		Optimize Traffic Safety	☐		☐
	IS-18		Optimize Roadway Alignment Selection	☐		☐
	IS-19		Expand or Enhance Intermodal Connection	☐		☐
	IS-20		Use Transportation System Management	☐		☐
	IS-21		Use Transportation Technologies	☐		☐
WATER	IW-1		Implement Stormwater Best Management Practices			☐
			> 1/4 NJ (new impervious surface) or > 1 acre NY (soil erosion) (1 point)	☐		
			> 1 NJ (new impervious surface) or > 1 acre NY (soil erosion) (3 points)	☐		
	IW-2		Implement Rainwater Harvesting	☐		☐
	IW-3		Reduce Use of Potable Water for Irrigation			☐
			Use harvested storm water for 50% of irrigation requirements (1 point)	☐		
			Use harvested storm water for 75% of irrigation requirements (2 points)	☐		
	IW-4		Utilize End Use Metering - Water	☐		☐
ENERGY	IE-1		Optimize Energy Performance			☐
			10% reduction (2 points)	☐		
			20% reduction (4 points)	☐		
			30% reduction (6 points)	☐		
	IE-2		Commissioning Electrical and Mechanical Systems	☐		☐
	IE-3		Utilize End Use Metering - Energy	☐		☐
	IE-4		Use On-Site Renewable Energy	☐		☐
	IE-5		Protect Ozone Layer	☐		☐
	IE-6		Provide Alternative Fueling Stations	☐		☐
MATERIAL	IM-1	1 to 3	Use Recycled Materials			☐
			Specify one (1) type of material (1 point)	☑	1	
			Specify three (3) types of materials (2 points)	☐		
			Specify five (5) types of materials (3 points)	☐		
	IM-2	1	Use Local / Regional Materials	☐		☐
	IM-3		Reuse Materials	☐		☐
	IM-4	1	Use Durable Materials	☐		☐
	IM-5	1	Use Sustainably Harvested Wood	☐		☐
	IM-6		Minimize Use of Toxic and / or Hazardous Materials	☐		☐
	IM-7		Enhance Pavement Lifecycle	☐		☐
	IM-8		Utilize Thin Surface Paving	☐		☐
	IM-9		Utilize Warm Mix Asphalt Technology	☐		☐
CONSTRUCTION	IC-1	2	Minimize Pollution from Construction Activity	☐		☐
	IC-2	2	Protect Existing Natural Systems	☑	2	☐
	IC-3		Utilize Transportation Management During Construction	☐		☐
	IC-4	1	Utilize Green Construction Equipment	☑	1	☐
	IC-5	1	Reduce Noise and Vibration During Construction	☑	1	☐
	IC-6	1 to 2	Implement Construction Waste Management			☐
			75% diversion - all required materials (1 point)	☑	1	
			75% diversion - all recommended materials (1 point)	☑	1	
	IC-7		Implement Integrated Pest Management During Construction	☐		☐
O + M	IO-1		Implement Sustainable Landscape Maintenance	☐		☐
	IO-2		Maintain Soil Quality	☐		☐

TOTAL POINTS

TOTAL POINTS ACHIEVABLE: 14

RATING	POINTS		
CERTIFIED	6	to	8
GOLD	9	to	10
PLATINUM	11	to	14

POINTS ACHIEVED: 7

RATING ACHIEVED: CERTIFIED

Appendix E - Technical Specification Outlines

APPENDIX E – TECHNICAL SPECIFICATION OUTLINES

E.01 SECTION 05120

STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes the fabrication and erection of structural steel components.

1.2 REFERENCES

A. AISC: American Institute of Steel Construction.

B. ASTM: American Society for Testing and Materials.
   1. ASTM A36: Carbon Structural Steel
   2. ASTM A108: Steel Bar, Carbon and Alloy, Cold-Finished
   3. ASTM A307: Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
   4. ASTM A325: Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
   5. ASTM A490: Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength
   6. ASTM A500: Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
   7. ASTM A501: Hot-Formed Welded and Seamless Carbon Steel Structural Tubing

C. AWS: American Welding Society.
   1. AWS A5.1: Carbon Steel Electrodes for Shielded Metal Arc Welding
   2. AWS A5.5: Low Alloy Steel Electrodes for Shielded Metal Arc Welding
   3. AWS A5.17: Carbon Steel Electrodes and Fluxes for Submerged Arc Welding
   4. AWS A5.18: Carbon Steel Electrodes and Rods for Gas Shielded Arc Welding
   5. AWS A5.20: Carbon Steel Electrodes for Flux Cored Arc Welding
   6. AWS A5.23: Low Alloy Steel Electrodes and Fluxes for Submerged Arc Welding
   7. AWS A5.28: Low Alloy Steel Electrodes and Rods for Gas Shielded Arc Welding
   8. AWS A5.29: Low Alloy Steel Electrodes for Flux Cored Arc Welding
   9. AWS D1.1: Structural Welding Code, Steel – latest edition.

D. Port Authority of New York and New Jersey (PA)

E. IBC: International Building Code.
   1. D1.4-04: Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction.

F. ICC: International Code Council.

1.3 SUBMITTALS

A. Shop Drawings: Submit complete details and schedules for fabrication and erection.

B. Product Data: Laboratory test reports and mill certifications for all steel.

C. Connections designed by the fabricator as part of the preparation of shop drawings shall bear the stamp and signature of a professional engineer registered in the State of New Jersey.

D. Three sets of welder qualification records, for shop welders, field welders, welding operators, and tackers shall be submitted to the PA directly from the PA-approved testing laboratory.

E. Submit three sets of written procedures for all welded joints to PA for review and approval. Procedures shall be prepared in a manner so that field personnel can understand and use them without referencing the applicable codes. Welding procedures may be AWS prequalified as listed in AWS D1.1-2004, or they shall be qualified in accordance with AWS by the testing laboratory.

PART 2 - PRODUCTS

2.1 PRODUCTS

A. Rolled Steel Plates, channels, angles and Bars: ASTM A36, unless otherwise shown.

B. Wide flanges and Tee's ASTM A992

C. Structural Steel Tubular Products: ASTM A500 GR B for rectangular and round HSS,.

D. Bolts: ASTM A307, A325, or A490 as shown on the drawings.

E. Headed Stud Shear Connectors: ASTM A108, Grade 1015 or 1020, cold finished carbon steel; with dimensions complying with AISC.

F. Grout: Comply with Section Non Metallic Grout.

G. Electrodes:
   1. Electrodes for shielded metal arc welding shall conform to the requirements of the latest edition of ANSI/AWS A5.1, Specification for Mild Steel Covered Arc Welding Electrodes, or to the requirements of ANSI/AWS A5.5, Specification for Low Alloy Steel Covered Arc Welding Electrodes. The minimum tensile strength of the filler material shall be 486 MPa (70 ksi).

2. The bare electrodes and flux used in combination for submerged arc welding of steels shall conform to the requirements in the latest edition of ANSI/AWS A5.17, Specification for Bare Mild Steel Electrodes and Fluxes for Submerged Arc Welding, or to the requirements of the latest edition of ANSI/AWS A5.23, Specification for Low Alloy Electrodes and Fluxes for Submerged Arc Welding.
3. The electrodes and shielding for gas metal arc welding or flux cored arc welding for producing weld metal with minimum specified yield strengths of 60,000 psi (415 MPa) or less, shall conform to the requirements of the latest edition of ANSI/AWS A5.18, Specification for Carbon Steel Filler Metals for Gas Shielded Arc Welding, or ANSI/AWS A5.20, Specification for Carbon Steel Electrodes for Flux Cored Arc Welding, as applicable.
4. The electrodes and shielding for gas metal arc welding for producing weld metal with a minimum specified yield strength greater than 60,000 psi (415 MPa) shall conform with the latest edition of ANSI/AWS A5.28, Specification for Low Alloy Steel Filler Metals for Gas Shielded Arc Welding.
5. The electrodes and shielding gas for flux cored arc welding for producing weld metal within a minimum specified yield strength greater than 60,000 psi (415 MPa) shall conform to the latest edition of ANSI/AWS A5.29, Specification for Low Alloy Steel Electrodes for Flux Cored Arc Welding.

2.2 SHOP FABRICATION

A. Comply with AISC, Manual of Steel Construction, current edition, including Part 16, Specification for Structural Steel Buildings.

B. Fabricate in accordance with approved shop drawings and referenced standards.

C. Weld shop connections and bolt field connections, unless otherwise noted.

D. Provide holes indicated for securing other work to structural steel framing, and for passage of other work through structural steel members. Provide threaded nuts, welded to framing, and other specialty items as shown, to receive other work.

PART 3 - EXECUTION

3.1 ERECTION

A. Erect steel in accordance with approved shop and erection drawings, and AISC Manual of Steel Construction.
1. Anchor Bolts:
   a. Set anchor bolts with double nuts and templates.
   b. Cast anchor bolts in cast-in-place concrete.
2. Bearing Plates:
   a. Set bearing plates on cleaned bearing surfaces, using wedges or other adjustments, as required.

   b. Grouting:
      1) Solidly pack below bearing plates with non-metallic, non-shrink grout, or place hydraulically with a flowable grout.
      2) See Specification for grout.
3. Field Bolting:
   a. Install bolted connections in accordance with approved drawings.
   b. Comply with AISC Specification for Structural Joints using ASTM A325 or A490 bolts.

3.2 WELDING

A. Welded pipe and tubing joints shall be 100 percent full penetration welds and shall be continuous around the full circumference of the joint.

B. The acceptance/rejection criteria for all welds shall be as specified in AWS D1.1-04, Chapter 2, Design of Welded Connections.
1. Non-Tubular Connections:
   a. For statically loaded connections, use Parts A and B.
   b. For cyclically loaded connections, use Parts B and C.

C. The extent of both visual and NDT shall be 10% of all welds if no repairs are required. If repairs are required then the extent shall be doubled for each repair to the extent limit of 100 percent.

D. Welds which do not meet the requirements of the specifications shall be repaired and retested as necessary at the Contractor's expense. Inspection by the Port shall in no way relieve the Contractor of responsibility for the performance of welding which meets the requirements of said specifications for quality and workmanship.

E. Rejection of any portion of a weld inspected on a less than 100 percent basis shall require inspection of 100 percent of that weld.

3.3 STRUCTURAL ADJUSTMENTS

A. Repair rejected field welds.

B. Replace or correct defective members and adjust alignment to meet AISC tolerances.

C. Adjust members that are more than 3/8 inch from design tolerances, as stated in AISC.

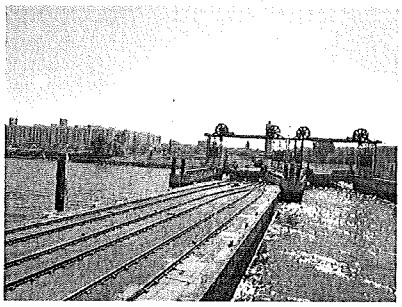
END OF SECTION

Appendix F - Field Data

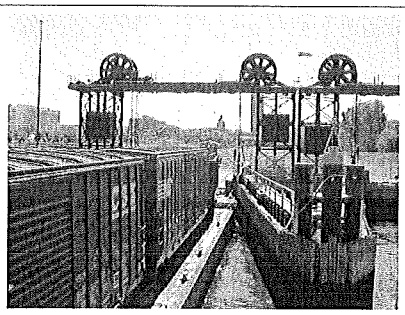
F.01 65th Street Rail Yard Hydrographic Survey

Hydrographic survey is forthcoming

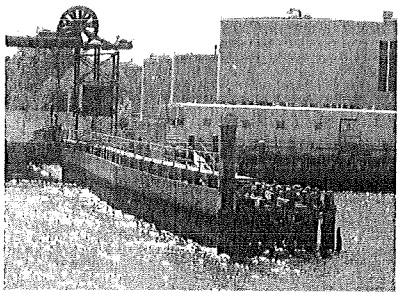
Appendix G - Photos



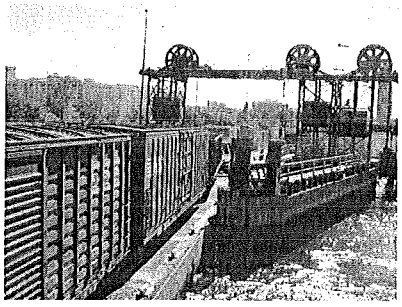
G.01 Existing North Fender Rack
65th Street Facility - Looking to the North of Slip No. 2



G.02 Existing Middle Fender Rack
65th Street Facility - Looking between Slips No. 1 and 2



G.03 Existing South Fender Rack
65th Street Facility - Looking to the South of Slip 1



G.04 Car Float Docking
65th Street Facility - Existing Car Float #16 Halfway in Slip No. 2

G.05 Bridge & Gantry No. 1
65th Street Facility - Looking West

G.06 Docked Car Float
65th Street Facility - #16 Dock Empty at Slip No. 2

NEW YORK NEW JERSEY RAIL, LLC

February 23, 2015

Jonathan M. Broder, Esq.
Vice President – Corporate Development and
Chief Legal Officer
Consolidated Rail Corporation
1717 Arch Street, Suite 1310
Philadelphia, PA 19103

Re: Consolidated Rail Corporation ("Conrail") / New York New Jersey Rail, LLC ("NYNJR") - Greenville Yard, Jersey City, NJ ("Greenville Yard") – Construction of New Transfer Bridge #10

Dear Mr. Broder:

I refer you to the Property Lease, dated as of December 15, 2002, between Conrail, as landlord, and New York Cross Harbor Railroad Terminal Corporation ("NYCHRTC"), as tenant, as assigned by NYCHRTC to NYNJR, and as amended by that certain Lease Amendment dated as of July 25, 2013 (as so assigned and amended, the "Lease").

Pursuant to the Lease, Conrail leases approximately 27 acres of real property at Greenville Yard, Jersey City, New Jersey, to NYNJR for use in its operations.

As you are aware, prior to Superstorm Sandy in 2012, a transfer bridge owned by NYNJR and located at Greenville Yard ("Bridge #11") was used on a daily basis in support of NYNJR's cross-harbor marine carfloat system.

Superstorm Sandy effectively destroyed Bridge #11, in addition to three other non-operational transfer bridges at Greenville Yard, causing a suspension of carfloat operations. NYNJR was forced to move a floating pontoon bridge located at 51st Street Yard in Brooklyn, New York to Greenville Yard, and to install such pontoon bridge at Greenville Yard as a temporary improvement allowing NYNJR to resume carfloat operations. The pontoon bridge has a limited life span and is not the permanent solution for the loss of Bridge #11. In order to continue operating its

26 Colony Road
Jersey City, New Jersey 07305
Tel: 201-433-0360

marine carfloat system on a reliable basis, NYNJR must build a new, more robust transfer bridge at Greenville Yard in replacement of former Bridge #11.

In accordance with Section 11 of the Lease, this letter serves as Conrail's consent to NYNJR's construction and operation of a new transfer bridge at Greenville Yard, as a permanent replacement of Bridge #11 to be known as new Bridge #10, subject to the following conditions:

1- NYNJR shall construct new Bridge #10 substantially in accordance with the plans and specifications set forth on "Exhibit A" attached hereto and made a part hereof, which plans and specifications have been reviewed and approved by Conrail. NYNJR must submit any proposed material change or alteration to such plans and specifications to Conrail's Engineering Department for its review and approval prior to implementing any such change or alteration.

2-NYNR shall construct new Bridge #10 in the approximate location shown on the plan attached hereto as "Exhibit B" and made a part hereof.

3-Upon completion of construction, NYNJR shall supply a set of as-built drawings of new Bridge #10 to Conrail's Engineering Department, along with a certification from a Professional Engineer licensed to practice in the State of New Jersey that such bridge has been constructed substantially in accordance with the approved plans and specifications.

4 - Title to new Bridge #10 will be held by NYNJR.

5-NYNJR's construction, operation and maintenance of Bridge #10 is subject to NYNJR's compliance with the terms and conditions of the Lease.

6-Conrail and The Port Authority of New York and New Jersey (the "Port Authority") are currently negotiating the terms of an agreement (the "Project Agreement") providing for the redevelopment of Greenville Yard into a modern intermodal freight facility, including construction, operation and maintenance of a revised track layout which will allow for improved NYNJR carfloat operations and a new Intermodal Container Transfer Facility. Once the Project Agreement is executed between Conrail and the Port Authority, track connections between Greenville Yard and the new Bridge #10 will be constructed in accordance with the terms and conditions of such Project Agreement. If Conrail and the Port Authority cease negotiations or otherwise fail to reach agreement on a mutually acceptable Project Agreement, in accordance with Section 11 of the Lease, Conrail hereby further consents to give NYNJR the right, but not the obligation, to construct a track connection, at NYNJR's expense, between the then-existing Greenville Yard and the new Bridge #10, subject to submitting such proposed track connection for prior approval by Conrail's Engineering Department, such approval not to be unreasonably withheld, conditioned, or delayed. Title to such track connection will be held by NYNJR.

7-Nothing contained herein modifies any of the terms and conditions of the Lease, which terms and conditions remain in full force and effect.

If this accurately describes our understanding with respect to the construction of new Bridge #10 and any track connection between such bridge and Greenville Yard, kindly confirm this by signing the enclosed copy of this letter on behalf of Conrail and returning it to my attention.

Yours truly,

NEW YORK NEW JERSEY RAIL, LLC
By: The Port Authority of New York and New Jersey, its sole Member

By: _____
Name: Patrick J. Foye
Title: Executive Director

Port Authority Use Only:	
Approval as to Terms:	Approval as to Form:

AGREED TO AND ACCEPTED:

CONSOLIDATED RAIL CORPORATION

By: _____
Name:
Title:

ACQUISITION OF THE NEW YORK NEW JERSEY RAIL CORPORATION AND AUTHORIZATION OF CERTAIN AGREEMENTS IN CONNECTION WITH THE POTENTIAL ACQUISITION OF REAL PROPERTY FROM CONSOLIDATED RAIL CORPORATION AT GREENVILLE YARD, NEW JERSEY

It was recommended that the Board authorize the Executive Director to enter into an assignment agreement with Consolidated Rail Corporation (Conrail), whereby Conrail would assign to the Port Authority all of Conrail's rights and obligations with respect to a "right of first refusal" to purchase (the Assignment Agreement) the New York New Jersey Rail Corporation LLC (the Company) on the terms and conditions of Conrail's right of first refusal, at a price not to exceed $20 million, so that the Port Authority might exercise the right of first refusal to purchase the Company before such right expires. It also was recommended that the Board authorize the Executive Director to enter into a Letter of Intent, Term Sheet and Exclusivity Agreement (the LOI) authorizing the Port Authority to negotiate a Contract of Purchase and Sale for the purchase of certain property located in Jersey City, New Jersey (the Conrail Property). Execution of the Assignment Agreement and acquisition of the Company would neither authorize nor obligate the Port Authority to purchase the Conrail Property, and the LOI would make such acquisition subject to future action by the Boards of both parties. Accordingly, acquisition of the Conrail Property by the Port Authority would require future Board authorization.

The Company is the current tenant of approximately 27 acres of the Conrail Property. The Company has a lease with Conrail that expires on December 31, 2032. Conrail now has a right of first refusal to purchase the Company. The Company currently is for sale, and staff was conducting due diligence and negotiating a letter of intent when the Company announced it had entered into an exclusivity agreement with another potential purchaser. Staff discovered that Conrail has (1) a right of first refusal to purchase the Company, and (2) an absolute right to consent to any transfer of the lease or any sublease. Pursuant to the terms of Conrail's right of first refusal, Conrail must match the terms of the potential purchaser's offer. Conrail has indicated to staff that it has no independent interest in exercising the right of first refusal or in purchasing the Company. However, Conrail is permitted to assign its right of first refusal, which must be acted upon on or about September 7, 2008.

The Assignment Agreement would enable the Port Authority to purchase the Company in place of Conrail. As consideration for this assignment, the Port Authority would agree to the following: indemnify Conrail for any lawsuits arising as a result of the assignment; maintain the viability of the float operation; charge a fair and reasonable fee for the float service; and negotiate in good faith a railroad side track agreement covering Conrail's freight operations in Port Newark. Pursuant to the terms of Conrail's right of first refusal, Conrail must match the terms of an offer by another potential purchaser of the Company. Conrail has the right to assign its right of first refusal; however, the right to exercise such right will expire on or about September 7, 2008. The Port Authority would be obligated to honor all terms set forth in the Letter of Intent negotiated between the Company and its prospective purchaser, so long as the total acquisition cost is not in excess of $20 million. The estimated total acquisition cost (pursuant to the Assignment Agreement) is between $15.2 and $17 million.

Timely acquisition of the Company would provide the Port Authority with a once-in-a-generation opportunity to address the freight capacity needs of the region by restoring and protecting the service provided by this unique intermodal facility. Although rail float is currently underutilized, interest in rail freight as a means of regional freight movement is growing, caused in part by ongoing highway congestion and rising fuel prices. Expanding freight rail and barge service are the only readily available means to add transportation capacity in the region. Such transportation capacity enhancements would not include transportation services for such things as municipal solid waste services and facilities, without further Board approval.

Conrail has also indicated a willingness to sell the leasehold property (consisting of 27 acres) and three adjacent upland parcels – a total of approximately 44 upland acres. Conrail has also indicated its willingness to sell between 40 and 72 riparian acres. The cost of the upland acreage is estimated at $750,000 to $1,200,000 an acre (subject to the receipt of an appraisal). The cost of the riparian acreage is subject to appraisal and negotiation. It is staff's intent to recommend purchase of the 44 upland acres and up to 72 riparian acres. In anticipation of Conrail's acquisition of the leasehold for the properties at Oak Island Yard, New Jersey, Conrail also would like to discuss funding for the Phase II of regional rail enhancements, concurrent with the property negotiations. Although authorization is being sought to negotiate a Contract of Purchase and Sale for the Conrail Property, such purchase, as well as any Port Authority commitment for Phase II regional rail enahancements, would be the subject of further Board authorization.

Due to the sensitive nature of the matters being negotiated, the actions being authorized will remain confidential until the Port Authority exercises the right of first refusal and executes all necessary agreements and contracts to purchase the Company.

Pursuant to the foregoing report, the following resolution was adopted in executive session with Commissioners Bauer, Blakeman, Chasanoff, Coscia, Ferer, Holmes, Mack, Pocino, Sartor and Silverman voting in favor; none against; Commissioner Steiner recused:

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, subject to prior approval of the Chairman of the Committee on Operations, to enter into an assignment agreement with Consolidated Rail Corporation (Conrail), whereby Conrail will assign to the Port Authority all of Conrail's rights and obligations with respect to a "right of first refusal" to purchase the New York New Jersey Rail Corporation LLC on the terms and conditions of Conrail's right of first refusal, at a price not to exceed $20 million, so that the Port Authority might exercise the right of first refusal before such right expires; and it is further

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, subject to prior approval of the Chairman of the Committee on Operations, to enter into a Letter of Intent, Term Sheet and Exclusivity Agreement with Conrail authorizing the Port Authority to negotiate a Contract of Purchase and Sale for the purchase of certain property located in Jersey City, New Jersey, with the final sale to be subject to further action by the Board; and it is further

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, subject to prior approval of the Chairman of the Committee on Operations, to take any and all action necessary to effectuate the foregoing, including the execution of agreements, contracts and other documents to facilitate such action, together with amendments and supplements thereof, including amendments and supplements to existing agreements, and to take action in accordance with the terms of such agreements, contracts and other documents, as may be necessary in connection therewith; and it is further

RESOLVED, that the form of all agreements, contracts and other documents in connection with the foregoing shall be subject to the approval of General Counsel or his authorized representative.

GREENVILLE YARD-PORT AUTHORITY MARINE TERMINAL – REGIONAL GOODS MOVEMENT IMPROVEMENT PROGRAM - DEVELOPMENT OF THE NEW YORK-NEW JERSEY RAIL FLOAT SYSTEM – PROJECT AUTHORIZATION

It was recommended that the Board authorize: (1) a project (Project) to put the New York-New Jersey Rail Float System (Float System) on a more efficient and reliable footing, at an estimated cost of $118.1 million, by effectuating the acquisition of certain real property, making certain improvements to rail facilities, and refining the design and layout of the Greenville Yard, including the provision of facilities for the transportation and transloading of containerized municipal solid waste (CMSW); and (2) the Executive Director to: (a) take such actions as are necessary to effectuate the Project, including the expenditure of federal earmark and other grant funding in support of the Project; the execution of an interim operating agreement with New York City Economic Development Corporation (NYCEDC), subject to the approval of the Chair of the Committee on Operations, for development of the 51st Street Rail Terminal and 65th Street Rail Terminal in Brooklyn, New York, and such other contracts, leases and operating agreements as he deems necessary and appropriate in order to effectuate the Project; and provide an appropriate governance structure for the New York New Jersey Rail, LLC (Rail LLC), consistent with the governance structure required of wholly owned entities of the Port Authority; and (b) negotiate the terms of an agreement(s) with the City of New York, a third-party operator and others to design, construct, and operate rail facilities for the transportation of CMSW. The authorized actions would be undertaken by the Port Authority and/or through its wholly owned entities or subsidiaries, including, but not limited to, Rail LLC or the New York and New Jersey Railroad Corporation.

At its meeting of October 18, 2007, the Board authorized a multi-modal Regional Goods Movement Improvement Program for: the development of comprehensive long-term plans to facilitate and improve the movement of goods into and through the Port District; the assumption of the local sponsorship of the Environmental Impact Statement (EIS) for the Cross Harbor Freight Movement Project (CHFMP); responsibility for conducting the EIS; and the acceptance of up to $100 million in federal earmarked funds for CHFMP-related freight studies and investments. The real property acquisition and facility improvements to the Float System that would be authorized under the current action are among the CHFMP projects contemplated in the federal earmark, and, as such, earmarked funds are available to reimburse the Port Authority for the costs of such projects, subject to a 20-percent local match requirement.

At its meeting of August 14, 2008, the Board authorized the purchase of Rail LLC at a price not to exceed $20 million. Rail LLC is wholly owned by the Port Authority and is the operator of the only cross-Hudson River rail service in the Port District, and operates rail car barge service between Brooklyn and Greenville Yard in Jersey City, New Jersey. The purchase of Rail LLC included the lease of approximately 27 acres at Greenville Yard from Consolidated Rail Corporation (Conrail), operating rights at the 51st Street Bush Terminal in Brooklyn, and rights to purchase certain property and riparian rights owned by Conrail at Greenville Yard.

The proposed authorization would improve the operations of the Float System and lay the groundwork for a unique and fully integrated intermodal facility at Greenville Yard.

Because of decades of neglect under prior ownership, the Float System has been underutilized and is in need of repair to make the facilities safe, reliable and efficient. To maximize the use of the Float System, it is necessary to finalize and execute the purchase of property at Greenville Yard from Conrail (approximately 47 upland acres and up to 72 acres of riparian rights), and to shift barge service operations in Brooklyn from the 51st Street/Bush Terminal Railyard to the 65th Street Railyard. Finally, to fully realize the potential of Greenville Yard as an integrated freight facility, it is desirable to refine and revise the design and layout of the yard to include accommodation of an intermodal container transfer facility (ICTF), similar to existing Port Authority ExpressRail facilities, for the transfer of containers from oceangoing vessels to rail, along with a lift-on/lift-off facility for transferring containerized cargo from barges to rail, including CMSW. In each case, containers would be loaded directly onto railcars and moved along the national rail freight network without the need for costly drayage to truck-to-rail transloading sites. Facilities for the movement of CMSW would allow municipal solid waste to be transported by barge in sealed containers from New York City to Greenville Yard, and then transferred to rail for shipment to disposal sites, instead of transporting the waste by truck. The Float System, the ICTF, and facilities for the movement of CMSW would complement and support each other by utilizing certain common trackage and rail infrastructure at Greenville Yard.

The August 14, 2008 authorization of the purchase of Rail LLC required that capacity enhancements involving CMSW be resubmitted to the Board for further approval. The New York City Department of Sanitation (NYCDOS) is currently conducting a competitive procurement process for long-term services to ship and dispose of the City's municipal solid waste. NYCDOS envisions shipping the waste in sealed, watertight containers by barge from various in-City marine transfer stations to transloading sites, where the containers would be loaded directly onto railcars and then shipped by rail to disposal sites outside of New York City. Staff has been contacted by several bidders in the NYCDOS procurement process, which have expressed interest in moving CMSW through the Greenville Yard. Rail shipment of containerized commodities, including CMSW, is a growing and potentially significant business nationwide, and development of appropriate barge-to-rail transfer facilities at Greenville Yard would allow the Port Authority to capture a sizeable portion of this business. Such development would also have the benefit of reducing truck traffic and associated congestion on area highways and improving air quality in the region, through reduced air emissions from fewer trucks.

The Executive Director would negotiate the terms of an agreement with, a third-party operator capable of designing, constructing, and operating appropriate CMSW transloading facilities at Greenville Yard. The Executive Director would request further authorization from the Board prior to entering into any such agreement.

With the availability of a federal earmark and other federal and state funding for railcar float infrastructure improvements, there is a unique opportunity to develop this important freight corridor, which would allow a higher volume of goods and material movement while significantly lowering the environmental impact of such operations through a reduction in truck traffic, roadway congestion, and air emissions. In addition, development of barge-to-rail transloading infrastructure would open up another potentially significant source of business for the Port Authority (coupled with Port Authority support of The City of New York's Long-term Solid Waste Management Plan).

Pursuant to the foregoing report, the following resolution was adopted with Commissioners Bauer, Chasanoff, Coscia, Grayson, Holmes, Moerdler and Pocino voting in favor; none against; Commissioners Sartor and Steiner recused:

RESOLVED, that a project (Project) to put the New York-New Jersey Rail Float System (Float System) on a more efficient and reliable footing, at an estimated cost of $118.1 million, by completing any actions necessary to comply with federal or state environmental review laws, improving, rehabilitating, and developing Float System facilities, and, subject to the approval of the Chair of the Committee on Operations, consummating the purchase of certain real property and riparian rights at Greenville Yard, as described in the foregoing report, be and it hereby is authorized; and it is further

RESOLVED, that in designing and implementing the Project, sufficient allowance be made in the design and layout of Greenville Yard to accommodate the design, construction, and operation of additional facilities for the transloading and transportation of containerized municipal solid waste, and for the integration of such facilities with the other freight activities being conducted at Greenville Yard; and it is further

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, in connection with the implementation of the foregoing Project, to: (1) expend federal earmark and other federal and state grant funding in support of such Project; (2) provide for an appropriate governance structure for New York New Jersey Rail, LLC; and (3) subject to the approval of the Chair of the Committee on Operations, enter into an interim operating agreement(s) with New York City Economic Development Corporation or others for the development and use of the 51st Street Rail Terminal and 65th Street Terminal in Brooklyn, New York; and it is further

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, to negotiate the terms of an agreement(s) with the City of New York, a third-party operator and others to design, construct, and operate facilities for the transloading and transportation of containerized municipal solid waste at Greenville Yard, subject to further authorization from the Board prior to entering into any such agreement; and it is further

RESOLVED, that the foregoing authorized actions be undertaken by the Port Authority and/or through any of its wholly owned entities or subsidiaries, including, but not limited to, New York New Jersey Rail, LLC, and the New York and New Jersey Railroad Corporation; and it is further

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, to take any all other actions necessary to effectuate the foregoing Project, including the execution of agreements, contracts and other documents to facilitate such actions, together with amendments and supplements thereof, including amendments and supplements to existing agreements, and to take action in accordance with the terms of such agreements,

contracts, and other documents as may be necessary in connection therewith; and it is further

RESOLVED, that the form of all contracts and agreements in connection with the foregoing Project shall be subject to the approval of General Counsel or his authorized representative.

GREENVILLE YARD–PORT AUTHORITY MARINE TERMINAL – REDEVELOPMENT – PROGRAM AUTHORIZATION AND AWARD OF CONTRACTS

It was recommended that the Board: (1) authorize a program to provide for the redevelopment of the Greenville Yard-Port Authority Marine Terminal (Greenville Yard) into a modern, multi-modal freight rail terminal (Program), at a total estimated cost of $356 million, of which the Port Authority would contribute approximately $320 million, and approximately $36 million would be contributed by the Consolidated Rail Corporation (Conrail) and Global Terminal and Container Services, LLC (Global), with specific elements of the Program to include: (a) the final design and construction of an Intermodal Container Transfer Facility (ICTF), at a total project cost to the Port Authority of approximately $149 million, which cost is included within the proposed Program authorization, and with such costs to be fully recoverable through the Cargo Facility Charge (CFC), pursuant to the Marine Terminal Tariff – Federal Maritime Commission Schedule No. PA-10 (Marine Terminal Tariff), with Global to contribute an additional amount of approximately $15 million for the procurement and installation of rail-mounted gantry cranes at the ICTF; (b) reauthorization of a project to stabilize and improve the New York-New Jersey Rail, LLC (NYNJR) cross-harbor carfloat system (NYNJR Float System Project), including an estimated increase of $14.9 million in project cost, from $118.1 million to a total estimated cost of $133 million, which cost is included within the proposed Program authorization, and of which a minimum of approximately $80 million would be reimbursed to the Port Authority through federally earmarked funds and other grants; and (c) the design, construction and installation of certain offsite rail improvements in northern New Jersey by Conrail, in order to ensure that the redeveloped Greenville Yard functions smoothly and efficiently, at a total estimated cost of $59 million, which cost is included within the proposed Program authorization, and of which the Port Authority would provide a payment of up to $38 million to Conrail for such improvements and Conrail would cover the balance of the cost of such improvements; (2) make the necessary findings and determinations to enable the Port Authority to acquire, by agreement, condemnation or eminent domain, certain property interests or rights located in the vicinity of Greenville Yard, Jersey City, New Jersey that may be required to support the Program; (3) authorize the Executive Director and General Counsel, either one acting individually, to acquire, for and on behalf of the Port Authority, by agreement, condemnation or eminent domain, pursuant to applicable law, the required property interests or rights for the Program, to enter into all agreements necessary to effectuate such acquisition, and to incur all costs and expenses and execute all documents and agreements, involving, among other matters, due diligence activities, subdivision of properties, environmental studies, subsurface remediation, repairs, removal of structures, appraisals, surveys, title searches, and title insurance necessary or incidental to acquire any property interests or to effectuate the Program; and (4) authorize the Executive Director to: (a) enter into an agreement with Global for the operation and maintenance of the ICTF; (b) award Contract PJ-664.503 for the Redevelopment of Greenville Yard-Port Authority Marine Terminal Phase I, at an estimated construction cost of $129 million, inclusive of an eight-percent extra work allowance; (c) enter into agreements with Conrail to provide for, among other things, the extension of the term of the current lease between Conrail and NYNJR for an additional 40-year period from the date of execution of the lease extension, the reconfiguration of the current leasehold thereunder, and the letting of additional property under a new lease; (d) enter into agreements with Conrail with respect to the construction, operation and maintenance of railroad infrastructure improvements within Greenville Yard and the payment to Conrail of an amount of up to $38 million for the construction of off-site improvements; (e) award Contract NYNJRR-644.531 for Transfer Bridge #10 Reconstruction at Greenville Yard Terminal in Jersey City, New Jersey and Fender Modifications at 65th Street Yard Terminal in Brooklyn, New York, at an estimated

construction cost of $32 million, inclusive of an eight-percent extra work allowance; (f) increase the amount of a contract with Henningson, Durham & Richardson Architecture and Engineering, P.C. from $13,513,744 to $14,443,744, which is reimbursable through federally earmarked funds, subject to a 20-percent local match by the Port Authority, to provide for the completion of expert professional engineering services in connection with the Program; (g) enter into an agreement with Public Service Electric and Gas Company, at a cost to the Port Authority of approximately $1.5 million, providing for the relocation of a gas line at Greenville Yard, which cost is included within the proposed Program authorization; and (h) award and/or enter into all such other agreements as may be necessary to effectuate the Program.

The Program consists of three elements. The first element consists of construction of an ICTF at Greenville Yard. At its meeting of April 30, 2009, the Board authorized the acquisition of approximately 100 acres of property owned by Global, located on the Port Jersey Channel in Bayonne/Jersey City, and a new 37-year lease with Global for the 100-acre parcel and the adjacent approximately 70 acres of property at the Port Jersey-Port Authority Marine Terminal (Port Jersey) for the development of a new container terminal facility.

Pursuant to its lease agreement with Global, the Port Authority is obligated to design and construct an operational ICTF at Greenville Yard with a minimum capacity of 125,000 container lifts annually, to be known as ExpressRail Port Jersey, by July 1, 2014. Because this deadline has not been met, the rent payable by Global under the lease is subject to reduction. Completion of Phase I of the ICTF, which would provide such minimum capacity, is now anticipated to occur on or about July 2016.

At its meeting of October 21, 2010, the Board authorized planning and preliminary design work for the ICTF, at an estimated total amount of $3 million. Early-action pre-construction work was authorized by the Board subsequently on October 20, 2011, at an estimated total amount of $13.8 million. Under the currently proposed authorization, the full build-out of the ICTF would be achieved in two phases, at a cost currently estimated at $149 million, inclusive of the aforementioned previously authorized funds. Work would include the construction of approximately 10,000 linear feet of working track, 32,000 linear feet of support track and switches, paved container transfer space, and infrastructure to support rail-mounted gantry cranes and rail operations. All costs associated with the construction of the ICTF are fully recoverable through the CFC, pursuant to the Marine Terminal Tariff. The implementation of the ICTF project is contingent on the continued existence of the CFC, which is expected to cover the cost of the project. Global would contribute approximately $15 million for the procurement and installation of rail-mounted gantry cranes at the ICTF. The Port Authority would enter into an agreement with Global for the operation and maintenance of the ICTF, which is anticipated to be coterminous with Global's lease for its container terminal facility at Port Jersey.

The Program's second element relates to a series of improvements to the cross-harbor carfloat system operated by NYNJR. At its meeting of October 18, 2007, the Board authorized a multi-modal Regional Goods Movement Improvement Program, including the development of a comprehensive long-term goods movement plan and assumption of the local sponsorship for, and completion of, an Environmental Impact Statement (EIS) for the Cross Harbor Freight Movement Project (CHFMP), and the acceptance of up to $100 million in federal funds earmarked for the Port Authority for CHFMP-related freight studies or investments. The earmarked funds are available to reimburse the Port Authority for eligible rail float system project costs and are subject to a 20-

percent local match requirement. Expenditures under that authorization were limited to $10 million for completion of the EIS. At its meeting of August 14, 2008, the Board authorized the purchase by the Port Authority of NYNJR and its operations. NYNJR, now wholly owned by the Port Authority, is the operator of the only cross-Hudson River rail service in the Port District, transporting rail cars via barge (carfloat) between Greenville Yard and the 65th Street Yard in Brooklyn.

The carfloat system requires extensive upgrades and improvements. At its meeting of May 18, 2010, the Board authorized the NYNJR Float System Project, at an estimated total cost of $118.1 million, of which approximately $89 million was reimbursable to the Port Authority through federally earmarked funds and other grants. The project provided for: the purchase of certain real property and riparian rights at Greenville Yard from Conrail; improving, rehabilitating and developing carfloat system facilities operated by NYNJR; and improving Greenville Yard.

Staff concluded that instead of purchasing the real property from Conrail, the NYNJR Float System Project would be better served by extending the term of the existing lease for the property, so that it has an additional 40 years to run from the date of execution of the lease extension. A lease would establish a degree of site control that satisfies federal requirements for reimbursement, and would ensure the long-term availability of Greenville Yard as a rail freight transportation asset. Damage from Hurricanes Irene and Sandy resulted in the need for additional funds to construct new infrastructure, as opposed to stabilizing and upgrading existing facilities. The scope of the NYNJR Float System Project has been revised to include: construction of up to two new transfer bridges (including fendering systems and support tracks) at Greenville Yard; work at the 65th Street lift bridges in Brooklyn; construction and purchase of two larger carfloats; and the purchase of up to four new, ultra-low-emissions locomotives. Under the reauthorized NYNJR Float System Project, the funding amount would be increased by $14.9 million, for a revised total project cost of approximately $133 million, of which amount a minimum of approximately $80 million would be reimbursable to the Port Authority through federally earmarked funds and other grants. In order to construct the ICTF, the NYNJR Float System Project must be advanced at the same time, so that various carfloat facilities are moved and rebuilt, making room for construction of the ICTF and its support tracks.

The Program's third element provides for the design, construction and installation of certain offsite rail improvements in northern New Jersey by Conrail, in order to ensure that the redeveloped Greenville Yard functions smoothly and efficiently, at a total estimated cost of $59 million. The Port Authority would reimburse Conrail up to $38 million for the cost of such improvements, and Conrail would cover the balance of the costs associated with the work.

Pursuant to the foregoing report, the Board adopted the following resolution, with Commissioners Bagger, Degnan, Laufenberg, Lipper, Lynford, Rechler and Schuber voting in favor; Commissioners Moerdler and Steiner recused and did not participate in the consideration of, or vote on, this item. General Counsel confirmed that sufficient affirmative votes were cast for the action to be taken, a quorum of the Board being present.

RESOLVED, that a program to provide for the redevelopment of the Greenville Yard-Port Authority Marine Terminal (Greenville Yard) into a modern, multi-modal freight rail terminal (Program), at a total estimated cost of $356 million, of which the Port Authority would contribute approximately $320 million, and approximately $36 million would be contributed by the Consolidated Rail Corporation (Conrail) and Global

Terminal and Container Services, LLC (Global), with specific elements of the Program to include: (1) the final design and construction of an Intermodal Container Transfer Facility (ICTF) to improve the flow of goods to and from the Port of New York and New Jersey, and in accordance with the lease agreement with Global, at a total project cost to the Port Authority of approximately $149 million, which cost is included within the proposed Program authorization and which includes a total of $16.8 million in previously authorized Port Authority funds, with the Port Authority's costs to be fully recoverable through the Cargo Facility Charge, pursuant to the Marine Terminal Tariff – Federal Maritime Commission Schedule No. PA-10, with Global to contribute an additional amount of approximately $15 million for the procurement and installation of rail-mounted gantry cranes at the ICTF; (2) reauthorization of a project to stabilize and improve the New York-New Jersey Rail, LLC (NYNJR) cross-harbor carfloat system, including an estimated increase of $14.9 million in project cost, from $118.1 million to a total estimated cost of $133 million, which cost is included within the proposed Program authorization and of which a minimum of approximately $80 million will be reimbursed to the Port Authority through federally earmarked funds and other grants; and (3) design, construction and installation of certain offsite rail improvements in northern New Jersey by Conrail, in order to ensure that the redeveloped Greenville Yard functions smoothly and efficiently, at a total estimated cost of $59 million, which cost is included within the proposed Program authorization, and of which the Port Authority will provide a payment of up to $38 million to Conrail for such improvements, and Conrail will cover the balance of the cost of such improvements; be and it hereby is authorized; and it is further

RESOLVED, that it is hereby found and determined that it is necessary, convenient and desirable for a public use and for marine terminal purposes and purposes incidental thereto for the Port Authority to acquire fee simple absolute title to, or lesser property interests and rights in, all or a part of the real property shown as Block 3401, Lots 8, 9, and 1 (formerly, Block 1507, Lots 28, 33, and 35) on the tax maps of the City of Jersey City, County of Hudson, State of New Jersey (collectively, the Tax Lots), and in such other lands generally located in the vicinity of Greenville Yard, Jersey City, New Jersey as may be required to support the Program within or adjacent to the right of way shown on the map attached hereto, the boundaries of which will be subject to, at the time of acquisition, a more precise description prepared by a licensed land surveyor; and it is further

RESOLVED, that the Executive Director and General Counsel, either one acting individually, be and they hereby are authorized to acquire, for and on behalf of the Port Authority, the property interests and rights in the Tax Lots and the lands generally located in the vicinity of Greenville Yard, Jersey City, New Jersey as may be required to support the Program within or adjacent to the right of way shown on the map attached hereto, which were found and determined by the Board as being necessary, convenient or desirable to be acquired for a public use and marine terminal purposes and purposes incidental thereto, by agreement, condemnation or eminent domain, pursuant to applicable law, to enter into all agreements necessary to effectuate such acquisition, and to incur all costs and expenses and execute all documents and agreements, involving, among other matters, due diligence activities, subdivision of properties, environmental studies, subsurface remediation, repairs, removal of structures, appraisals, surveys, title searches, and title insurance necessary or incidental to acquire any property interests or

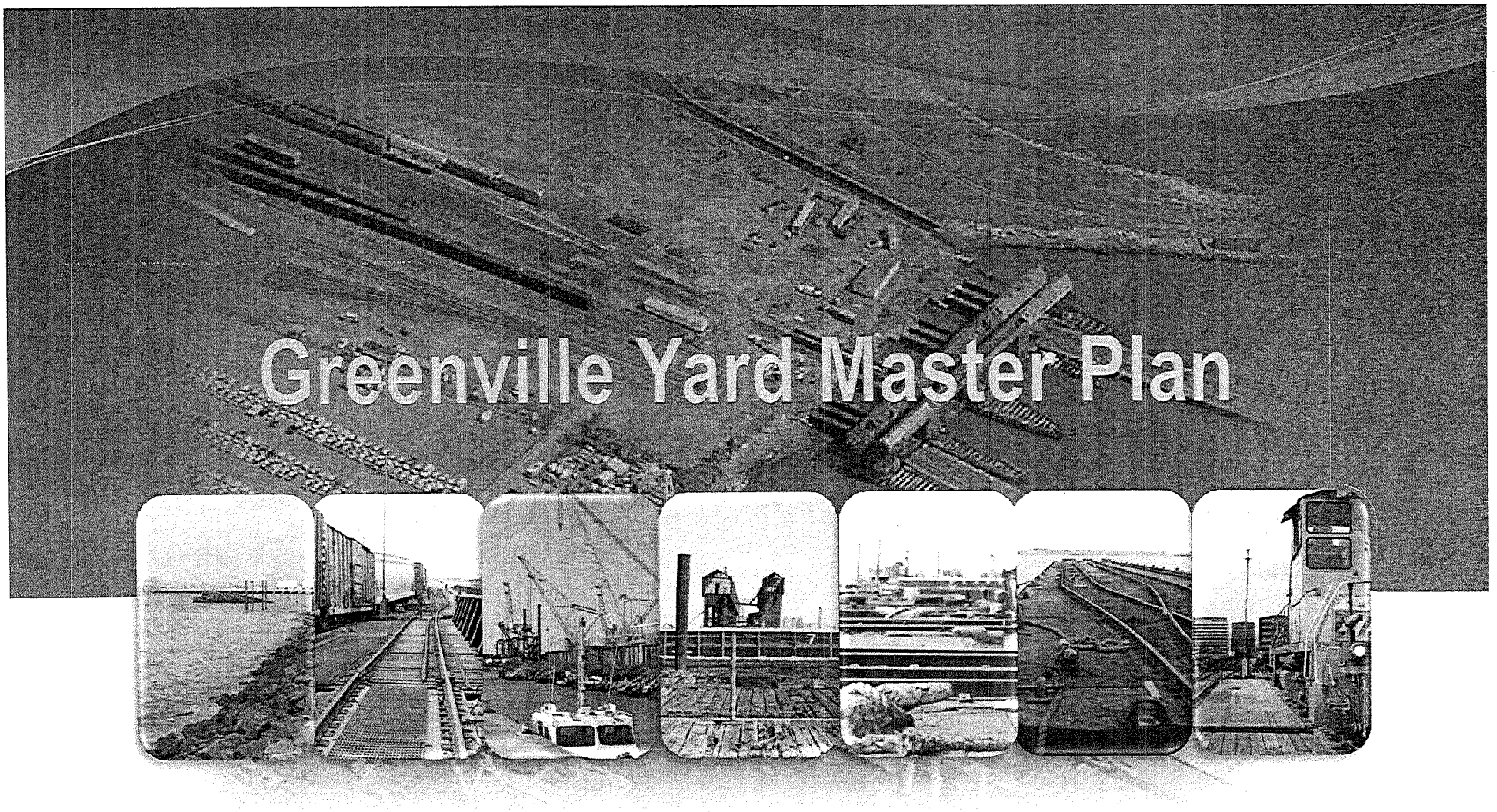
to effectuate the Program; and it is further

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, to: (1) enter into an agreement with Global for the operation and maintenance of the ICTF; (2) award Contract PJ-664.503 for the Redevelopment of Greenville Yard-Port Authority Marine Terminal Phase I, at an estimated construction cost of $129 million, inclusive of an eight-percent extra work allowance; (3) enter into agreements with Conrail to provide for, among other things, the extension of the term of the current lease between Conrail and NYNJR for an additional 40-year period from the date of execution of the lease extension, the reconfiguration of current leasehold thereunder, and the letting of additional property under a new lease; (4) enter into agreements with Conrail with respect to the construction, operation and maintenance of the railroad infrastructure improvements within Greenville Yard, and the payment to Conrail of an amount of up to $38 million for the construction of off-site improvements; (5) award Contract NYNJRR-644.531 for Transfer Bridge #10 Reconstruction at Greenville Yard Terminal and Fender Modifications at 65th Street Yard Terminal in Brooklyn, New York, at an estimated construction cost of $32 million, inclusive of an eight-percent extra work allowance; (6) increase the amount of a contract with Henningson, Durham & Richardson Architecture and Engineering, P.C. from $13,513,744 to $14,443,744, which will be reimbursable through the earmarked federal funds, subject to a 20-percent local match by the Port Authority, to provide for the completion of expert professional engineering services in connection with the Program; (7) enter into an agreement with Public Service Electric and Gas Company providing for the relocation of a gas line at Greenville Yard, at a cost to the Port Authority of approximately $1.5 million; and (8) award such other contracts and/or enter into such other agreements as may be necessary to effectuate the Program; and it is further

RESOLVED, that the Executive Director be and he hereby is authorized, for and on behalf of the Port Authority, to take action with respect to construction contracts, contracts for professional and advisory services and such other contracts and agreements as may be necessary to effectuate the foregoing Program; and it is further

RESOLVED, that the foregoing authorized actions may be undertaken by the Port Authority in its own name and/or through any of its related entities; and it is further

RESOLVED, that the form of all documents and agreements in connection with the foregoing Program shall be subject to the approval of General Counsel or his authorized representative.



Development Presentation
December 4th, 2009

TranSystems

THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

Existing Greenville Yard: 2009

TranSystems

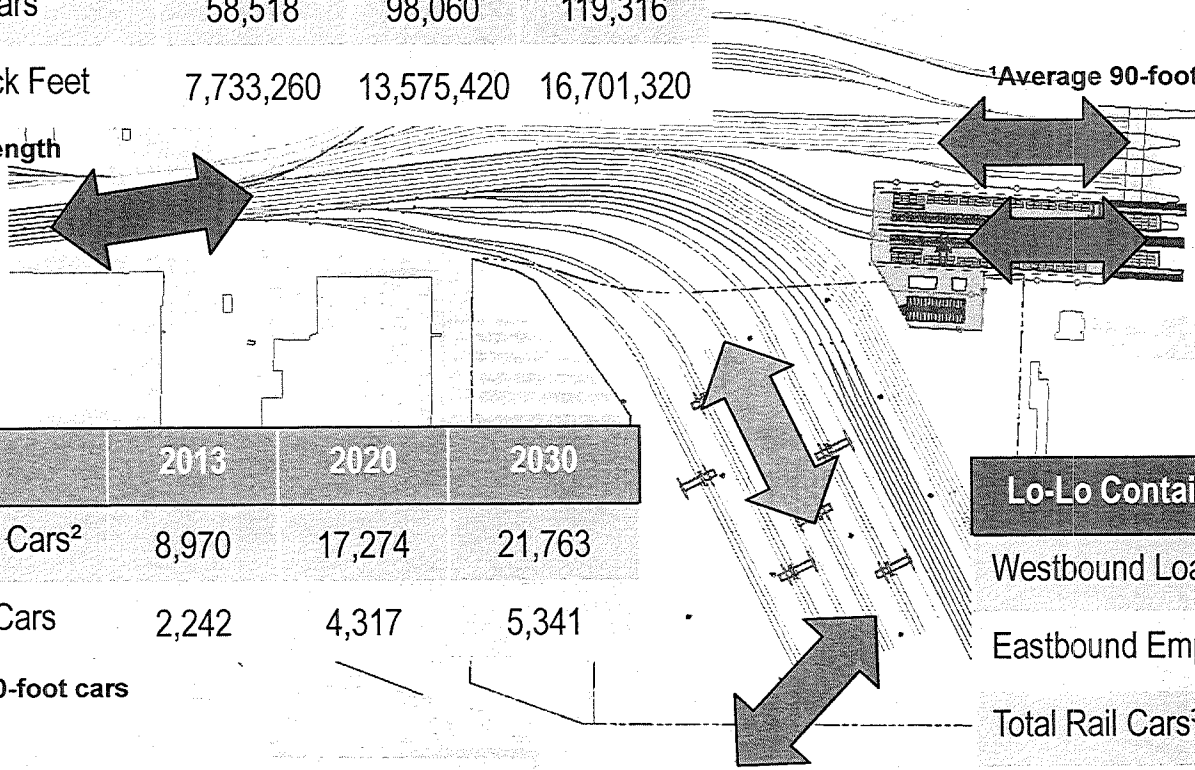
THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

Traffic Flow – Annual Summary

Transiting "A" Yard	2013	2020	2030
Total Rail Cars*	58,518	98,060	119,316
Annual Track Feet	7,733,260	13,575,420	16,701,320

*Mixed car length

[1]Average 90-foot cars



ICTF	2013	2020	2030
Loaded Rail Cars[2]	8,970	17,274	21,763
Empty Rail Cars	2,242	4,317	5,341

[2]Average 310-foot cars

Lo-Lo Containers	2013	2020	2030
Westbound Loads	45,812	94,930	110,170
Eastbound Empties	45,812	94,930	110,170
Total Rail Cars[3]	22,906	47,465	55,085

[3]Average 90-foot cars

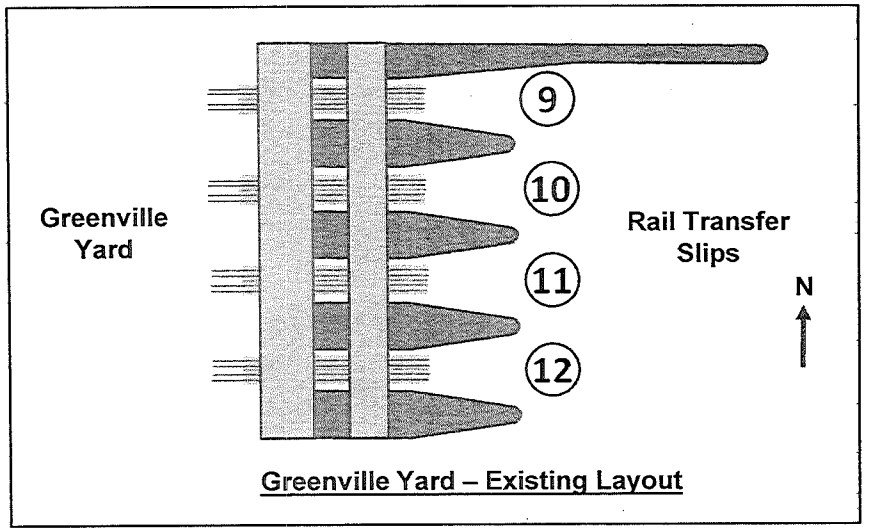
Global Marine Term.	2013	2020	2030
Containers	84,714	163,148	201,763

Rail Transfer Bridge:

Float Bridge Rail Cars[1]	2013	2020	2030
Containers	18,300	21,753	27,845
Merchandise	6,100	7,251	9,282

Key Drivers:

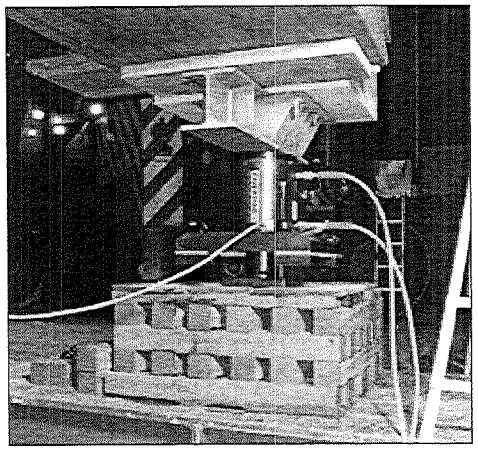
- Accommodate larger rail barges
- Anticipate increases in demand
- Minimize permit issues
- Meet grant requirements
- Reconstruct on existing site
- Develop in phases
- Incorporate flexible / efficient technology



Greenville Yard – Existing Layout

Design Alternatives Considered:

- Bridge Gantry: $4.5 Million
- Hydraulic Lift: $4 Million
- Pontoon: $6.8 Million


Hydraulic Lift Principle

Rail Transfer Bridge Design

The hydraulic rail transfer bridge option is recommended for the following reasons:

- Hydraulic operation is highly controllable and can be adjusted under full load.
- Hydraulic operation will permit an articulated bridge that is designed to minimize "high-center" allisions at the hinge points.
- A hydraulic system is cost effective and uses equipment that is common to other industrial applications.
- A hydraulic system can be installed at the existing slips without removing the gallows frame structure or dredging beneath the bridge.

Rail Float Cost Estimate - Slip 10 Rail Bridge

SUMMARY
Conceptual Construction Budget Estimate

Greenville Yard Rail Float Bridge
Cross Harbor Rail Float 10

CONSTRUCTION COST		
SITE WORK		$2,803,000
UTILITIES		$1,967,000
TRANSFER BRIDGE		$3,923,000
WATERFRONT AREA		$1,921,000
BUILDINGS & STRUCTURES		$277,000
SUBTOTAL, CONSTRUCTION COST		**$10,891,000**
DEVELOPMENT FEES		
DESIGN FEE	7%	$763,000
PERMITTING AND GEOTECHNICAL FEE	3%	$327,000
CONSTRUCTION ADMINISTRATION FEE	3%	$327,000
MOBILIZATION	3% (To a maximum of $500,000)	$326,730
CONSTRUCTION COST CONTINGENCY	30%	$3,791,000
TOTAL CONSTRUCTION COST BUDGET ESTIMATE (not including operating equipment)		**$16,425,730**

Rail Float Cost Estimate - Slip 10 Support Tracks

SUMMARY
Conceptual Construction Budget Estimate

Greenville Yard Rail Float Bridge
Cross Harbor Rail Float 10

CONSTRUCTION COST			
SITE WORK			$868,000
RAIL			$6,549,000
UTILITIES			$1,097,000
SUBTOTAL, CONSTRUCTION COST			**$8,514,000**
DEVELOPMENT FEES			
DESIGN FEE	7%		$596,000
PERMITTING AND GEOTECHNICAL FEE	3%		$256,000
CONSTRUCTION ADMINISTRATION FEE	3%		$256,000
MOBILIZATION	3%	(To a maximum of $500,000)	$255,420
CONSTRUCTION COST CONTINGENCY	30%		$2,964,000
TOTAL CONSTRUCTION COST BUDGET ESTIMATE (not including operating equipment)			**$12,841,420**

A. PROJECT DESCRIPTION

The following is a complete list of the elements of Cross Harbor Project, Project Identification Number (PIN) X500.491.121, which is the subject of the analysis in this National Environmental Policy Act (NEPA) document:

GREENVILLE YARD LOCATION

- Purchase of up to two replacement lift bridges
- New Fenders at the replacement lift bridges
- On-bridge operator control station
- Support tracks to connect up to two lift bridges to the rail network
- Raising the elevation of the yard from 5 NAVD to 9 NAVD
- Drainage, lighting and security improvements within the yard
- Purchase of two carfloats, each with four tracks
- Dredging as needed to accommodate new carfloats
- Purchase of up to two ultra-low emission locomotives
- Relocation of tracks currently used by adjacent Tropicana Facility

65TH STREET YARD LOCATION

- Track work
- Dredging as needed to accommodate new carfloats
- Purchase of up to two ultra-low emission locomotives
- Reconstruction of existing fendering system

This re-evaluation documents the potential effects of those elements of the Cross Harbor Project (proposed project) that have been updated or revised since the completion of prior Categorical Exclusion documents for the proposed project and assesses the potential effects of those revised or new project elements.

Specifically, this re-evaluation documents the potential effects of the following, relative to the conclusions of the previous Categorical Exclusion designations:

- Long-term lease (instead of purchase) of portions of Greenville Yard, Jersey City, NJ, which would be used primarily for the cross-harbor railcar float system operated by New York

New Jersey Rail, LLC (NYNJR; i.e., Cross Harbor). Unlike other elements of the Project Description mentioned above, the lease would not be federally funded.

- Additional site work and track improvements on the portion of Greenville Yard that would be used for Cross Harbor;
- Design and construction of an additional replacement carfloat;
- Procurement of up to four ultra-low emission locomotives, as replacement for two existing locomotives that are inefficient and have become functionally obsolete; and
- Track rehabilitation and fender system modifications at 65th Street Yard, Brooklyn, NY.

To allow the railcar float operation to achieve a throughput capacity at Greenville of up to 23,000 revenue freight cars per year, while preserving the potential for further development of additional freight facilities on the Greenville peninsula in the future , tracks currently used by an existing Tropicana facility to the north of the Project site would have to be relocated. The relocation of these tracks would be funded separately from the proposed project, but due to the relationship between relocation of the Tropicana tracks and preserving both the option of further development and the achievement by Cross Harbor of its targeted throughput capacity at Greenville, the potential environmental effects of the Tropicana tracks relocation are considered in this document.

B. PROJECT BACKGROUND

The Port Authority of New York and New Jersey (PANYNJ) is advancing the Cross Harbor Freight Program with the goal of improving goods movement across New York Harbor. As part of the overall environmental review process for the Program, PANYNJ, acting as co-lead agency with the Federal Highway Administration (FHWA), is preparing a Tier I Environmental Impact Statement (EIS) to evaluate alternatives—various mode, alignment, and termini combinations—that would provide short-term and long-term strategies for improving the regional freight network, reducing traffic congestion, improving air quality, and providing economic benefits.

Parallel to the preparation of the EIS, and as part of the overall Cross Harbor Freight Program, PANYNJ is undertaking several near- term freight network improvements in various locations in New York and New Jersey, including the rehabilitation and improvement of Greenville Yard in Jersey City, New Jersey (proposed project). This re-evaluation statement considers changes to the proposed project subsequent to the completion of *Categorical Exclusion for the Acquisition of Private Property and Replacement of Greenville Yard Lift Bridge* (CatEx 1B; March 2011)[1]. This re-evaluation has been prepared in accordance with 23 CFR§ 771.117 and 23 CFR§ 771.129 to determine whether the conclusions of the previous Categorical Exclusion designation remain valid or whether any additional environmental analysis is needed.

As set out in Federal Highway Administration (FHWA) regulations, 23 CFR 771.117 states that:

> (a) Categorical exclusions (CEs) are actions which meet the definition contained in 40 CFR 1508.4, and, based on past experience with similar actions, do not involve significant

[1] PIN X500.491.121

> environmental impacts. They are actions which: do not induce significant impacts to planned growth or land use for the area; do not require the relocation of significant numbers of people; do not have a significant impact on any natural, cultural, recreational, historic or other resource; do not involve significant air, noise, or water quality impacts; do not have significant impacts on travel patterns; or do not otherwise, either individually or cumulatively, have any significant environmental impacts.

As set out in FHWA regulations, 23 CFR 771.129 states that:

> After approval of the ROD, Finding of No Significant Impact (FONSI), or Categorical Exclusion (CE) designation, the applicant shall consult with the Administration prior to requesting any major approvals or grants to establish whether or not the approved environmental document or CE designation remains valid for the requested Administration action. These consultations will be documented when determined necessary by the Administration.

In addition to the aforementioned regulations, PANYNJ will adhere to all pertinent environmental regulations, including Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. It is anticipated that the Section 106 consultation process currently being carried out for Greenville Yard Lift Bridge will serve as sufficient consultation with NJHPO; separate consultation with New York State Historic Preservation Office will be required for 65th Street Yard.

PURPOSE AND NEED

Greenville Yard is the western terminus of the railcar float system operated by New York New Jersey Rail, LLC (NYNJR), a limited liability company which is wholly-owned by PANYNJ. Although there were once dozens of railcar float operations in New York Harbor, as a result of a lack of public interest and private sector financial disinvestment, all of these have been closed or abandoned, with the exception of NYNJR. Its system is currently the only rail freight link across the Harbor.

In the past few years, PANYNJ, from its unique position as a bi-state transportation agency, has taken major steps in securing the future of Greenville Yard, thus ensuring that freight movements on this vital cross-harbor link were maintained, despite the seriously deteriorated condition of the Greenville Yard Lift Bridge and the yard itself. As part of these efforts, in 2008, PANYNJ acquired NYNJR, which operates the railcar float system across New York Harbor, between Greenville Yard in Jersey City, NJ and 65th Street Yard in Brooklyn, NY (see **Figures 1** and **2**).

The purpose of the proposed project is to upgrade and replace the rail infrastructure and marine transfer equipment at NYNJR's Greenville Yard railcar float operation, in order to secure the future of the railcar float operation as a vital cross-harbor freight transfer link operated by PANYNJ. As noted previously, the proposed project elements will allow the railcar operation to achieve a throughput capacity of up to 23,000 revenue freight cars per year.

PREVIOUSLY CONDUCTED ENVIRONMENTAL REVIEW

At the time of the acquisition of the NYNJR operations in 2008, only four slips of the then-existing Greenville Yard Lift Bridge (known as Transfer Bridges #9 through #12) were still present on the site; of those four, only Transfer Bridge #11 was intact enough to operate. Within the past few years, PANYNJ had performed a number of urgent mechanical, structural, and electrical repairs to stabilize Transfer Bridge #11 and to maintain the continuity of freight traffic across the harbor. Since these repairs were funded through FHWA, PANYNJ completed the appropriate NEPA approval documentation to authorize these actions: Categorical Exclusion for Immediate Rehabilitation and Repair[1] (a.k.a. CatEx 1A) was completed in September 2010. In a letter dated September 27, 2010, FHWA concurred that the mechanical and structural repairs to the lift bridge, limited track work, and carfloat repairs covered by CatEx 1A would not induce significant environmental impacts and agreed that the Project met the criteria for a NEPA Class II action (Categorical Exclusion with Documentation). These repairs were begun by the PANYNJ in 2012, however the work was cut short and never completed as a result of Superstorm Sandy.

In the longer term, PANYNJ planned for the replacement of the dilapidated Greenville Yard Lift Bridge with a modern hydraulic bridge. CatEx 1B, completed in March 2011 described the following actions proposed at that time: the acquisition of three parcels making up Greenville Yard (approximately 42 acres); the purchase of a new larger carfloat, specially designed and built for the NYNJR operation; the replacement of Greenville Yard Lift Bridge with a new hydraulic structure; the construction of a new fendering system; and upgrades to track within the rail yard itself. In a letter dated March 18, 2011, FHWA concurred that these actions met the criteria for a Categorical Exclusion with Documentation and would not induce significant environmental impacts, with conditions:

- The Project was expected to have no effect on federally listed threatened and endangered species present near the Project site with the understanding that PANYNJ would adhere to a number of restrictions to the maximum extent practicable, related to in-water work needed for the construction of the replacement hydraulic bridge and fender system.
- During the course of the environmental review, the New Jersey State Historic Preservation Office (NJHPO) determined that the demolition of the Greenville Yard Lift Bridge would have an adverse effect on the State and National Register of Historic Places-eligible Bridge itself, and two of the surrounding historic districts. As a result, PANYNJ and FHWA agreed to develop and implement measures to minimize and mitigate the adverse effect, including recordation of the lift bridge and its component parts to augment previous historic records, and a salvage and relocation plan for components of the lift bridge. These commitments were pledged in a Memorandum of Agreement (MOA) between PANYNJ, FHWA, and NJHPO, signed on March 17, 2011.

Since the signing of the aforementioned MOA, PANYNJ had advanced the actions described in CatEx 1B by engaging a consultant team to design the replacement bridges and yard track layout. PANYNJ has also submitted a draft Salvage and Relocation Plan and Marketing Plan to

[1] PIN X500.391.121

the NJHPO which described the relocation of portions of the lift bridge to an interested site to establish an interpretive exhibit. PANYNJ also engaged a videographer to record the lift bridge in operation so that previous Historic American Engineering Record video could be supplemented with modern footage.

POTENTIAL FURTHER DEVELOPMENT OF THE GREENVILLE YARD

PANYNJ has begun considering further development of Greenville Yard with additional multi-modal freight facilities. This potential further development could include a new facility to transfer containerized municipal solid waste (CMSW) from barges to rail and an Intermodal Container Transfer Facility (ICTF) serving the nearby Global Marine Terminal to transfer international shipping containers between truck and rail (see **Figure 3**). These proposed facilities are not part of the proposed project, have not yet been fully approved or funded by PANYNJ, and may or may not be implemented. None of the elements of the proposed project are dependent upon moving forward with these other facilities, which would have independent utility

For these reasons, the definition of the proposed project does not include potential further development of Greenville Yard as outlined above and the environmental review contained herein considers only the elements of the proposed project (as described in Section A).It is expected that if PANYNJ decides to develop additional freight facilities at Greenville, outside of the scope of the proposed project, environmental review of such actions will occur during the appropriate federal and state permitting processes. However, the definition of the proposed project does include the relocation of Tropicana tracks, as described previously. The incorporation of this relocation into the proposed Cross Harbor track layout at this time would result in a throughput capacity of up to 23,000 revenue railcars per year for the NYNJR railcar float operation, while not precluding potential further development.

SUPERSTORM SANDY

On October 29th and 30th, 2012, Superstorm Sandy came ashore near Atlantic City, New Jersey as a Category 1 hurricane, with reported sustained winds of 80 mph. The hurricane inundated much of coastal New Jersey, and caused a 13-foot storm surge over shorelines in New York Harbor.

Post-storm inspection revealed that the gantries of the Greenville Yard Lift Bridge had shifted considerably (nearly 9 feet), largely due to a buckling of the apron gantry main support columns. Several other support columns lost their concrete footings; bracing members were also weakened by debris impacts (See **Figure 4**, photo a). A contractor's drill barge, moored nearby, was slammed into Bridge #10 by the storm surge and was impaled on the fender piles. The fender system around Bridge #11 and the mooring cells north of the lift bridge were also significantly damaged (See **Figure 4**, photos b and c).

The upland portions of Greenville Yard sustained minimal damage, however the tidal surge deposited a significant amount of debris and caused some local erosion. The office trailers utilized by NYNNJR staff were swept away, and smaller trailers were destroyed. A new electrical house installed at Bridge #11 as part of previous PANYNJ repairs was found intact; however, it suffered serious damage from salt water inundation. Barge #29, the 14-railcar

carfloat used in NYNJR operations and which had been moored nearby for repairs was damaged irreparably and sunk near the south side of Bridge #12, partially blocking access to Bridge #11 (See **Figure 4**, photo d).

The post-Sandy field inspection conducted by the PANYNJ Engineering Department determined that the Greenville Yard Lift Bridge gantry structures would need to be demolished and immediately removed due to extreme life/safety concerns. Prior to the demolition of the transfer bridges on November 19, 2013, the PANYNJ sent letters of notification and emails to the New Jersey Department of Environmental Protection (NJDEP), the U.S. Army Corps of Engineers, FHWA, and NJHPO to advise these agencies of the status of the Greenville Yard assets.

Since, at the time, PANYNJ was still in the process of implementing the provisions of the MOA signed as part of CatEx 1B, PANYNJ requested that it be released from provisions of the MOA requiring salvage and relocation of the lift bridge and its components; PANYNJ committed to completing remaining feasible MOA provisions, such as the HAER package, and continued coordination with NJHPO to find other opportunities to mitigate the adverse impact to the lift bridge and surrounding historic districts from the demolition.

At the 65th Street Yard in Brooklyn, the electrical house, which houses most of the electrical equipment to operate the transfer bridges there was flooded with approximately 4.5 feet of water. Portions of the electrical controls, such as the power panel, were severely damaged. Other components of the operation, such as the bridge winch motors, were removed for service to eliminate the presence of any corrosion or damage. Approximately 200 cubic yards of debris were removed from the yard itself.

EXISTING CONDITIONS

In late December 2012, to restore the operations of NYNJR and to maintain cross-harbor freight transfer capacity, PANYNJ installed a pontoon float bridge at Greenville Yard as a short-term solution. With the permission of the New York State Department of Transportation (who had provided funding for the pontoon bridge), the pontoon float bridge was moved from a former terminus of NYNJR at 51st Street, Brooklyn to Greenville Yard to establish temporary limited service from the former Bridge #11 slip. While the pontoon bridge has allowed NYNJR to resume operations in record time, it is not designed to be a long term improvement. The height of the pontoon bridge cannot be controlled with the same precision as a lift bridge, and the pontoon bridge requires the use of the switch locomotive as a ballasting device, which is inefficient. In addition, a pontoon bridge cannot support extremely heavy loads. The existing operation transfers approximately 1,500 revenue (a.k.a. loaded) railcars per year. Because of this relatively low volume, the frequency of trains and the number of cars per train varies greatly.

The 65th Street Yard transfer bridges, which did not suffer as much structural damage during the storm, were forced to operate on generator power for a number of months after the storm.

C. PROPOSED PROJECT CHANGES

As described in the following sections, PANYNJ proposes to construct a permanent replacement facility at Greenville Yard and bring 65th Street Yard to a state of good repair in order to ensure the long-term sustainability of NYNJR operations. Where appropriate, the differences between the CatEx 1B approved actions and the Project as currently proposed are noted.

PROPOSED OPERATIONS

To ensure operational control and long-term sustainability of the following physical Project elements, PANYNJ will extend its lease of Greenville Yard from Conrail to the year 2053. The boundaries of the leasehold will differ slightly from the collection of parcels identified for purchase in CatEx 1B (see **Figure 5**), as a result of a series of land swaps that PANYNJ will undertake to enable full development of the Greenville yard, including the Cross Harbor near-term improvements and preserve the opportunity for potential further development of the peninsula. These swaps would not result in significant changes to the size of PANYNJ's leasehold. PANYNJ currently leases 26.94 acres; the leasehold would total 27.10 acres after the aforementioned changes. Additionally, to accommodate a more efficient layout of Cross Harbor track, PANYNJ may obtain a small portion of the southeastern corner of the Tropicana property. This land totals approximately 0.91 acres (see **Figure 5**; as noted on Figures 5c and 5d, the acreages and boundaries specified on those figures and throughout this document are subject to revisions, as final negotiations take place between PANYNJ, Conrail, and Tropicana). However, locations where physical components of the Project would be constructed would not differ significantly from those described in CatEx 1B (see **Figure 2**); the engineering of these components has simply progressed enough from the completion of CatEx 1B that their locations can now be described. The aforementioned land swaps would simply ensure that PANYNJ will maintain operational control over appropriate portions of Greenville Yard to ensure full access to the Greenville Yard Lift Bridge and the surrounding facilities. PANYNJ control of Greenville Yard will, in turn:

- Safeguard the federal investment in the lift bridge by ensuring that any other freight facilities developed in the future at Greenville do not encroach on the property improved via the federal investment; and
- Allow for an efficient track and switch layout (as shown in **Figure 6**) that would ensure that unrestricted operations at the Greenville Yard Lift Bridge are maintained throughout the functional life of the bridge.

The physical Project elements listed below will allow NYNJR to increase the frequency and reliability of the cross-harbor transfer operations, upgrading the transfer capacity to approximately 23,000 revenue railcars per year from the current 1,500 railcars per year. The upgraded system will operate between five and six days per week, i.e. 260 to 312 days per year, depending on the availability of freight, weather conditions, equipment maintenance windows, etc. Each train would be made up of 36 railcars. Four trips per day (two trains) would be moved through the system in order to achieve the full transfer capacity of 23,000 revenue cars per year that would be possible with the proposed Cross Harbor improvements.

According to PANYNJ demand projections, approximately 60 percent of the freight moved by NYNJR will consist of commercial solid waste from sources other than New York City; the remainder will comprise commodities, such as dry and liquid bulk cargo, building materials, beverages and food, etc.

PROPOSED ELEMENTS

CONSTRUCTION OF REPLACEMENT TRANSFER BRIDGES

As previously identified in CatEx 1B, PANYNJ proposes to construct two replacement lift bridges—one in the location of the former Bridge #10, and one additional bridge in location of either former Bridge #9 or #11. Preliminary design indicates that both bridges will be driven by hydraulic cylinders (see **Figure 7**), which will lower and raise the bridge to meet each carfloat in accordance with the tide. A hydraulic bridge drive provides an unlimited vertical clearance and can handle large loads. This type of bridge can also be raised out of the water to protect the splash zone, the area of the bridge's substructure most vulnerable to corrosion from contact with saltwater. Preliminary designs also suggest a double wide through girder construction for the bridge deck. The girders would serve as a protective barrier from the elements and would help protect the bridge tracks from saltwater exposure; the two girder system would allow for a wide open bridge deck. The bridge deck would be of a double articulated design, with a hinge at the land side, and one in the middle of the deck (instead of one long span). This would allow the bridge operators greater control while pinning carfloats to the bridge during loading and unloading.

The construction of the replacement bridges will require a new fender system, which will likely consist of monopiles wrapped in donut fenders (foam-filled fenders that slip onto each pile). A modern operator house will also be constructed as part of this replacement action.

GREENVILLE YARD SITE WORK AND TRACK IMPROVEMENTS

A system of support tracks will be required to connect each bridge to the rail network. The layout presented in **Figure 8** represents a comprehensive planning effort on behalf of PANYNJ, NYNJR, Conrail, Global Marine Terminal, and the two Class I railroads serving Greenville (CSX and NS). This collaboration ensures that all of the proposed project facilities and further potential development of Greenville under consideration would be designed in a way that would ensure reliable Cross Harbor operations.

To help control flooding at the yard and to ease the transition through the "A" Yard portion of Greenville Yard (which is located at a much higher elevation than the rest of the yard), the grade of the portion of the yard between Colony Road and the waterfront (i.e. the grade under most of the green tracks depicted on **Figure 3**) will be raised. To protect the proposed Greenville Yard capital investment and continued operations from flooding, the grade in the proposed project areas currently below an elevation of 9 feet NAVD88 would be raised to 9 feet NAVD. This proposed undertaking was not included in CatEx 1B, because at the time, preliminary design information for the yard was not available and the optimal amount of grade increase had not yet been determined.

Currently, the eastern portion of the yard is at an elevation of 5 feet above the North American Vertical Datum of 1988 (NAVD88), which is substantially lower than the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) 100-year floodplain elevation of 9 feet referenced to the National Geodetic Vertical Datum of 1929 (NGVD29, approximately 8 feet NAVD88). As discussed in more detail under the Natural Resources section following, FEMA has recently issued preliminary work maps, according to which the 100-year flood plain elevation is 12 feet NAVD88 for most of the site. A small portion of the site along the coast is within the wave action zone, where the 100-year flood elevation is 17 feet NAVD88. Under the existing conditions the yard floods during extreme tides and weather conditions. While the proposed increase to 9 feet is not at an elevation that would completely eliminate flooding during an extreme event like Superstorm Sandy, it would drastically reduce the adverse effects of such a storm, and would eliminate flooding in a storm like Hurricane Irene, which struck the area in 2011. The 9-foot elevation represents a compromise between the elevation necessary to provide storm protection and the constructability of the replacement bridges, since increasing the grade of the yard further would mean longer, and therefore heavier and more costly, bridges.

In addition, the re-grading would bring the site much closer to conformance with current American Railway Engineering and Maintenance-of-Way Association (AREMA) safety standards for this type of yard. The current grade to "A" Yard and the rest of the rail network beyond is steep, and will be considerably more dangerous as freight volumes increase and blocks of cars become longer and heavier. The existing grade also puts increased stress on the rails and the locomotives. With the proposed change in grade, the stress on the rails and locomotives would be reduced, also improving safety, as well as reducing fuel use and air pollutant emissions.

The net effect of this re-grading work is that the proposed project site will be (approximately) 9 feet NAVD88 at the water's edge, and rise with a very slight grade moving west along the site, until Colony Road. This elevation increase will require an increase in the elevation of the existing bulkhead. No fill be placed at the shoreline or in the water.

The clean fill (meeting NJDEP residential standards) that will be used to build up grade is currently being used as surcharge on a portion of the site to allow for potential future development, to compact that portion of the site before design and construction of any additional facilities can begin, but will no longer be needed once that site is sufficiently compacted.

In addition to the aforementioned improvements, PANYNJ will conduct other necessary yard enhancements related to drainage, lighting, and security. New trailers for site personnel will also be installed.

DESIGN AND CONSTRUCTION OF REPLACEMENT CARFLOATS

As part of the proposed project, PANYNJ will purchase two carfloats specially designed for NYNJR operation. Each carfloat will be approximately 370 feet long and 36 feet wide at the bow (see **Figure 9**). Each carfloat will have four tracks and will be able to accommodate 18 60-foot railcars. This Project element represents a minor change from CatEx 1B, which described the purchase of only one new carfloat. At the time, PANYNJ planned to continue using Barge #29, which, as mentioned above, has since been destroyed by Hurricane Sandy.

The replacement carfloats may have deeper drafts than the previously used carfloats and may require that both Greenville Yard and 65th Street Yard approaches be dredged to a depth of 15 feet. 65th Street Yard may require the removal of up to 23,000 cubic yards of sediment. Up to 18,000 cubic yards of dredging would be required at Greenville Yard, as compared to 5,600 cubic yards identified under CatEx 1B. This additional amount of dredging is required to accommodate larger carfloats and to account for deposition of sediment from Superstorm Sandy.

No modifications to the existing Barge #16 are proposed as part of this project.

PURCHASE OF REPLACEMENT LOCOMOTIVES

To replace the two functionally obsolete and fuel-inefficient 1950's-era locomotives currently used by NYNJR for cross harbor carfloat operations, PANYNJ will purchase up to four new ultra-low emission locomotives. Two of these will be based at Greenville Yard and one or two will be based at 65th Street Yard in Brooklyn. The purchase of the locomotives represents a new Project element.

65TH STREET YARD AND SUPPORT TRACKWORK

Track work at 65th Street Yard will be performed in order to improve capacity and efficiency of assembling trains at this yard. Track work would be limited to the replacement and realignment of tracks #6 through #9 (see **Figure 10**) and would involve minimal ground disturbance. Work at 65th Street Yard represents an addition to the Project as it was defined in CatEx 1B. However, since Greenville Yard and 65th Street Yard function as two termini of the same system, work at both yards will be included in the Project as currently proposed to allow for comprehensive planning.

65TH STREET YARD FENDER SYSTEM MODIFICATIONS

The existing fendering system at 65th Street Yard (which can accommodate only three-track carfloats) will be rebuilt to accommodate the two new four-track carfloats that will be designed and constructed specifically for the operation. The fender system will likely be similar to the one planned for Greenville Yard, comprising monopiles wrapped in donut fenders. This Project element is an addition to the Project as previously defined.

D. ENVIRONMENTAL CONSIDERATIONS

As mentioned above, this re-evaluation statement considers changes to the proposed project subsequent to the completion of CatEx 1B: the lease (instead of purchase) of portions of Greenville Yard, additional site work and track improvements within Greenville Yard, track rehabilitation and fender system modifications at 65th Street Yard, and the purchase of two replacement carfloats (instead of the one carfloat planned under CatEx 1B). Where relevant, changes in site conditions resulting from Superstorm Sandy are discussed.

The Project elements proposed at 65th Street Yard, i.e. track rehabilitation and fender system modifications were not previously evaluated in CatEx 1B. Therefore, each technical analysis

area below includes a brief discussion of the existing conditions as 65th Street Yard, forming a basis from which to evaluate these new Project elements.

The remaining new element of the proposed project, the procurement of up to four ultra-low emission locomotives for the cross harbor carfloat operation, does not warrant extensive environmental analysis and is only mentioned below if appropriate (e.g. under Air Quality).

LAND USE, ZONING, AND PUBLIC POLICY

GREENVILLE YARD

As previously established in CatEx 1B, a large portion of the Greenville Yard study area currently comprises industrial and transportation uses. These uses would continue under the proposed project, which is designed explicitly to integrate with these existing uses and other industrial and transportation uses being considered for further development of the study area. As discussed in CatEx 1B, the construction and operation of the proposed project would be concentrated mainly within Greenville Yard itself, and the closest residential development to the Project site—which is located more than 2,000 feet away—is separated from the Project site by a metal recycling operation. The residential communities of Jersey City and Bayonne are located more than 5,000 feet away and separated from the Project site by highways (New Jersey Turnpike and NJ Route 440) and rail lines.

The proposed project, as currently defined, is not expected to substantially increase the number of Cross Harbor related trains traveling on the Greenville Branch and National Docks Secondary, as compared to CatEx 1B. As mentioned previously, the existing operation transfers a relatively low volume of railcars, and therefore the frequency of trains and the number of cars per train varies greatly, however can be assumed for the purposes of this comparison to be one to two trains per day (i.e. up to four train trips per day). The slight increase to four trips per day proposed under this Project would not constitute a significant change; Cross Harbor trains would simply get longer under the proposed project. Therefore, CatEx 1B determined that an increase in the number of trains or cars per train serving the yard from existing traffic would not represent a marked change in conditions for the surrounding residential neighborhoods, which are already located adjacent to freight and light rail tracks. This conclusion remains correct for the Project as defined in this re-evaluation.

The three parcels of land that were planned to be purchased by PANYNJ from Conrail under CatEx 1B will no longer be purchased. Instead, land will continue to be leased. As noted above, the extent of the leasehold currently held by NYNJR will be adjusted to ensure the efficient development and operation of Greenville Yard and any additional facilities that PANYNJ elects to advance (see **Figure 5**); this adjustment will include a negotiation with Tropicana for control over the aforementioned southeastern corner of the property. Any land added to the leasehold as a result of such adjustments is similar in general character and prior usage to land which is included in the leasehold today and does not contain any environmental resources that would be affected by this change in leasehold boundaries. In addition, the operation of the yard and the surrounding uses are expected to remain the same throughout the remaining 40-year term of the lease. Therefore, the changes in the proposed project would not substantially change the conclusions of CatEx 1B or require any additional analysis with respect to land use or planned development in the area.

65TH STREET YARD

65th Street Yard is located on the Brooklyn waterfront, on the shore of Upper New York Bay. Residential uses are present within 1,000 feet to the south and east of the 65th Street Yard. There is a mix of residential and industrial uses to the east, and generally residential uses and open space to the south. The Brooklyn Army Terminal complex is located immediately adjacent to the north and much of the study area in the vicinity of the 65th Street Yard to the north is characterized by industrial uses and transportation infrastructure. The industrial waterfront is generally inaccessible to the public. East of Second Avenue, the land use is transitional, between the industrial waterfront and residential neighborhood uses further inland. The land uses in this transitional section include a mix of both manufacturing and residential.

Under the proposed project, land use surrounding 65th Street Yard is expected to remain the same. The proposed track rehabilitation and fender system modifications, along with proposed improvements at Greenville Yard, would increase the number of trains traveling on the Bay Ridge Branch (to 4 trips per day), which is not an increase that would significantly affect conditions for the surrounding residential neighborhoods, which are currently adjacent to industrial uses and transportation infrastructure.

Therefore, the proposed project would not induce substantial impacts on land use or planned development in the area.

ENVIRONMENTAL JUSTICE

GREENVILLE YARD

An Environmental Justice analysis had been prepared for CatEx 1B, to identify and address any potential adverse impacts on minority or low-income populations that could result from the proposed project. The analysis demonstrated that the study area has a larger proportion of minority and low-income residents than Hudson County overall, with the minority and low income populations located mainly in the Jersey City portion of the study area. The Greenville Yard study area was therefore identified as a minority and low-income community.

CatEx 1B concluded that the proposed project is designed to enhance existing rail yard operations and will not result in the temporary or permanent displacement of any residents or businesses in the study area. The construction and operation of the proposed project would be concentrated mainly in Greenville Yard itself, with the residential communities of Jersey City and Bayonne located more than 5,000 feet away.

The proposed project is not expected to substantially increase the number of trains or railcars traveling on the Greenville Branch and National Docks Secondary serving the yard. The planned increase in the number of trains and cars per train, for trains transferred via the replacement bridge, would not represent a marked change in conditions for the surrounding residential neighborhoods, which are currently adjacent to freight and light rail tracks.

Therefore, the changes in the proposed project would not substantially change the conclusions of CatEx 1B or require any additional analysis with respect to effects on minority and low income communities.

65TH STREET YARD

Because much of the general alignment of the Cross Harbor Freight Program runs through dense urban areas in New York City, environmental justice populations can be found throughout the entire alignment, including near 65th Street Yard. Approximately 70 percent of the overall Cross Harbor Freight Program (including rail yards) is located in or near environmental justice communities. The lines and yards in Brooklyn, specifically along the Bay Ridge Branch, are located in or alongside environmental justice communities, approximately half of which are minority and low-income, with the remainder divided between exclusively minority (not low-income) and exclusively low-income (not minority) communities.

The proposed project would increase the number of train trips on the Bay Ridge Branch to 4 per day. The projected increase in the number of trains and cars per train would not represent a marked change in conditions for the surrounding residential neighborhoods, which are currently adjacent to transportation infrastructure.

Therefore, the proposed project would not be expected to result in any substantial effects on the minority and low-income community in the area. Similarly, the proposed project would not result in disproportionately high and adverse effects on minority and low-income populations in the study area.

NOISE AND VIBRATION

EXISTING CONDITIONS

As detailed in CatEx 1B, Greenville Yard is located in an area with a concentration of industrial, warehousing, and transportation use which generate ambient noise. A number of rail lines serve the study area, including the Greenville Branch that serves Greenville Yard and a branch of Hudson-Bergen Light Rail. Traffic noise from I-78, RT-440, and RT-185 also contributes to ambient noise levels. The Federal Transportation Administration (FTA) guidance manual, *Transit Noise and Vibration Impact Assessment* (May 2006) dictates that the screening distance for the assessment of noise from rail yards is 1,000 feet for unobstructed distances, and 650 feet for distances with intervening buildings. The closest potentially sensitive receptor is the Port Liberte development, located approximately 2,000 feet to the north of the lift bridge and separated from the Project site by the Sims Hugo Neu metal recycling facility which contributes to the ambient noise through its metal recycling and blasting operations.

The proposed project is designed to enhance existing rail yard operations; the existing Tropicana operation will remain unchanged by the aforementioned track relocation. The construction and operation of the proposed project will be centered on Greenville Yard itself, which is located in an industrial and transportation district. While the proposed project is expected to result in additional traffic on the Greenville Branch and additional trains and railcars may be transferred by the lift bridge, the increase in the number of trains would not represent a noticeable change in conditions for the surrounding residential neighborhoods, which are currently located adjacent to freight and light rail tracks. Certain portions of the study area where the freight tracks run on a low embankment already experience ambient noise from the NJ Turnpike and RT-440. As described in the "Land Use, Zoning, and Public Policy" section above, the residential communities of Jersey City and Bayonne are separated

from the yard and float operations by existing rail lines and highways. Therefore, any noise and vibration effects emanating from the site would not be audible in the residential areas due to the existing noise sources located between the yard and the residential areas.

The changes in the proposed project would not substantially change the conclusions of CatEx 1B or require any additional analysis with respect to noise and vibration effects.

65TH STREET YARD

Existing noise levels along the Bay Ridge Branch, including at 65th Street Yard, range between 58.5 dBA and 85.1 dBA. The locations toward the top end of this range would be considered "very noisy" under the FTA guidance manual.

The increases in the number of trains and cars per train resulting from the proposed project are not expected to substantially increase noise or vibration in the areas surrounding the yard, as the uses nearby are in close proximity to industrial sites and transportation infrastructure. The proposed work at 65th Street Yard involves track rehabilitation and fender system modifications. The fender system modifications will take place within the water and not in close proximity to any residential area. Track rehabilitation work is not expected to create noise levels significantly above existing conditions at 65th Street Yard.

Therefore, the Project elements proposed at 65th Street Yard would not have the potential for a significant adverse effect from noise and vibration.

AIR QUALITY

GREENVILLE YARD

Greenville Yard is located in Hudson County, which is within a nonattainment area for ozone and particulate matter ($PM_{2.5}$) and a maintenance area for CO.

The Transportation Improvement Program (TIP) for the State of New Jersey (prepared by New Jersey Transportation Planning Authority [NJTPA]) for federal fiscal years 2012 through 2015 listed (under project 09338) actions needed to achieve State-of-Good-Repair for the Greenville Yard and Lift Bridge. The elements of the Project described in this re-evaluation statement would result in a similar level of activity and effect on air quality as the elements of the Project that were included in the TIP.

As described in CatEx 1B, the proposed project would enhance existing rail yard operations and ensure the continuity of water-borne freight movement across the harbor, thereby providing a valuable alternative to freight movement by truck. The proposed project would lead to an increase in rail and railcar float activity, as well as a reduction in regional truck traffic; the operations of the Tropicana facility will remain unchanged by the aforementioned track relocation. Therefore, changes in regional emissions would not be significant and would not result in new air quality violations, worsen existing air quality violations, or delay timely attainment of air quality standards or any interim milestones. The ultra-low emission locomotives purchased as part of the proposed project would be an upgrade from the existing 1950s-era locomotives used for the cross harbor carfloat operation.

On a microscale, or neighborhood, basis, the small increase in activity at the yard or along the rail corridor that would be affected would not result in a significant increase in criteria pollutant levels, including $PM_{2.5}$ and NO_2 which are the main pollutants of concern for diesel-powered locomotives and railcar float tugs.

Therefore, the proposed project changes would not substantially change the conclusions of CatEx 1B or require any additional analysis with respect to air quality.

65TH STREET YARD

65th Street Yard is located in Kings County, which is within a nonattainment area for ozone and particulate matter ($PM_{2.5}$) and a maintenance area for CO.

The proposed project would enhance existing rail yard operations and ensure the continuity of water-borne freight movement across the harbor, thereby providing a valuable alternative to freight movement by truck. The proposed project would lead to an increase in rail and railcar float activity, as well as a reduction in regional truck traffic. Therefore, changes in regional emissions would not be significant and would not result in new air quality violations, worsen existing air quality violations, or delay timely attainment of air quality standards or any interim milestones.

On a microscale, or neighborhood, basis, the small increase in activity at the yard or along the rail corridor that would be affected would not result in a significant increase in criteria pollutant levels, including $PM_{2.5}$ and NO_2, which are the main pollutants of concern for diesel-powered locomotives and railcar float tugs.

Therefore, the Project elements proposed at 65th Street would not have the potential for a significant adverse effect on air quality.

CONTAMINATED MATERIALS

GREENVILLE YARD

According to the documentation reviewed as part of the contaminated materials assessment performed for CatEx 1B, approximately 45,000 cubic yards of general fill material that was contaminated with barium, lead, and various polycyclic aromatic hydrocarbons above the NJDEP residential direct contact cleanup criteria were placed at the site sometime between October 30, 2001 and April 23, 2002. Following a 2007 NJDEP-issued Administrative Consent Order (ACO) requiring remediation of the site through engineering and institutional controls, a Remedial Action Workplan (RAW) was submitted by The New York Cross Harbor Terminal Corporation. The approval of the RAW was followed by the 2009 submittal of a Remedial Action Report (RAR), which documented the completion of remediation steps in accordance with the approved RAW. The only remaining task in the RAW involves the filing of the deed restriction. A draft deed restriction was approved by NJDEP in 2012; PANYNJ is currently reviewing the deed restriction with Conrail, the owner of the property, after which the finalized document will be recorded with Hudson County in accordance with NJDEP requirements.

This remediated area, which overlaps with the northern boundary of the proposed project, may be disturbed during the re-grading effort. (As mentioned above, to ease the transition

through the "A" Yard portion of Greenville Yard [which is located at a much higher elevation than the rest of the yard] and allow for greater flood protection, the eastern portion of the proposed project area near the replacement bridges will be raised to an elevation of 9 feet NAVD88 from its current elevation of 5 feet NAVD88.) Any disturbance of the remediated area will be conducted in coordination with NJDEP and in accordance with all applicable laws and regulations. Any potential adverse impacts from exposure to contaminated materials would be avoided or mitigated, therefore the proposed project changes would not result in adverse impacts not previously identified in CatEx 1B. Should grading or other work with potential for soil disturbance be required as part of the Tropicana track relocation, the work would be conducted in coordination with NJDEP and in accordance with all applicable laws and regulations. That work would not be federally-funded. No additional analysis is required.

65TH STREET YARD

65th Street Yard was abandoned during the 1980s and 1990s before being renovated and reopened in 1999 as a storage, switching, and intermodal transfer yard. It is likely that metal containing paints, oils, and degreasers associated with the maintenance of train cars and the transfer facility were used extensively on the site since its earliest development. A review of environmental records for the 65th Street Yard and surrounding study area identified numerous listings for sites that are located within the boundaries of or near 65th Street Yard. Several of the sites found contained underground storage tanks; one site was listed as a manufacturer of hazardous chemicals. Brooklyn Army Terminal, located adjacent to 65th Street Yard was found to have elevated concentrations of lead and other heavy metals present in its structures and surrounding soil; the Owl's Head Water Pollution Control Plant is located adjacent to the yard to the south.

The proposed track rehabilitation would involve mainly the placement of ballast as track support. The depth of ballast will be determined during preliminary design but it is currently anticipated that only minimal surface excavation (approximately 6 inches) will be required as part of the proposed project. Deeper excavation may be required in limited areas if buried utilities are encountered during construction. Appropriate dust and erosion controls will be implemented by PANYNJ during construction to minimize the risk of exposure to public health and the environment. If preliminary design determines that the proposed track rehabilitation requires more extensive excavation, preventative measures would be used to avoid the possibility of adverse impacts from any contamination discovered in the areas of concern. Standard remediation measures exist for all of the substances likely to be encountered.

Health and Safety Plans (HASPs) approved by NYSDEC would be developed for the various construction activities associated with the Project to reduce the potential for worker or public contact with wither soil or groundwater contamination. The provisions of the HASP would be mandatory for the contractors and subcontractors engaged in any construction activities that have the potential to expose their personnel to the existing soils or groundwater on the site. In addition, all on-site personnel would be required to follow all applicable local, state, and OSHA construction codes and regulations.

Potentially contaminated soils would be excavated and stockpiled until they could be tested and, if necessary, removed for off-site disposal at an appropriate facility. Contaminated

materials encountered during construction would be handled, stored, and disposed of in accordance with all applicable federal, state, and local regulations.

By implementing such measures, significant adverse impacts would be avoided or mitigated and therefore the Project elements proposed at 65th Street would not have the potential for a significant adverse effect from contaminated materials.

NATURAL RESOURCES

GREENVILLE YARD

Floodplains

As indicated by the FEMA flood insurance rate maps (FIRMs; panel ID 34017C0112D), the eastern portion of Greenville Yard is largely situated within the 100-year flood zone, an area subject to 1 percent annual chance flood, with a flood elevation of 9 feet NGVD29 (approximately 8 feet NAVD88). A 500-year flood zone, or an area with a 0.2 percent chance of flooding each year, occupies a small portion of the Project site.

As noted previously, since the completion of CatEx 1B, Greenville Yard was struck with a 13-foot storm surge from Superstorm Sandy. Prior to the storm, FEMA had been working to update FIRMs, some developed more than 25 years ago, using recent data and improved study methodologies. These updated maps were set to be delivered to state and local officials in mid-2013, however, in light of Superstorm Sandy, preliminary work maps were released to support reconstruction efforts.

According to FEMA's preliminary work maps, Greenville Yard lies within Advisory Flood Hazard (AFH) Zones A/AE and V/VE. Both of these zones represent 100-year flood zones; Zone V would be subject to high velocity wave action. The draft contours of these zones do not differ significantly from the previously mapped contours, but the preliminary work map elevations are substantially higher than the FIRM elevations.

As mentioned above, under the proposed project as currently defined, the entire eastern portion of the proposed project site will be raised to an elevation of 9 feet NAVD88 from its current elevation of 5 feet NAVD88 to increase flood resiliency and ease the transition through the "A" Yard portion of Greenville Yard (which is located at a much higher elevation than the rest of the yard). While this earthwork will not raise the level of the entire yard out of the preliminary work map 100-year flood elevation, it would help reduce future flooding. Using lessons learned from Superstorm Sandy, the design of the replacement hydraulic bridges will incorporate measures to prevent future damage to bridge structures and controls. Therefore, the proposed project, as currently designed represents an improvement in flood protection over the design proposed in CatEx 1B.

Based on recent climate change projections, by the 2050s the floodplain elevation could be expected to shift by more than 2.5 feet.[1] PANYNJ has considered both the current and future flooding risks. As explained previously, it would not be practical or safe to increase the elevation of the yard and the associated tracks beyond what is proposed. The float bridges and railcar floats would be designed to reduce the risk of damage during storms and flood events. The on-bridge control station would be located on top of the bridge gantry, at an elevation of approximately 50 feet, and would therefore be resilient to the type of storm surge that occurred with Superstorm Sandy, even under projected sea level rise due to climate change through the 2050s. PANYNJ would also establish plans for moving locomotives and stored freight out of the way when adverse weather conditions are expected.

Upland natural resources

The natural resources assessment conducted for CatEx 1B confirmed that there are no wetlands located within the upland area of Greenville Yard. Fieldwork conducted for a related project in 2003 and for CatEx 1B in 2011 confirmed that a 1.6-acre herbaceous wetland listed on the New Jersey Department of Environmental Protection (NJDEP) *i-MapNJ DEP* environmental mapping database is no longer present on the site. The yard is built on fill material and bulkheaded, and therefore contains limited areas that are suitable for wildlife habitat. As recorded in CatEx 1B, no wildlife was observed during the site visit. According to data provided by NJDEP Natural Heritage Program database and i-MapNJ DEP interactive mapping, no federally listed threatened or endangered wildlife species occur within or near the upland portions of the yard.

Aquatic resources

At the time of CatEx 1B, the federally and state listed endangered shortnose sturgeon was the only threatened or endangered fish species with the potential to occur in the Project study area, based on responses received from the National Marine Fisheries Service (NMFS) at the time. NMFS had determined that the presence of shortnose sturgeon near the Project site would be rare due to the high salinity of the Upper Bay in the study area. CatEx 1B determined that four species of marine turtles, all state and federally listed, are also found in the waters surrounding New York City and have the potential to pass through areas near the Project site between June and mid-November, although there are no dredging restrictions associated with these species. Finally, CatEx 1B also described that although winter flounder are not a federally or state-listed threatened and/or endangered species, their spawning period and early life stages (between January 1 and May 31) are often protected throughout the Project vicinity by periods of dredging restriction.

Since the completion of CatEx 1B, the Atlantic sturgeon has been designated as a federally- and New Jersey-state listed endangered species. The Atlantic sturgeon is an anadromous species that spawns in freshwaters and spends most of its adult life in the coastal waters of Atlantic

[1] PlaNYC, "A Stronger, More Resilient New York: Climate Analysis", June 2013. While the information was developed specifically for New York, the projections are applicable through the wider New York Harbor area, including Greenville Yard.

Ocean. Atlantic sturgeon migrates up rivers from the ocean to spawn above the salt front, in freshwater, from April to early July. Female sturgeon move out of the rivers following spawning, but males may remain in rivers until October or November. The species occurs in New York Harbor and the Hudson River Estuary, however, because this species spends much of its time in the open Atlantic Ocean or in the freshwater reaches of spawning rivers, it is unlikely that the Atlantic sturgeon would occur within the Project area. There are no dredging restriction windows associated with Atlantic sturgeon.

At the time of CatEx 1B , through consultation with NMFS, FHWA determined that the Project, at defined at the time, would have no effect on federally threatened and endangered species and no significant adverse effects to aquatic resources would result from the Project described in CatEx 1B. PANYNJ committed to, in addition to observing the protected January 1-May 31 "window" for winter flounder, working closely with natural resource agencies to limit the duration of in-water work during summer months, and implementing appropriate best management practices for such work. As part of this re-evaluation, FHWA has re-initiated informal consultation with NMFS to re-confirm previous conclusions regarding shortnose sturgeon and marine turtles and to request NMFS' concurrence with the FHWA determination that the proposed project, as redefined, is not likely to adversely affect Atlantic sturgeon, since that species is unlikely to occur near the Project sites. In a letter dated September 20, 2013, NMFS concurred with these conclusions (see Attachment 1).

As mentioned previously, sediment deposition from Superstorm Sandy may require additional dredging at Greenville Yard under the proposed project. Up to 18,000 cubic yards may be dredged at Greenville Yard (vs. the 5,600 cubic yards identified under CatEx 1B) and up to 23,000 cubic yards may be dredged at 65th Street Yard. The duration of dredging at each project site would be relatively short (approximately six to eight days at each site) and would not result in significant impacts to essential fish habitat at each site. With the emergency demolition of the Greenville Yard Lift Bridge due to Superstorm Sandy damage, some of the in-water work related to the construction of the replacement bridges (e.g. removal of debris and collapsed fender structures) has already been completed. As discussed in CatEx 1B, any additional in-water work, associated with the construction of the replacement transfer bridges, would temporarily affect water quality by elevating suspended sediment during pile driving and dredging. However, disturbance would be intermittent, allowing suspended sediment conditions to return to ambient concentrations shortly after the completion of bottom disturbing activities. Dredging and disturbance of bottom areas within the vicinity of the removed piles and barge slips would result in temporary impacts to benthic macroinvertebrates. However, these areas would be expected to quickly recolonize. As discussed in CatEx 1B, PANYNJ will, in addition to observing the protected January 1-May 31 window for winter flounder, work closely with natural resource agencies to limit the duration of in-water work during summer months and implement appropriate best management practices for such work. The exact timing of any dredging limitations and the nature of any such best management practices would be determined during the permitting process with the U.S. Army Corps of Engineers, NJDEP, and through FHWA.

Through the implementation of these practices, and due to the short duration of in-water work, the proposed project elements would be unlikely to adversely affect aquatic resources near the Project site.

65TH STREET YARD

Floodplains

The western third of the 65th Street Yard is located within the FIRM 100-year floodplain with a flood elevation of 11 feet above NGVD29. The western half of the 65th Street Yard study area is also within the 500-year floodplain. As mentioned above, FEMA has issued preliminary work maps. According to the preliminary work maps, a portion of the site to the west is within the 100-year floodplain, with the floodplain elevation is 13 feet NAVD88. The area along the coast is within the high velocity wave zone, where the floodplain elevation is 17 feet.

The Project elements proposed at 65th Street Yard would not involve major construction in the floodplain and would therefore have no potential for significant adverse effects due to increased flooding or erosion. Based on recent climate change projections, by the 2050s, the floodplain elevation could be expected to shift by more than 2.5 feet.[1] PANYNJ will establish emergency plans to protect the railcar float infrastructure, and to move to safety railcar floats, locomotives, other essential components of the operation, and stored freight, if severe weather events are forecasted. PANYNJ would also consider the projected sea level rise in planning for future emergency management.

Upland natural resources

Portions of Upper New York Harbor near 65th Street Yard are mapped by the New York State Department of Environmental Conservation (NYSDEC) as littoral zone tidal wetlands and by the National Wetlands Inventory (NWI) as estuarine subtidal unconsolidated bottom wetlands. Vegetation at the 65th Street Yard is composed of predominantly invasive, non-native species that exist in disturbed areas and are tolerant of urban conditions. The limited areas of vegetation present within the 65th Street Yard offer limited habitat for wildlife. Wildlife species with the potential to occur within the local study area for the 65th Street Yard are limited to invasive birds such as house sparrows and European starlings, as well as Norway rats.

Willow oaks (listed as endangered in New York State) in Owl's Head Park are the only state or federally listed upland species known to occur in vicinity of the 65th Street Yard. These would not be affected by the construction of the proposed project elements at 65th Street Yard and therefore these Project elements would not have the potential for significant adverse effects on natural resources.

[1] PlaNYC, "A Stronger, More Resilient New York: Climate Analysis", June 2013. While the information was developed specifically for New York, the projections are applicable through the wider New York Harbor area, including Greenville Yard.

Aquatic resources

A number of typical aquatic organisms found within New York Harbor likely exist near 65th Street Yard: phytoplankton, benthic macroalgae, zooplankton, benthic invertebrates, shellfish, and finfish. Benthic invertebrates inhabit the sediments and surfaces of submerged objects, such as the existing barge, fender structures, and pilings, and may include soft shell clams and barnacles. Benthic macroalgae also inhabit these surfaces.

As noted above for Greenville Yard, the federally and state listed Atlantic and shortnose sturgeon have the potential to occur in the Project study area, along with the same four species of federally threatened and endangered marine turtles described above. As noted above in connection with Greenville Yard, PANYNJ will work with natural resource agencies to minimize in-water work during the summer months and implement appropriate best management practices for such work. As a result, the proposed work would be unlikely to affect aquatic resources near the Project site.

CULTURAL RESOURCES

GREENVILLE YARD

At the time of the publication of CatEx 1B, the Area of Potential Effect (APE) for architectural resources contained portions of one State and National Register (S/NR) eligible architectural resource and was located within two S/NR-eligible historic districts: the Greenville Yard Piers were both individually S/NR-eligible, and were a contributing resource within the Greenville Yards Historic District. In turn, both the Greenville Yards Historic District and the Greenville Yard Piers were located within the PRR New York Bay Branch Historic District.

Based upon the results of background research, previous archeological investigations, environmental setting, and existing conditions, CatEx 1B determined that archeological sensitivity at Greenville Yard was low, with the exception of the Morris Canal, located to the west of the yard.

CatEx 1B concluded that the Project as defined at the time would have an adverse effect on the three aforementioned historic resources and no adverse effects on archeological resources. In accordance with Section 106 of the National Historic Preservation Act, PANYNJ and FHWA, in consultation with New Jersey Historic Preservation Office (NJHPO), developed measures to minimize and mitigate the adverse effects of the proposed project on these historic resources. These measures were outlined in detail in a Memorandum of Agreement (MOA) between PANYNJ, FHWA, and NJHPO, and included recordation of the Greenville Yard Lift Bridge and its component parts to augment the previously conducted HAER recordation of these features and the development and implementation of a Relocation/Salvage Plan and a Marketing/Implementation Plan for the relocation of the entire Lift Bridge or components thereof to a publicly accessible or visible location in the Port District.

Since the signing of the aforementioned MOA, PANYNJ had advanced the actions described in CatEx 1B by engaging a consultant team to design the replacement bridges and yard track layout. PANYNJ has also submitted a draft Salvage and Relocation Plan and Marketing Plan to the NJHPO which described the relocation of portions of the lift bridge to an interested site to establish an interpretive exhibit. PANYNJ also engaged a videographer to record the lift bridge

in operation so that previous Historic American Engineering Record video could be supplemented with modern footage.

As described previously, while the provisions of the MOA were being implemented, Superstorm Sandy struck and the damage to the former Greenville Yard Lift Bridge necessitated its emergency demolition. PANYNJ and FHWA are currently engaged in redefining the scope of the salvage and relocation effort to ensure that the provisions of the MOA are appropriately completed.

The future location of the relocated Tropicana track was not included in archaeological or architectural APEs analyzed in CatEx 1B. However, because CatEx 1B determined that archeological sensitivity at Greenville Yard overall is low and because the relocation of this track would not require extensive excavation, the relocation of the Tropicana track is not likely to result in adverse effects to archaeological resources. Similarly, the relocation of the track would not alter the industrial character of the area (which has a long history of freight railroad uses) and would therefore have no adverse effects on architectural resources in the area such as the S/NR eligible historic districts.

65TH STREET YARD

There are no architectural resources located at 65th Street Yard; the nearest architectural resource is the S/NR-listed and NYCL-eligible Brooklyn Army Terminal to the north of the yard.

A Phase IA Archaeological Assessment previously conducted for the area[1] identified no previously recorded pre-contact or historic-period archaeological sites within the yard or in the immediate vicinity. Research indicates that the construction of the yard in the 1870s and 1880s required extensive fill, grading, and the extension of the original shoreline. Soil borings conducted for a previous project indicate that the yard is covered by 6 to 8 feet of fill. Since then, a substantial degree of sub-surface ground disturbance has been documented for the yard, and therefore, the yard contains low sensitivity for pre-contact period archaeological deposits. Similarly, any archaeological sites that may have been present offshore in the pre-contact period (before the European colonization of the New York area) are presently underwater and would have been disturbed during previous dredging and pier and bulkhead construction. In terms of archaeological sensitivity for 19th century transportation or industrial related resources, both the New York City Landmarks Preservation Commission and the New York State Historic Preservation Office have confirmed that they no longer consider 65th Street Yard to be sensitive for these resources.

The proposed track rehabilitation would require minimal excavation, approximately 6 inches required to place ballast. Deeper excavation may be required in limited areas if buried utilities are encountered during construction, however these utility locations would comprise previously disturbed subsurface areas where archaeological resources are unlikely to be present. Therefore, the proposed track rehabilitation would not adversely affect architectural or archaeological resources at 65th Street Yard.

[1] Cross Harbor Freight Movement Project: Phase 1A Archaeological Assessment, 65th Street Rail Yard, Bay Ridge Tunnel Alignment, Brooklyn, Kings County, NY. John Milner Associates Inc. April 2002.

CUMULATIVE IMPACTS

The cumulative effect of potential further development of the Greenville peninsula would be related to the proximity of the proposed project to any additional freight facilities under consideration, such as the ICTF or CMSW facilities. Any cumulative effects would therefore be limited to the operations of Greenville Yard and the Greenville branch of the National Docks Secondary in the study area, since the potential ICTF and CMSW operations would not result in increases in truck or rail traffic in Brooklyn or along the Bay Ridge Branch. ICTF cargo would arrive to the Global Terminal by international cargo ship and then be transported by truck a short distance to Greenville Yard; barge traffic to the CMSW facility would come from the east, from marine transfer stations in Brooklyn, and would not travel on the Bay Ridge Branch. As mentioned previously, the operation of the Tropicana facility would not be modified as a result of the proposed track relocation.

According to conceptual plans available for the ICTF and CMSW facilities at this time, the two facilities would result in four additional trains per day (i.e., 8 train trips) along the Greenville Branch. Together with the increase in train traffic due to Cross Harbor-related improvements described in this re-evaluation, and the existing Tropicana operation (which would be unchanged by the relocation of the aforementioned track), there would be a total of 7 trains per day (14 train trips) traveling on the Greenville Branch, an increase of 5 trains per day (10 train trips) as compared with the existing condition.

All of the projects considered for the development of the Greenville peninsula, including the proposed Cross Harbor improvements, would be expected to divert freight currently moving by truck to marine and rail options. At the regional level, this modal shift from truck to rail would result in decreased pollutant emissions and related air quality benefits. At the local level, i.e. in southern Jersey City and northern Bayonne, the additional train trips on the Greenville Branch associated with the CMSW and proposed Cross Harbor operations would result in added air pollutant emissions. Because the Cross Harbor and CMSW do not currently generate truck trips in the local southern Jersey City and northern Bayonne area, there would be no change in local truck trips. The potential operation of ICTF would also result in an increase in local air pollutant emissions related to increased rail traffic on the Greenville Branch. However, because the ICTF facility would be designed to divert cargo from Global Marine Terminal (i.e. international containers that are currently carried by trucks) to rail, the development of ICTF would reduce local truck trips by over 1,200 trips per day, with associated reductions in air pollutant emissions. These are trucks that would have otherwise been traveling on local truck routes such as New Jersey Route 440, which runs parallel to the Greenville Branch in the study area.

SCREENING ANALYSES

An air quality screening analysis was performed as part of this re-evaluation, to determine whether the operation of the proposed Cross Harbor facility, in addition to the ICTF and CMSW facilities under consideration, would have the potential to result in an exceedance of National Ambient Air Quality Standards (NAAQS). The analysis found that there would be a potential for

adverse effects on air quality from the ICTF and CMSW operations alone[1]. The addition of the Cross Harbor operation would not create a cumulative impact but may increase the intensity of impacts. An effort to minimize this contribution to overall impacts is built into the Project design: as part of the proposed project, up to four new ultra-low emission locomotives would be purchased, replacing older locomotives with greater emissions.

Similar results were obtained from a screening analysis of potential effects from the Cross Harbor operation, and the ICTF and CMSW operations being considered on noise levels. The ICTF and CMSW facilities under consideration, even without the proposed project, would substantially increase noise levels. On its own, the proposed project would not result in an adverse effect on noise levels, therefore, the contribution of the Project to the potential ICTF and MSW operations would not result in cumulative noise impacts but may slightly increase the intensity of impacts.

The ICTF and MSW facilities under consideration have not yet been fully approved or funded, nor have they undergone environmental review/permitting. Further, the design of such facilities has not progressed beyond the conceptual stage. Measures that would reduce the potential adverse effects of those two operations would be identified as part the approval process for those projects should they move forward. These measures, when implemented, would be expected to reduce any potential effects from those projects, to which the proposed project would be a negligible contributor, particularly with the purchase of new, more efficient locomotives for NYNJR.

E. APPLICABILITY OF BUY AMERICA TO THIS PROJECT

PANYNJ acknowledges being advised by FHWA that due to the enactment of the federal transportation reauthorization bill, known as the Moving Ahead for Progress in the 21st Century Act (MAP-21), effective October 12, 2012, any project analyzed under NEPA and which has federal funding for any portion of the project, subjects the entire project to the Buy America requirements under Title 23, Code of Federal Regulations (CFR). Accordingly, PANYNJ understands that all elements of the Project, even those not being funded in whole or in part by the federal SAFETEA-LU earmark for the Project administered by FHWA, will be subject to such Buy America requirements.

F. CONCLUSION

Based on the above re-evaluation, it has been determined that the conclusions of CatEx 1B remain valid and that the aforementioned Project changes and new Project elements do not have the potential to result in significant environmental impacts not previously identified in CatEx 1B. Further evaluation of the proposed project as currently designed is not required. ✳

[1] It is important to recognize that the potential for adverse effects associated with the ICTF and CMSW operations was based on screening-level analyses. It is possible that adverse impacts would not be predicted using more refined methodology.

NEW YORK NEW JERSEY RAIL, LLC

February 23, 2015

Jonathan M. Broder, Esq.
Vice President – Corporate Development and
Chief Legal Officer
Consolidated Rail Corporation
1717 Arch Street, Suite 1310
Philadelphia, PA 19103

Re: Consolidated Rail Corporation ("Conrail") / New York New Jersey Rail, LLC ("NYNJR") - Greenville Yard, Jersey City, NJ ("Greenville Yard") – Construction of New Transfer Bridge #10

Dear Mr. Broder:

I refer you to the Property Lease, dated as of December 15, 2002, between Conrail, as landlord, and New York Cross Harbor Railroad Terminal Corporation ("NYCHRTC"), as tenant, as assigned by NYCHRTC to NYNJR, and as amended by that certain Lease Amendment dated as of July 25, 2013 (as so assigned and amended, the "Lease").

Pursuant to the Lease, Conrail leases approximately 27 acres of real property at Greenville Yard, Jersey City, New Jersey, to NYNJR for use in its operations.

As you are aware, prior to Superstorm Sandy in 2012, a transfer bridge owned by NYNJR and located at Greenville Yard ("Bridge #11") was used on a daily basis in support of NYNJR's cross-harbor marine carfloat system.

Superstorm Sandy effectively destroyed Bridge #11, in addition to three other non-operational transfer bridges at Greenville Yard, causing a suspension of carfloat operations. NYNJR was forced to move a floating pontoon bridge located at 51st Street Yard in Brooklyn, New York to Greenville Yard, and to install such pontoon bridge at Greenville Yard as a temporary improvement allowing NYNJR to resume carfloat operations. The pontoon bridge has a limited life span and is not the permanent solution for the loss of Bridge #11. In order to continue operating its

26 Colony Road
Jersey City, New Jersey 07305
Tel: 201-433-0360

marine carfloat system on a reliable basis, NYNJR must build a new, more robust transfer bridge at Greenville Yard in replacement of former Bridge #11.

In accordance with Section 11 of the Lease, this letter serves as Conrail's consent to NYNJR's construction and operation of a new transfer bridge at Greenville Yard, as a permanent replacement of Bridge #11 to be known as new Bridge #10, subject to the following conditions:

1- NYNJR shall construct new Bridge #10 substantially in accordance with the plans and specifications set forth on "Exhibit A" attached hereto and made a part hereof, which plans and specifications have been reviewed and approved by Conrail. NYNJR must submit any proposed material change or alteration to such plans and specifications to Conrail's Engineering Department for its review and approval prior to implementing any such change or alteration.

2-NYNR shall construct new Bridge #10 in the approximate location shown on the plan attached hereto as "Exhibit B" and made a part hereof.

3-Upon completion of construction, NYNJR shall supply a set of as-built drawings of new Bridge #10 to Conrail's Engineering Department, along with a certification from a Professional Engineer licensed to practice in the State of New Jersey that such bridge has been constructed substantially in accordance with the approved plans and specifications.

4 – Title to new Bridge #10 will be held by NYNJR.

5-NYNJR's construction, operation and maintenance of Bridge #10 is subject to NYNJR's compliance with the terms and conditions of the Lease.

6-Conrail and The Port Authority of New York and New Jersey (the "Port Authority") are currently negotiating the terms of an agreement (the "Project Agreement") providing for the redevelopment of Greenville Yard into a modern intermodal freight facility, including construction, operation and maintenance of a revised track layout which will allow for improved NYNJR carfloat operations and a new Intermodal Container Transfer Facility. Once the Project Agreement is executed between Conrail and the Port Authority, track connections between Greenville Yard and the new Bridge #10 will be constructed in accordance with the terms and conditions of such Project Agreement. If Conrail and the Port Authority cease negotiations or otherwise fail to reach agreement on a mutually acceptable Project Agreement, in accordance with Section 11 of the Lease, Conrail hereby further consents to give NYNJR the right, but not the obligation, to construct a track connection, at NYNJR's expense, between the then-existing Greenville Yard and the new Bridge #10, subject to submitting such proposed track connection for prior approval by Conrail's Engineering Department, such approval not to be unreasonably withheld, conditioned, or delayed. Title to such track connection will be held by NYNJR.

7-Nothing contained herein modifies any of the terms and conditions of the Lease, which terms and conditions remain in full force and effect.

If this accurately describes our understanding with respect to the construction of new Bridge #10 and any track connection between such bridge and Greenville Yard, kindly confirm this by signing the enclosed copy of this letter on behalf of Conrail and returning it to my attention.

Yours truly,

NEW YORK NEW JERSEY RAIL, LLC
By: The Port Authority of New York and New Jersey, its sole Member

By: _____
Name: Patricia J. Foye
Title: Executive Director

Port Authority Use Only:	
Approval as to Terms:	Approval as to Form:
MDY	

AGREED TO AND ACCEPTED:

CONSOLIDATED RAIL CORPORATION

By: _____
Name: Jonathan M. Breder
Title: VP-Corp. Dev. & CLO

EXHIBIT A

Drawings G001 through S207, and M001 through E601 in Design Drawings Package – New York New Jersey Rail, LLC, Transfer Bridge No. 10 Reconstruction at Greenville Yard Terminal and Fender Modifications at 65th Street Yard Terminal in Brooklyn, New York, Contract No. NYNJRRR-644.531, approved by the Office of the Chief Engineer of the Port Authority of New York and New Jersey on January 8, 2015.

THE PORT AUTHORITY OF NY & NJ

NEW YORK AND NEW JERSEY RAIL, LLC

TRANSFER BRIDGE NO. 10 RECONSTRUCTION AT GREENVILLE YARD TERMINAL AND FENDER MODIFICATIONS AT 65TH STREET YARD TERMINAL IN BROOKLYN, NEW YORK

CONTRACT NO. NYNJRR-644.531

No.	Date	Revision	Approved

CHIEF OF DESIGN E/A BOOKLAYNOR — DATE 1-7-15

ASSISTANT DIRECTOR - PORT COMMERCE — DATE 1/6/15

DIRECTOR ENGINEER — DATE 1/8/15

Drawing Number G001

PDF : 11195000

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THE PORT AUTHORITY OF NY & NJ

HDR ENGINEERING

PETER J. DAMS
N.J. Professional Engineer # 42835
Certificate of Authorization # 24GE04253300

No.	Date	Revision	Approved

ENGINEERING DEPARTMENT

NEW YORK AND NEW JERSEY RAIL, LLC

GENERAL

Title
TRANSFER BRIDGE NO. 10 RECONSTRUCTION AT GREENVILLE YARD TERMINAL AND FENDER MODIFICATIONS AT 65TH STREET YARD TERMINAL IN BROOKLYN, NEW YORK

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Designed by	Drawn by	Checked by
G.SCRIANO	G.SCRIANO	K.PROTON

Date 01/08/2013

Contract Number NYNJRR-644.531

Drawing Number G002

PD# 171196000

Masters, Matt

From: Martinez, Fernando
Sent: Monday, December 29, 2014 10:49 AM
To: Lopez, Edward
Cc: Masters, Matt; Ehrlich, Joseph; Hoffer, Mark; Antes, Vincent; Wong, Yu
Subject: FW: Transfer Bridge 10

Note, Conrail has approved the Bridge 10 revised floor beam design. See below;

Fernando A. Martinez, R.A., A.I.A. - Senior Program Manager - Port Redevelopment
Port Commerce Department - Port Authority of New York & New Jersey
1210 Corbin Street, Elizabeth - New Jersey - 07201
Tel: 973-578-4507 (Tie Line: 07-4507) Fax: 908-629-5590 – Mobile: 917-636-2402
Email: famartin@panynj.gov

From: Tierney, Timothy [mailto:Timothy.Tierney@Conrail.com]
Sent: Monday, December 29, 2014 10:44 AM
To: Martinez, Fernando
Cc: Kaeser, William; Hill, Ryan M.; Levin, Eric
Subject: Transfer Bridge 10

Fernando: The revised floor beam drawings and calculations are acceptable to Conrail. Accordingly, all design comments provided by Conrail to PA have been satisfied.
Regarding the impact load design for Transfer Bridge 10, we consider this a unique design and our acceptance for Transfer Bridge 10 does not establish precedent for any future structural reviews performed by Conrail.

Tim Tierney

EXHIBIT B

U.S. Department of Transportation
Federal Highway Administration

New York Division

Leo W. O'Brien Federal Building
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August 20, 2014

In Reply Refer To:

Mr. Mark Hoffer
Director, New Port Initiatives
Port Authority of
New York and New Jersey
225 Park Avenue South, 11th Floor
New York, NY 10003

Dear Mr. Hoffer:

This letter is necessary to clarify FHWA's understanding regarding the use of Cross Harbor Freight Improvement, federal-aid funds for the emergency demolition of Transfer Bridge 11 at Greenville Yard, Jersey City, NJ.

Before Superstorm Sandy FHWA, the PANYNJ, and NJ SHPO were in active consultation regarding what to do with the historic resource. At the time of the storm, no decision had been made on how to treat this resource moving forward. Rather, short-term stabilization work, funded by the earmark, was underway in order to keep the facility functional for the medium-term future.

However, due to the damages caused by the storm event, emergency demolition was required and was funded by the PANYNJ without federal-aid participation. At that time; FHWA could not have participated in the emergency demolition with earmark funding as it would be inconsistent with the on-going historic preservation consultation process, nor would FHWA consider reimbursing the demolition now with earmark funding as it is still inconsistent with this process.

Please do not hesitate to call John Formosa at 212-668-2205 if you have any questions.

Sincerely,

John Formosa
Major Project Manager and NYC Liaison

DEPARTMENT OF THE ARMY PERMIT

Permittee: Port Authority of New York and New Jersey
Two Gateway Center, 14th Floor
Newark, New Jersey 07102
(973)565-7564

Permit No.: NAN-2013-01277

Issuing Office: New York District Corps of Engineers

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description:

The following activities are authorized by this permit at the existing Greenville Yards Harbor Transfer Facility:

New Transfer Bridge No. 10 and Control House : Discharge fill material into 0.052 acres of waters of the United States to facilitate the construction and installation of a new 160-foot long by 40-foot wide Transfer Bridge (No. 10) that consists of a 111-foot long bridge span; 39-foot long apron span, and an hydraulic jack supported by a 40-foot high overhead gantry. The Transfer Bridge No. 10 shall be supported by a 59-foot long by 14-foot wide concrete abutment consisting of fourteen (14) 30-inch diameter concrete piles, and two approximately 58-foot long by 13-foot wide out shore pile caps consisting of five (5) 30-inch diameter concrete piles. Each pile shall be drilled into place. Approximately 323 cubic yards of rock riprap shall be discharged at the base of the concrete bridge abutment and along adjacent areas of the shoreline. During installation activities, three temporary 65-foot long by 15-foot wide sheet pile cofferdams shall be installed around the concrete abutment and each out shore pile cap to allow work to proceed in the dry. All material excavated from the cofferdams shall be disposed of at a state approved upland site. Upon completion of the bridge abutment and pile cap installation activities, all three temporary steel sheet cofferdams shall be removed from the waterway to a state approved upland site.

Construct and install a new pile supported 60-foot long by 40-foot wide two-story Control House and an associated pile supported 111-foot long by 7-foot wide access way. The control house shall be supported by three 50-

1145-2-303b (Upper New York Harbor/Port Authority of NY/NJ/discharge fill into waters of the U.S. to facilitate the construction and installation of a new Transfer Bridge (No. 10), Control House, new mooring and fendering monopiles and new dredging with upland disposal)

foot long by 3.5-foot wide concrete pile caps consisting of twelve (12) 24-inch diameter steel piles, and the access way shall supported by three 10-foot long by 3.5-foot wide pile caps consisting of a total of six (6) steel "H" piles. The steel piles and steel "H" piles shall be installed an impact hammer.

New Mooring and Fendering Monopiles: Construct and install six monopiles within the new Transfer Bridge No. 10 approach channel. Each mooring/fendering monopile shall consist of a 60-inch diameter pipe pile (or caisson) driven into bedrock with a 13-foot diameter foam filled donut fender ring and an associated steel fabricated bollard ring. All mooring and fender monopiles shall be drilled into place.

New Dredging with Upland Placement: Dredge, by environmental closed clamshell bucket and no barge overflow, approximately 13,133 cubic yards of material from a 1.2-acre area surrounding the new Transfer Bridge No. 10, and a 1.85-acre area within the proposed new Transfer Bridge No. 10 approach channel. Of the 13,133 cubic yards of material, approximately 8,804 cubic yards shall be dredged from the new Transfer Bridge No. 10 area to a depth of -15 feet below the plane of Mean Low Water (MLW) with one foot allowable overdepth (-16 feet North American Vertical Datum 1988, NAVD88), and approximately 4,329 cubic yards of material shall be dredged from the new Transfer Bridge No. 10 approach channel area to a depth of -15 feet below the plane of MLW with one foot allowable overdepth (-16 feet NAVD88). The dredged material shall be loaded, without barge overflow, into barges. The discharge of decant water from the holding barges into the waterway is authorized, subject to the requirements of the New Jersey Department of Environmental Protection Water Quality Certification (copy attached) issued for this project. All dredged material shall be disposed of at a state approved upland site.

All work will be performed in accordance with the attached permit drawings, and Special Conditions (A) through (M).

Project Location: IN: Upper New York Harbor

AT: Jersey City, Hudson County, New Jersey

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on July 29, 2017. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you

abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

(A) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the US Army Corps of Engineers (USACE), to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

(B) The permittee shall comply with all of the conditions and stipulations contained within the attached New Jersey Department of Environmental Protection Water Quality Certification and Coastal Zone Management Concurrence dated 24 April 2014 (Permit Number 0906-11-0012.3 WFD130001), and any amendments, thereto.

(C) Dredging and dredging disposal activities are prohibited from February 1 to May 31 to protect winter flounder early life stages and anadromous fish. All dredged material shall be disposed of at a state approved upland site.

(D) All dredging activities shall be undertaken in such a manner as to avoid large refuse piles, ridges across the bed of the waterway or deep holes, which have a tendency to cause injury to navigable channels or the banks of the waterway.

(E) In-water work associated with the Control House or its' access pier is prohibited between February 1 and May 31 to minimize impacts to winter flounder

and anadromous fish species;

(F) To minimize turbidity impacts, the permittee shall install silt curtains around all pile and mooring and fender monopile installations work areas;

(G) To minimize noise and vibration for winter flounder early life stages and anadromous fish aquatic species during driving of H-piles, a "soft-start" shall be utilized. A micarta cushion block shall also be utilized to reduce noise and vibration due to driving of H-piles and sheetpiles to the maximum extent practical.

(H) The permittee shall submit the project construction details using the enclosed "First Coast Guard District Request for Notice to Mariners Form" to the First Coast Guard District for publication in the Local Notice to Mariners before starting operations. This information should be-mailed to LMN@dl.uscg.mil or faxed to (617) 223-8291 a minimum of fourteen days before starting operations.

(I) The permittee shall notify the National Oceanic and Atmospheric Administration of the project completion and specifications so they may initiate the appropriate chart and Coast Pilot corrections. This must be submitted online at http://ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx.

(J) The permittee shall ensure any current, or future, outdoor lighting is located or shielded so that it is not confused with any aids to navigation and does not interfere with navigation on the adjacent waterway. If installed, the lights must be white and non-flashing.

(K) Within thirty (30) business days of the completion of dredging activities, the permittee shall submit four, engineering size, certified and sealed copies and one electronic file copy of post-dredge surveys, containing digital data in State Plane coordinates (NAD83/feet[MAW]), to the Corps. These surveys must have the authorized dredged area outlined, and an exact calculation of the volume of dredged material that was removed. These surveys shall be delivered to the following address:

Chief, Regulatory Branch
New York District U.S. Army Corps of Engineers
Jacob K. Javits Federal Building
New York, New York 10278-0090

(L) The permittee shall maintain a copy of this permit on all water borne vessels engaged in dredging, and in all in-water construction activities at the Greenville Yard Harbor Transfer Facility, as authorized by this permit.

(M) The permittee shall respond to all reasonable requests for information from the New York District Corps of Engineers, and provide necessary field support during field investigations and permit compliance inspections. Any representative of the Corps of Engineers shall be granted authorization to access the site for the purpose of site inspections.

PERMITTEE: Port Authority of New York and New Jersey
PERMIT NO.: NAN-2013-01277

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

(X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code 403).
(X) Section 404 of the Clean Water Act (33 U.S. Code 1344).
( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization:

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (See 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

(PERMITTEE) 7/16/14 (DATE)

Port Authority of New York and New Jersey

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

(DISTRICT ENGINEER) JUL 29 2014 (DATE)

For and in behalf of
Paul E. Owen
Colonel, U.S. Army
Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below. A copy of the permit signed by the transferee should be sent to this office.

(TRANSFEREE) (DATE)

ENG FORM 1721, Nov 86 EDITION OF SEP 82 IS OBSOLETE. *(33 CFR 325 (Appendix A))*

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF DREDGING & SEDIMENT TECHNOLOGY
Mail Code 401-06C, P.O. Box 420, Trenton, New Jersey 08625
Telephone: (609) 609-633-6801
www.state.nj.us/dep/landuse

PERMIT

In accordance with the laws and regulations of the State of New Jersey, the Department of Environmental Protection hereby grants this permit to perform the activities described below. This permit is revocable with due cause and is subject to the limitations, terms and conditions listed below and on the attached pages. For the purpose of this document, "permit" means "approval, certification, registration, authorization, waiver, etc." Violation of any term, condition or limitation of this permit is a violation of the implementing rules and may subject the permittee to enforcement action.	Approval Date April 24, 2014 Expiration Date April 24, 2019

Permit Number(s)	Type of Approval(s)	Enabling Statute(s)
0906-11-0012.3 WFD130001	Waterfront Development Permit – IP In-water Water Quality Certificate Acceptable Use Determination	NJSA 58:16A FH NJSA 13:19 CAFRA NJSA 12:5-3 WFD

Permittee:	Site Location:
Peter J. Zipf, P.E. Chief Engineer, PANYNJ 233 Park Avenue South, 7th Floor New York, NY 10003	Greenville Yards 20 Colony Road Municipality: Jersey City County: Hudson Block(s) & Lot(s): [1507; 17] [1507, 26]

Description of Authorized Activities

The construction of a new Transfer Bridge No. 10, a new control house, and associated navigational improvements including new fendering and mooring structures. New dredging to a depth of -15' mean low water (MLW), plus 1 foot of overdredge for a maximum allowable depth of -16' MLW. The total volume of material that will be removed is 13,607 cubic yards.

The proposed dredging will impact 321 square feet (0.007 acres) of intertidal and subtidal shallows. Mitigation for impacts to this resource is required as a condition of this permit. All mitigation shall be conducted prior to or concurrent with the construction of the approved project.

Prepared by:	Received and/or Recorded by County Clerk
Gary Nickerson THIS PERMIT IS NOT EFFECTIVE AND NO CONSTRUCTION APPROVED BY THIS PERMIT, OR OTHER REGULATED ACTIVITY, MAY BE UNDERTAKEN UNTILTHE APPLICANT HAS SATISIFIED ALL PRE-CONSTRUCTION CONDITIONS AS SET FORTH HEREIN.	

This permit is not valid unless authorizing signature appears on the last page.

CONDITIONS APPLICABLE TO ALL LAND USE PERMITS:

1. In accordance with the applicable regulations, any person who is aggrieved by this decision or any of the conditions of this approval may request a hearing within 30 days after notice of the decision is published in the DEP Bulletin. This request must include a completed copy of the Administrative Hearing Request Checklist. The DEP Bulletin is available through the Department's website at http://www.nj.gov/dep/bulletin and the Checklist is available through the Division's website at http://www.nj.gov/dep/landuse/forms/lurpaahr.pdf In addition to your hearing request, you may file a request with the Office of Dispute Resolution to engage in alternative dispute resolution. Please see the website www.nj.gov/dep/odr for more information about this process;

2. The permittee, its contractors and subcontractors shall comply with all conditions of this permit, supporting documents and approved drawings; and

   i. Plans and specification in the application and conditions imposed by this permit shall remain in full force and effect so long as the proposed development or any portion thereof is in existence, unless modified by the Department in writing;
   ii. If this permit contains a condition that must be satisfied prior to the commencement of construction, the permittee must comply with such condition(s) within the time required by the permit or, if no time specific requirement is imposed, then within six months of the effective date of the permit, or provide evidence satisfactory to the Department that such condition(s) cannot be satisfied; and
   iii. Any noncompliance with this permit constitutes a violation, and is grounds for enforcement action, as well as suspension and/or termination of the permit; This approval does not in any way affect the right of the State to seek and collect monetary penalties or to take other enforcement action, should it be determined that a violation has occurred onsite;

3. The permittee shall take all reasonable steps to prevent, minimize or correct any adverse impact on the environment resulting from activities conducted pursuant to the permit, or from noncompliance with the permit;

4. The issuance of this permit shall in no way expose the State of New Jersey or the Department to liability for the sufficiency or correctness of the design of any construction, structure or structures. Neither the State nor the Department shall, in any way, be liable for the loss of life or property which may occur by virtue of the activity of development resulting from any permit;

5. The permittee shall immediately inform the Department of any unanticipated adverse effects on the environment not described in the application or in the conditions of this permit. The Department may, upon discovery of such unanticipated adverse effects, and upon the failure of the permittee to submit a report thereon, notify the permittee of its intent to suspend the permit;

6. This permit can be modified, suspended or terminated for cause. The filing of a request to modify an issued permit by the permittee, or a notification of planned changes or anticipated noncompliance does not stay any condition of this permit;

7. This permit does not convey any property rights of any sort, or any exclusive privilege;

8. A copy of the permit and other authorizing documents including all approved plans and drawings shall be maintained at the authorized site at all times and made available to Department representatives or their designated agents immediately upon request.

   i. The permittee shall also furnish to the Department within a reasonable time any information that the Department requests to determine compliance with this permit or to determine whether cause exists for suspension or termination of this permit; and
   ii. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by the permit;

9. The permittee shall allow an authorized representative of the Department, upon notification under current rule and upon the presentation of credentials, to:

   i. Enter upon the permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;
   ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit; and
   iii. Inspect at reasonable times any facilities, equipment, practices or operations regulated or required under the permit. Failure to allow reasonable access under this section shall be considered a violation of this chapter and subject the permittee to enforcement action;
   iv. Sample or monitor at reasonable times for the purposes of assuring compliance with applicable rules;

10. No change in plans or specifications upon which this permit is issued shall be made except with the prior written permission of the Department;

11. The permittee shall provide reports to the Department as follows:

   i. Monitoring results shall be reported at the intervals specified elsewhere in this permit;
   ii. The permittee shall immediately report to the Department by telephone at (877) 927-6337 any noncompliance that may endanger health or the environment. In addition, the permittee shall report all noncompliance to Bureau of Coastal and Land Use Compliance and Enforcement, 401 E. State Street, 4th Floor, P.O. Box 422, Mail Code: 401-04C, Trenton, NJ 08625, in writing within five business days of the time the permittee becomes aware of the noncompliance. The written notice shall include: a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated length of time it is expected to continue; and steps taken or planned to reduce, eliminate and prevent recurrence of the noncompliance. Such notice shall not, however, serve as a defense to enforcement action if the project is found to be in violation of this chapter;
   iii. Where the permittee becomes aware that it failed to submit any relevant facts in an application, or submitted incorrect information in an application or in any report to the Department, it shall promptly submit such facts or information;

12. Development which requires soil disturbance, the creation of drainage structures, or changes in natural contours shall conduct operations in accordance with the latest revised version of "Standards for Soil Erosion Sediment Control in New Jersey," promulgated by the New Jersey State Soil Conservation Committee, pursuant to the Soil Erosion and Sediment Control Act of 1975, N.J.S.A. 4:24-42 et seq. and N.J.A.C. 2:90-1.3 through 1.14. and must obtain any required approvals from the local Soil Conservation District;

13. If any condition of this permit is determined to be legally unenforceable, modifications and additional conditions may be imposed by the Department as necessary to protect the public interest;

14. This permit is not transferable to any person unless the transfer is approved by the Department;

15. The permittee must obtain any and all other Federal, State and/or Local approvals. Authorization to undertake a regulated activity under these rules does not indicate that the activity also meets the requirements of any other rule, plan or ordinance. It is the applicant's responsibility to obtain all necessary approvals for a proposed project;

16. While the regulated activities are being undertaken, neither the permittee nor its agents shall cause or permit any unreasonable interference with the free flow of a regulated feature by placing or dumping any materials, equipment, debris or structures within or adjacent to the regulated area. Upon completion or abandonment of the work, the permittee and/or its agents shall remove and dispose of in a lawful manner all excess materials, debris, equipment, silt fences and other temporary soil erosion and sediment control devices from all regulated areas. Only clean non-toxic fill shall be used where necessary;

17. All excavated material and dredge material shall be disposed of in a lawful manner. (For example, it should be placed outside of any flood hazard area, riparian zone, regulated water, freshwater/coastal wetlands and adjacent transition area, and in such a way as to not interfere with the positive drainage of the receiving area);

18. If this document includes a Coastal Permit or a Flood Hazard Verification then, this document shall be recorded in its entirety in the office of the County Clerk or the Registrar of Deeds and Mortgages for each county where this project is located. Verified notice of this action shall be forwarded to the Department immediately thereafter.

SPECIAL CONDITIONS IN ADDITION TO THE STANDARD CONDITIONS:

19. The permittee shall immediately inform the Department of any unanticipated adverse effects on the environment not described in the application or in the conditions of this permit.

20. Any regulated activities undertaken on the site before a copy of this recorded restriction is submitted to the Department will be considered in violation of the implementing rules and this permit.

21. All necessary local, Federal, and other State approvals must be obtained by the applicant prior to the commencement of the herein-permitted activities.

22. Issuance of this permit does not in any way relinquish the State's ownership interest in the subject property, if any exists. The project site is located on Tidelands Map 672-2160.

23. The Port Authority shall comply with all conditions set forth in the Memorandum of Agreement among the Federal Highway Administration, the Port Authority of New York and New Jersey and the New Jersey State Historic Preservation Office regarding the Greenville Yard Lift Bridge Acquisition and Replacement Project in Hudson County, New Jersey.

19. Dredging is prohibited from February 1st through May 31st in order to protect winter flounder early life stages.

20. All barges used in the construction of the facility must float during all stages of the tide and must not rest on the river bottom.

21. The sediments shall be removed using a closed clamshell environment bucket.

22. The permittee shall employ the services of an independent dredging inspector to monitor dredging activities twice per week. The permittee shall submit the resume of the dredging inspector to the Department for review and receive written approval prior to the initiation of dredging.

23. The dredge shall be operated so as to control the rate of descent of the bucket so as to maximize the vertical cut of the clamshell bucket while not penetrating the sediment beyond the vertical dimension of the open bucket (i.e. overfilling the bucket). This will reduce the amount of free water in the dredged material, will avoid overfilling the bucket, and minimize the number of dredge bucket cycles needed to complete the dredging contract. The dredging contractor shall use appropriate software and sensors on the dredging equipment to ensure consistent compliance with this condition during the entire dredging operation. The independent dredging inspector shall monitor the operation of the software and sensors during the inspections required by Condition #37 of this authorization. Any malfunction of the software and sensors on the dredge at any time shall be immediately reported to the independent dredging inspector and the permittee by the dredging contractor and shall be immediately repaired to working order.

24. The closed clamshell environmental bucket shall be equipped with sensors to ensure complete closure of the bucket before lifting the bucket. Said sensors shall be operational during the entire dredging operation.

25. Where a closed clamshell environmental bucket is required, it shall be lifted slowly through the water, at a rate of 2 feet per second or less.

26. Dredged material shall be placed deliberately in the barge in order to prevent spillage of material overboard.

27. "Barge Overflow" is not permitted for this dredging project.

28. All barges or scows used to transport sediment shall be of solid hull construction or be sealed with concrete.

29. The gunwales of the dredge scows shall not be rinsed or hosed during dredging except to the extent necessary to ensure the safety of workers maneuvering on the dredge scow.

30. All decant water holding scows shall be water tight and of solid hull construction.

31. Decant water from this project may only be discharged within the channel from where the sediments originated, in close proximity to the dredging contract area. Discharge to another receiving waterbody requires prior approval from the Department, and may require a New Jersey Discharge Pollutant Elimination System/Discharge to Surface Water (NJDPES/DSW) permit.

32. All decant water shall be held in the decant holding scow a minimum of 24 hours after the last addition of water to the decant holding scow. Said water contained in the decant holding scow may only be discharge after this mandatory 24 hour retention time.

    Should the contractor wish to reduce the required holding time, the contractor shall demonstrate that the reduced holding time is sufficient to meet a total suspended solids (TSS) background value of 30 mg/L. This TSS action level is consistent with the ambient TSS results presented in the NY District study entitled "NY and NJ Harbor Deepening Project - Total Suspended Solids (TSS) Monitoring, Interim Report" (January 2006). The total suspended solids shall be determined through gravimetric analysis. No discharge shall be permitted from the decant holding scow until the results of the gravimetric analysis have confirmed that the 30 mg/L background level has been achieved. No additional water shall be added to the decant holding scow between the time of sample acquisition and discharge. Upon successful demonstration that the reduced holding time is sufficient to meet the TSS background level of 30 mg/L, the monitoring of TSS may be suspended and the demonstrated settling time shall replace the 24 hour minimum. A successful demonstration of the reduced holding time efficiency shall be determined once three consecutive TSS analyses have confirmed that the 30 mg/L action level has been achieved by the reduced holding time.

Should the contractor wish to demonstrate this reduced holding time, all records including time of last addition of decant water into the scow, time of TSS sampling and the results of TSS sampling shall be submitted to the NJDEP as soon as they become available, together with a request for a reduced holding time.

24. During pumping of the decant water from the holding scow, great care shall be taken to avoid re-suspending or pumping sediment which has settled in the decant holding scow.

25. The dredging contractor shall complete and submit the attached Dewatering Form to the independent dredging inspector on a weekly basis as part of the Quality Control Report provided to the permittee. Said Dewatering Form shall be certified by the independent dredging inspector that they have witnessed the dewatering process during the preceding week. The permittee shall submit the completed Dewatering Form with appropriate certifications by email to the Office of Dredging and Sediment Technology for the preceding week.

26. The independent dredging inspector shall perform inspections of the dredging contract a minimum of twice per week using the attached WQC Field Inspector form. The permittee shall submit the completed inspection forms to the NJDEP on at least a weekly basis.

ACCEPTABLE USE DETERMINATION:

27. The non-HARS suitable dredged material from this project shall be mixed with 8% Portland cement only.

28. This permit authorizes the placement of approximately 13,607 cubic yards of non-HARS suitable material from this project has been found acceptable for placement at the following upland placement sites:

<u>Bellmawr Waterfront Development LLC Site</u>

No more than 478,000 cy (in place volume) of processed dredged material shall be placed at this site.

The contractor shall comply with all conditions relating to processed dredged material placement as specified in the Landfill Closure Plan/Remedial Action Workplan Approval (s) dated July 31, 2008, as modified on May 5 2009, issued to Bellmawr Waterfront Development, LLC for the closure of the Fazzio Bellmawr, Fazzio Deptford and Bellmawr Borough Landfills.

The designated contractor shall comply with all conditions specified in the Waterfront Development Permit, Freshwater Wetlands Statewide General Permit #4, and Coastal Wetlands Permit issued November 20, 2008 and any modifications thereto (DEP File #0000-06-0006.1 (FWW080001, 0000-06-0006.2 WFD 080001, CSW080001). The designated contract shall comply with all conditions specified in the Coastal General Permit #15 issued March 30, 2007 (0000-06-0006.1 CSW060001).

<u>Dupont Grassell Site</u>

The designated contractor shall comply with all condition specified in the October 15, 2010 Remedial Action Work Plan Approval, and any amendments thereto. The designated contractor shall comply with all conditions specified in the document entitled "Protocol for Review, Certification and Acceptance of Off-Site Recyclable Fill Materials" dated April 5, 2011, and approved by the Site Remediation Program on April 6, 2011.

29. Placement of material from this project at NJ Zinc site in Palmerton, Pennsylvania, and/or at Waste Management's Grows North and Tullytown facilities in Morrisville, Pennsylvania is addressed in separate authorizations and approvals issued by the Pennsylvania Department of Environmental Protection.

30. The identified processing facility for the non-HARS suitable material, shall comply with all conditions imposed in the WFD/AUD and any subsequent modifications or renewals thereto for the dredged material processing facility.

31. All trucks used to transport processed dredged material to the above referenced placement sites shall be tarped pursuant to the applicable State DOT requirements or applicable regulatory agency requirements.

32. If the permittee elects to dispose/use the dredged material from this project at an alternate location, written authorization must be obtained from the Office of Dredging and Sediment Technology prior to the transport of any dredged material to said alternate disposal location. Any alternate disposal/use location must obtain all required state, local and federal permits before the Office would grant a modification of this permit to transport dredged material to the alternate location.

MITTIGATION CONDITIONS:

33. The permittee shall mitigate for the loss of 0.007 acres of intertidal subtidal shallows through either an (on-site or off-site) (creation, restoration or enhancement) project.

34. All mitigation shall be conducted prior to or concurrent with the construction of the approved project (N.J.A.C. 7:7E-3.27h(3). Concurrent means that at any given time, the mitigation must track at the same or greater percentage of completion as the project as a whole.

35. At least 90 days prior to the initiation of regulated activities authorized by this permit, for an on-site or off-site individual mitigation project, the permittee must submit a mitigation proposal to the Division of Land Use Regulation (Division) for review and approval. Prior to commencement of regulated activities authorized by this permit, the Division must approve of the proposed mitigation project in writing.

36. If the applicant is considering obtaining land to satisfy a mitigation requirement, the Department strongly recommends that the permittee obtain the Department's conceptual review of any land being considered as a potential mitigation area.

37. If the permittee is purchasing credits from a mitigation bank to satisfy a mitigation requirement, prior to the initiation of regulated activities authorized by this permit, the permittee shall submit proof of purchase for 0.007 mitigation credits from an approved wetland mitigation bank to the attention of the Mitigation Unit Supervisor, NJDEP, Division of Land Use Regulation at Mail Code 501-02A, P.O. Box 420, Trenton, NJ 08625-0420.

The drawing(s) hereby approved consists of eight sheets entitled:

"CROSS HARBOR FREIGHT PROGRAM TRANSFER BRIDGE NO. 10 RECONSTRUCTION AT GREENVILLE YARD TERMINAL AND FENDER MODIFICATIONS AT 65TH STREET YARD TERMINAL IN BROOKLYN," dated 09/06/2013, last revised 12/06/2013, signed by H. Protin

a. "LOCATION MAP AND SITE PLAN," drawing number G005
b. "FOUNDATIONS GENERAL PLAN," drawing number S001
c. "BRIDGE 10 FOUNDATIONS PLAN AND SECTION," drawing number S002

"CROSS HARBOR FREIGHT PROGRAM TRANSFER BRIDGE NO. 10 RECONSTRUCTION AT GREENVILLE YARD TERMINAL," dated 09/06/2013, last revised 12/06/2013, signed by H. Protin

a. "BRIDGE 10 ABUTMENT PLAN AND SECTIONS," drawing number S004
b. "CONTROL HOUSE PLATFORM FOUNDATION PLAN SECTION," drawing number S005
c. "DREDGE PLAN OVERALL," drawing number S209
d. "DREDGE PLAN AT BRIDGE NO. 10," drawing number S210
e. "DREDGE SECTIONS AT BRIDGE NO. 10," drawing number S211

4/24/14
DATE

Suzanne U. Dietrick, Chief
Office of Dredging and Sediment Technology

Homeland Security

U.S. COAST GUARD

First Coast Guard District

DATE: _____

NAME: _____

PHONE NUMBER: _____

EMAIL ADDRESS: _____

COMPANY NAME: _____

TYPE OF WORK: _____

_____

WATERWAY & LOCATION WHERE WORK WILL BE DONE: _____

_____

LAT/LONG: (Degrees, Minutes, Thousandths of seconds) _____

_____

BEGINNING/ENDING DATES: _____

HOURS OF OPERATION: _____

EQUIPMENT ON SCENE: _____

_____

PASSING ARRANGEMENTS/Time to move vessels to not impede navigation: _____

_____

RADIO FREQUENCY (IF USED): _____

DISPOSAL SITE (IF USED): _____

NOAA Chart Number for the area: _____

EMAIL FORM TO LNM@d1.uscg.mil or fax to Mary Swanson @ 617-223-8291 two weeks before the work is to begin. The LNM (Local Notice to Mariners) can be found online at: http://www.navcen.uscg.gov.

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

CENAN-OP-R

IMPORTANT

This letter must be completed and mailed to the Regulatory Branch at the above address following completion or cancellation of work authorized under the permit.

Permittee: **Port Authority of New York and New Jersey** Permit No. **NAN-2013-01277**

Date Permit Issued: JUL 2 9 2014 Expiration Date: JUL 2 9 2017

Waterway: **Upper New York Harbor**

City & State: **Jersey City, Hudson County, New Jersey**

Check and complete applicable item(s) listed below:

____ Work was completed on _____.

____ Work will not be performed on the project.

____ Deviation from work authorized in permit is explained below.

____ Other (explain) _____

_____

____ For dredging projects, list the volume of material dredged, and the amount placed at each disposal location (if more than one).

_____ cubic yards placed at _____

_____ cubic yards placed at _____

_____ cubic yards placed at _____

_____ _____

Signature of Permittee Date

Fold this form into thirds, with the bottom third facing outward. Tape it together and mail to the address below **or FAX to (212) 264-4260.**

_____

_____

_____

Place Stamp Here

Department of the Army
New York District Corps of Engineers
Jacob K. Javits Federal Building
26 Federal Plaza, Room 1937
ATTN: CENAN-OP-R
New York, New York 10278-0090

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

CENAN-OP-R

IMPORTANT

This letter must be completed and mailed to the Regulatory Branch at the above address prior to commencement of any work authorized under the permit.

Permittee: **Port Authority of New York and New Jersey** Permit No. **NAN-2013-01277**

Date Permit Issued: JUL 2 9 2014 Expiration Date: JUL 2 9 2017

Waterway: **Upper New York Harbor**

City & State: **Jersey City, Hudson County, New Jersey**

Work will commence on or about: _____

Name, Address & Telephone Number of Contractor:

_____ _____

Signature of Permittee Date

Fold this form into thirds, with the bottom third facing outward. Tape it together and mail to the address below **or FAX to (212) 264-4260.**

Place Stamp Here

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