Hunts Point Food Distribution Center

Final Engineering Report

Parcels C OU-1 & C OU-2, Bronx, NY

- Final -

Prepared for:

New York City Economic Development Corporation

110 William Street, New York, New York 10038

Prepared by:

HDR

One Blue Hill Plaza- 12th Floor, Pearl River New York 10965

August 2010

Revised - October 2010

TABLE OF CONTENTS

LIST OF APPENDICES (on enclosed CD)

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

The New York City Department of Business Services (NYCDBS) entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation(NYSDEC) on December 11, 2000, to investigate and remediate a 9.3-acre property located in the Borough and County of the Bronx, New York. Under the provisions and requirements of the NYSDEC Voluntary Cleanup Program (VCP), Henningson, Durham and Richardson Architecture & Engineering P.C. in association with HDR Engineering (HDR) is submitting this Final Engineering Report (FER) on behalf of the New York City Economic Development Corporation (NYCEDC) for the Operable Units 1 and 2 of Parcel C (Site C OU-1 and Site C OU-2, respectively) Site Number V00412-2 (Figure 1). Parcel C is located in the Hunts Point Food Distribution Center (HPFDC) in the Hunts Point neighborhood of the Bronx, New York. The property was remediated to commercial use and Parcel Site C OU-1 is now the location of the Anheuser-Busch New York City Warehouse of Distribution (WOD). Site C OU-2 will become public green space along the waterfront as part of the South Bronx Greenway, South Market Loop.

This FER is intended to serve as documentation that the approved remedies for Sites C OU-1 and C OU-2 have been implemented in accordance with the Response Plan (Remedial Action Work Plan) for Parcel C dated November 2001 and submitted to NYSDEC and the New York State Department of Health (NYSDOH), and approved in a January 22, 2002 letter from NYSDEC to HDR. Copies of the January 22, 2002 letter and all other referenced NYSDEC approvals are provided in Appendix A. In response to this Engineering Report, NYCEDC, representing the City of New York, requests a formal notification of no further action (NFA) for VCP Parcel C Operable Units 1 and 2 (Site No. V00412-2).

1.1 Site Location and Boundaries

The project site (Site) is located in the southeastern portion of the HPFDC. The overall Site is comprised of two parcels: the Anheuser-Busch Redevelopment Parcel (AB Parcel) and the Greenway Park Redevelopment Parcel (GP Parcel). The AB Parcel includes the VCP Parcel Site C OU-1 and adjacent properties of similar use. The GP Parcel includes the VCP Parcel Site C OU-2 and adjacent properties of similar use. All of the Site boundaries and parcels are defined in detail later in this section and depicted in Figure 2. The HPFDC is located in the South Bronx on the Hunts Point peninsula extending into the East River. The entire HPFDC is relatively level with some minor topographic highs and lows. Underground storm drains across the Hunts Point peninsula direct surface drainage to the river outfalls. Much of the peninsula is developed and there are plans for the redevelopment of the remaining parcels on the peninsula.

At the time of the initial investigations, Parcel Sites C OU-1 and C OU-2 were not segregated into operable units. They were intended for remediation and redevelopment as a single unit. The South Bronx Greenway Master Plan put out by The City of New York and NYCEDC in

partnership with Sustainable South Bronx and The Point CDC was incorporated into the redevelopment of HPFDC in the Fall of 2006, at approximately the same time as the lease negotiations for Parcel C. The Master Plan identified multiple sites where public open space could be created as a greenway (see Figure 3). The South Bronx Greenway Master Plan proposed extending the greenway along the western shores of the Bronx and East Rivers. A portion of Parcel C was included in this extension, which is designated as the South Market Loop of the South Bronx Greenway. The portion of Parcel C included in the Greenway was segregated as Operable Unit 2 of Parcel C. Site C OU-2 is located along the northern and eastern perimeters of Site C OU-1. The remediation and redevelopment of Site C OU-2 and the Greenway Parcel was completed concurrently with the remediation and redevelopment of Site C OU-1 and under the direction of one Site Management Plan (SMP) approved in a July 2, 2008 letter from NYSDEC to NYCEDC (Appendix B). The SMP has been re-titled to include Operable Units 1 and 2 of Parcel C.

The redevelopment project described in this report occupies an area larger than the metes and bounds of the approximate 9.3-acre VCP Parcel C (Site No. V00412-2). The metes and bounds description and survey map are included in Appendix C. In order to coordinate information presented in previously submitted documents with this FER, the following description defines and identifies all parcels included in and relevant to this overall redevelopment project, and Figure 2 shows each of the areas identified and defined below.

- The project site (Site) includes a redevelopment area of approximately 12.6 acres. It is bound on the north by the Krasdale Foods parking lot, on the south by the 600 Food Center Drive parking lot, on the west by a New York City-owned rail line and further west by Food Center Drive, and on the east by the East River. All other parcels defined in this section are included in the Site.

- The AB Parcel includes the entire area occupied by the Anheuser-Busch lease. The AB Parcel is approximately 10.6 acres and includes all of Site C OU-1.

- Site C OU-1 is the area of the AB Parcel that is included in the VCP Parcel C (V00412-2) metes and bounds minus the parcel of land slated for the South Bronx Greenway (Site C OU-2).

- The non-VCP AB Parcel borders Site C OU-1 to the south. It contains the former Consolidated Edison of New York (Con Edison) easement and Dock Road right-of-way. Because this parcel is outside of the originally investigated VCP Parcel C, it has not been investigated under the VCP; however, the SMP, discussed in more detail later in this report, was applied to all work completed at the Site and conditions specified in the SMP for the VCP portion of the development Site also apply to this area. The NFA granted by NYSDEC and NYSDOH will not apply to this parcel because it is not in the VCP.

- The Iroquois Gas Transmission Pipeline VCP Easement (Iroquois Easement) is located at the southern perimeter of the AB Parcel. The Iroquois Easement covers approximately

0.5 acre and has already received a NFA from NYSDEC and NYSDOH (Attachment A). Because it was located within the Site, the SMP was also applied.

- The GP Parcel is the entire area to be occupied by the future South Market Loop of the South Bronx Greenway. It is located along the northern and eastern perimeters of the AB Parcel. Site C OU-2 is fully contained within the GP Parcel. The GP Parcel is approximately 1.9 acres.
- Site C OU-2 is the area of the GP Parcel that is included in the VCP site (V00412-2) metes and bounds. There is an area within the Greenway that is not within the formal VCP but will be covered under the SMP.

1.2 Site History

The Hunts Point peninsula is the former location of a Con Edison manufactured gas plant (MGP). The plant was constructed between 1924 and 1932 and operated into the early 1960s. The plant was constructed as a coal gasification plant to manufacture oven gas and carbureted water gas. By-products of the coal gasification process included coke, ammonium sulphate, coal tar, water gas tar, and light oil. At one time, there were approximately 46 buildings or structures at the facility involved in gas production.

The Site is located in the southeastern portion of the former MGP. Con Edison's historic maps, prepared during the time of facility operations, and aerial photos taken during the facility's operation, show the area of the Site primarily designated for coal storage piles. Former structures located on the Site included conveyor machines in the center of Site C OU-1 and a coal tower at the eastern edge in Site C OU-1 and Site C OU-2 (Figure 4).

Prior to redevelopment activities, Site C OU-1 was primarily vegetated with tall grasses and shrubs and a thin layer of organic soils. Site observations, described in Section 1.3, showed an upper layer of fill, consisting of residual coal from the historic Site operations. The residual coal layer is present over most of the Site but varies in thickness, with the greatest amount towards the center of the Site. Beneath the coal layer is sand mixed with ceramics, glass and other historic fill materials. The sand layer appears similar to dredged material but no documentation has been obtained relating to the actual source of the material. Occasional concrete or brick footings or foundations were also encountered. These footings were more commonly found in the southern portion of the Site. Coal tar impacted areas were also encountered, but these areas were generally small and limited in horizontal and vertical extent. The former Dock Road, part of the non-VCP AB Parcel, also bisected the southern half of the AB Parcel. Utilities in the Dock Road right-of-way included a water line, electric distribution lines, storm sewers, and a 72-inch storm water outfall that is still in service.

Portions of the pre-development AB and GP Parcels were located within the Federal Emergency Management Agency (FEMA) VE Zone. The VE Zone, as defined by FEMA's website, is the

flood insurance rate zone that corresponds to the 100-year coastal flood plain having additional hazards associated with storm waves. These areas are identified as having a significant flooding risk and require a submittal, and subsequent review and approval from the Department of Homeland Security (DHS) and the New York City Department of Buildings (NYCDOB), administrator of the flood insurance program locally, in order to construct buildings without significant flood protection. FEMA zoning is discussed in more detail in Section 2.1.

1.3 Previous Reports

HDR, formerly Lawler, Matusky & Skelly Engineers LLP, under contract to NYCEDC, performed a subsurface investigation of Site C OU-1 and Site C OU-2 under a NYSDEC and NYSDOH-approved Scope of Work (SOW) dated September 1999. Following the investigation, a Response Plan was prepared to present the findings, assessment, and remedial action recommendations incorporating the Site redevelopment. The final Response Plan for Parcels C OU-1 and C OU-2, dated July 11, 2001, was filed for public comment and approved by NYSDEC in a January 22, 2002 letter from NYSDEC to NYCEDC (Appendix A). The initial developer cancelled the project and, several years later, a new developer completed the development project under a similar redevelopment plan. A Revised Redevelopment Plan entitled "Sections of the Redevelopment Plan for the Operable Unit 1 Portion of Parcel C, Bronx, NY", dated April 23, 2009 was subsequently submitted and approved May 20, 2009 in a letter from NYSDEC to HDR (see Appendix A).

1.4 Site Conditions

The Redevelopment of the AB Parcel included the construction of a single story warehouse of distribution. The structure sits on a pile supported concrete slab. The building is primarily constructed of insulated reinforced concrete panels with an attached two-story office structure. The remainder of the Site has been almost entirely covered with asphalt parking and pile supported concrete aprons. Minimal landscaping was completed surrounding the paved parking areas in the north and southwest corners. Initial plans included a single story satellite building for vehicle maintenance and container recycling. The satellite building was not included in this construction. Foundation piles were driven for the proposed building; however, they were cut down and the area was completed as part of the asphalt parking lot. This building may be erected at a later date. This portion of the site is outside the limits of the VCA; therefore, the NYSDEC release document will not cover this area.

The AB Parcel redevelopment and GP Parcel bulkhead rehabilitation were completed simultaneously. The GP Parcel bulkhead rehabilitation was also part of a larger bulkhead rehabilitation project that included three additional waterfront Sites: the adjacent 600 Food Center Drive, the northeast section of 200 Food Center Drive, and the eastern waterfront section of NYSDEC VCP Site B between the Vernon C. Bain Correctional Facility and the New York City Department of Sanitation (DSNY) property, designed and built by NYCEDC independently

of the Anheuser Busch development project. Behind the rehabilitated bulkhead, the GP Parcel has been regraded, capped and planted.

Based on truck counts, approximately 103,000 cubic yards (cyd) of fill material were placed on the AB and GP Parcels during development. Over 100,000 cyd of material was used on the AB Parcel to raise the elevation of the building slab to the FEMA 100-year flood elevation. Approximately 2,600 cyd were placed behind the bulkhead wall on the GP Parcel. The fill material used included approximately 34,517 cyd of material reused from the local bulkhead rehabilitation projects noted above. A detailed accounting of the fill importation is provided in Section 3.3.

2 PRE-CONSTRUCTION ACTIVITIES

2.1 FEMA Zoning

Prior to the commencement of construction, the recently revised FEMA flood maps were reviewed. During the review, it was determined that large areas of the AB Parcel and the GP Parcel were within the VE zone. The VE zone is defined by FEMA as a high velocity wave zone. Structures built within the VE zone must meet a number of specific stipulations and also require significant engineering for flood control. Raising the Site out of the VE zone also requires a number of evaluations, including a site survey, wave analysis and FEMA remapping.

Anheuser-Busch decided to raise the elevation of the Site in order to construct the building slab above the 100-year recurrence interval flood plain elevation. Anheuser-Busch made a FEMA submission for a Classification Letter of Map Revision (CLOMR) for the Site prior to demolition and reconstruction of the bulkhead, or placement of fill material for the upland portion of the Site (AB Parcel). Anheuser-Busch received a CLOMR for the AB and GP Parcels to allow fill material to be placed on-site and for the building permits to be issued. Initial estimates approximated that 80,000 cyd of fill would be required; actual volumes imported to raise the grade of Site C OU-1 above the FEMA VE zone and out of the 100-year flood plain are discussed in detail in Section 3.3.

2.2 Bulkhead Construction Permit

Prior to commencing bulkhead demolition or reconstruction on the Site, Langan Engineering and Environmental Services (Langan) prepared a Joint Application for Permit for bulkhead rehabilitation pursuant to 6 NYCRR Part 661 – Tidal Wetlands, 6 NYCRR Part 608 – Protection of Waters, 6 NYCRR Part 621 – Uniform Procedures, Section 10 of the Rivers and Harbors Act, and Sections 401 and 404 of the Clean Water Act. The application requested authorization for the demolition of a relieving platform, stabilization of affected shoreline with riprap, and construction of a waterfront greenway in the GP Parcel. These activities were in anticipation of the upland redevelopment and remediation activities to take place simultaneously on the

AB Parcel. The bulkhead activities included excavation and placement of fill within a littoral zone, New York State navigable waters, and waters of the United States as well as reuse of excavated material on the adjacent upland parcel (Site C OU-1) as part of the remedial capping. The application was submitted by Langan to the New York State Department of State (NYSDOS) - Division of Coastal Resources, the United States Army Corps of Engineers (USACE) - New York District, and NYSDEC on June 30, 2006.

2.3 Stormwater Pollution Prevention Plan (SWPPP)

A Stormwater Pollution Prevention Plan (SWPPP) was prepared by HDR in conjunction with Bohler Engineering, the engineering design firm responsible for Anheuser Busch project, in order to satisfy the requirements of the NYSDEC-issued Permit No. GP-02-01, State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities, dated January 8, 2003. The SWPPP was required prior to the initiation of construction activities that disturbed greater than one acre of soil. In conformance with General Permit No. GP-02-01, the SWPPP provided stormwater management via temporary erosion and sediment controls. These measures were instituted to control runoff and prevent pollutants from entering the receiving water body during earth moving activities at the Site. The NYSDEC approved the January 2007 Final SWPPP in a letter dated March 1, 2007. A copy of the NYSDEC approval letter is included in Appendix A and a copy of the SWPPP can be found in Appendix D.

The measures used are outlined in detail in the document "Stormwater Pollution Prevention Plan, Revision 2", – January 2007. In general, the SWPPP measures on the AB Parcel included:

- Installation of a stabilized construction entrance along the main entrance to the development.
- Installation of a silt fence around the perimeter of the area where soils were placed in accordance with the erosion control plan. Two rows of silt fencing were used to protect the Bronx/East River.
- Construction of a temporary sediment basin and temporary riprap outlet along the eastern property line.
- Construction of a temporary diversion swale.
- Construction of temporary sediment traps in accordance with the erosion control plans.
- Maintenance of all erosion control devices in accordance with SWPPP weekly and rainfall event inspections.

The SWPPP was put in place on March 21, 2007 with the installation of the perimeter silt fence. Bohler Engineering completed all weekly and rainfall event inspections. On March 22, 2007, the silt fence was moved closer to the property line to ensure the entire work area was contained.

The sediment/retention basin excavation began on March 29, 2007 and was completed on March 30, 2007. The SWPPP remained in place, and all measures were maintained during the entire construction project. After the Site was paved, the sediment/retention pond was filled, and any remaining silt fence was removed.

2.4 Construction Site Management Plan (SMP)

HDR prepared a SMP to set guidelines for the management of Site soils and fill material as well as the importation and placement of fill materials during site redevelopment. The initial SMP drafted in December 2006 focused on protocols required for redevelopment as well as for future repair and maintenance of the surficial cap. The final SMP was submitted in March 2008 and approved by NYSDEC in a letter dated July 2, 2008 (Appendix A).

2.5 Soil Reuse Approvals

HDR obtained approvals from multiple agencies in order to reuse the excess materials generated during the bulkhead rehabilitation of Site C OU-2, the adjacent 600 Food Center Drive, the northeast section of 200 Food Center Drive, and the eastern waterfront section of Site B between the Vernon C. Bain Correctional Facility and the DSNY property. The material proposed and approved for reuse fell into the following categories:

- Upland Fill: For the purpose of this project, Upland Fill was defined as any upland material containing historic fill, soil, ash, and/or cinders, with some large materials such as concrete, brick or rock. It was removed from the tops of the relieving platforms or from behind the bulkhead walls and was displaced during bulkhead demolition. Upland Fill may have had minor impacts from petroleum compounds but materials approved for reuse did not contain coal tar, purifier waste or material saturated with petroleum. Large material, including concrete, bricks and rock, was screened from the Upland Fill and processed as C&D (see description below).

- Demolition Concrete or Construction & Demolition Debris (C&D): For the purpose of this project, C&D was defined as all concrete decking, bulkhead sea wall, pavement and remnant structures free from contaminants and historic fill and derived from the demolition projects. Additionally, C&D included large material, including concrete, bricks and rocks, screened from Upland Fill.

- Mudline Soils: For purposes of this project, Mudline Soils included material located beneath the bulkhead structures or material otherwise defined as Upland Fill that was below observed mean high water. Mudline Soils approved for reuse were free from free phase petroleum, purifier waste and/or coal tar.

In a Joint Application for an Article 25 Permit for the Bulkhead Rehabilitation of Site C OU-2, the reuse of excess materials on Site C OU-1 was included as part of the project description. Mudline materials were beneficially reused under the Article 25 Permit according to 6NYCRR

Part 360 Solid Waste Management Facility Regulations Section 360-1.2(a)4(IX). Additionally, NYSDEC, in a letter to NYCEDC dated August 1, 2006, approved of the reuse of the excess bulkhead materials from Site C OU-2 on the upland portions of Site C OU-1 (Appendix A). The approval was conditional based upon the removal of all material exhibiting visual or olfactory signs of contamination and the completion of sampling.

On January 22, 2007, in a letter from NYSDEC to HDR (Appendix A), NYSDEC approved of the reuse of C&D, specifically concrete, Upland Fill, and Mudline Soils from all four of the bulkhead projects (Site C OU-2, 600 Food Center Drive, 200 Food Center Drive and The New Fulton Fish Market on Site B) on Site C OU-1. The reuse was conditioned on the removal of all coal tar or purifier waste. Additionally, the approvals of the upland material required sampling for Toxicity Characteristic Leaching Procedure (TCLP) lead, reactivity and TCLP benzene, if a photoionization detector (PID) response above background or odor was observed.

Because 600 Food Center Drive was not enrolled in the NYSDEC VCP program (as discussed in the January 22, 2007 letter from NYSDEC to HDR located in Appendix A), a Beneficial Use Determination (BUD) Petition was submitted to the NYSDEC by HDR on behalf of the NYCEDC requesting approval for the importation of pavement, concrete, and overlaying soils (Upland Fill) and excavated sediment (Mudline Soils) generated from the demolition of bulkheads and relieving platforms at 600 Food Center Drive, for use on Site C OU-1. In a letter dated May 7, 2007, NYSDEC approved the BUD Petition (Appendix A) as #899-2-03. Sampling results are discussed in detail in Section 3.3.1 as are the actual volumes of material reused.

3 CONSTRUCTION ACTIVITIES

The redevelopment of the AB Parcel included the construction of a single structure containing 40,416 square feet of office space and 145,079 square feet of warehouse space to serve as the relocated center of the Anheuser-Busch WOD facility in the New York City area. Possible future construction on the Site may include a high-ceiling, single-story satellite building for vehicle maintenance and container recycling. The construction of this building has been postponed indefinitely. An area of vehicle maintenance and container recycling has been incorporated into the WOD structure. The piles in the area previously designated for the satellite building have been cut; the area is currently utilized as a parking area and will remain paved until it is determined that final expansion is necessary. The remainder of the AB Parcel is utilized primarily for parking and is covered with asphalt paving, access roads and a concrete apron. Several areas are open and landscaped. Figure 5 shows the facility layout including the building, parking and landscaped areas.

The GP Parcel has been capped with a geotextile fabric and one foot of clean fill. It was also seeded to prevent erosion. While this is not the final finished condition, for the purposes of the VCP, capping and engineering controls are completed. It will later be finished with additional

lighting and park amenities for passive recreation. All future development will be completed in accordance with the approved SMP and notification plan. To facilitate the construction phase of the AB and GP Parcels, the existing bulkhead and relieving platform were demolished and the shoreline was reconstructed behind a new bulkhead wall.

3.1 Air Monitoring

During all intrusive remedial activities, air monitoring was conducted around the perimeter of the site to monitor potential volatile organic compounds (VOCs) emissions. A copy of the Community Air Monitoring Plan (CAMP) is included in Appendix E. Real-time air particulate readings were collected with Mini Ram personal air monitors set at upwind and downwind locations each day. Based on CAMP readings, the open areas of the Site were watered regularly to suppress dust and particulates. Regular watering allowed construction to continue without delays. Copies of the CAMP monitoring logs are also included in Appendix D.

3.2 Clearing and Grubbing

In the beginning of March 2007, Gramercy Wrecking and Environmental Contractors, Inc. of Westbury, New York (Gramercy) commenced field operations at the AB Parcel with the removal and disposal of site trees, vegetation, and debris. All trees were cut at their bases and smaller vegetation was removed. The tree stumps were extracted and the roots were observed by HDR for visible evidence of residual coal material or waste. Any stumps that exhibited visual or olfactory evidence of impacts from coal tar or purifier waste, or contained coal material were staged separately for disposal at an appropriate facility. All remaining trees and shrubs were loaded into roll off containers for transport by Gotham Trucking to Vigliotti Long Island Compost Corporation in Westbury, New York.

The site contained significant quantities of debris including scrap metal, concrete blocks, wood, and residential garbage. In addition, a dilapidated building and a significant section of chain link fence with posts were removed for off-site disposal. The debris that could be recycled was segregated and sent to appropriate NYSDEC-registered solid waste recycling facilities. For example, scrap metal, including the dilapidated garage buildings and fencing, was transported to R&B Scrap; railroad ties, boulders, and mixed construction debris were transported to 110 Sand and Gravel of Babylon, New York.; and concrete and rock were crushed on site by Gramercy.

3.3 Fill Importation

Approximately 103,000 cyd of material was imported to the AB and GP Parcels in order to raise the elevation of the building footprint above the FEMA 100-year flood elevation and to raise the remainder of the Site to the appropriate elevations. Volume totals of reused material were based on truck capacities and number of loads and should be considered estimates. Material was imported from two major sources: the four Hunts Point Bulkhead rehabilitation projects and

NYSDEC-registered Part 360 solid waste recycling facilities. Table 1 provides a summary of all of the material imported to the Site. Details of the material importation are provided in the following sections.

3.3.1 Reuse of Excess Bulkhead Materials

Based on engineering plans and drawings, the entire volume of material, regulated under NYSDEC Part 360 Solid Waste Management Regulations, was approved for reuse and available from the bulkhead rehabilitation projects. Material approved for reuse was generally classified as Upland Fill, C&D, or Mudline Soils. Based on truck capacities and number of loads, it has been estimated that approximately 34,500 cyd of material was imported and placed appropriately on-Site. All Upland Fill and Mudline Soils were placed on Site C OU-1 for reuse under the final cap. Crushed concrete was placed, on Site C OU-1 and the non-VCP portions of the AB Parcel, under the engineered cap and building footprint. All reuse of material was in accordance with the approved NYSDEC BUD (#899-2-03), NYCRR Part 360 and the Site C OU-1 SMP. Photographs of the bulkhead demolitions are included in the photo log (Appendix F).

3.3.1.1 Upland Fill

Upland Fill was generated from the GP Parcel, 600 Food Center Drive and Site B (The New Fulton Fish Market). Specifically, it was generated by the demolition of relieving platforms at 600 Food Center Drive and the GP Parcel, as well as the demolition of the steel cofferdams at Site B. Table 2 shows the origins and total volumes of Upland Fill imported to Site C OU-1. All Upland Fill Importation logs and associated sampling data are included in Appendix G.

The Upland Fill reused was generally classified under NYSDEC Part 360 Solid Waste Management Regulations as industrial waste. This is consistent with the fill materials found on other sites in Hunts Point. Upland fill removed from the bulkheads for reuse on Site C OU-1 contained historic fill, soil, ash, cinders and coal, which meets the NYCRR Part 360-1.2(b)(88) definition of industrial waste. Industrial waste was not observed in the fill material encountered in the cofferdams cut down on Site B. The cofferdams we observed to be partially filled with a medium to coarse light brown sand. Materials excluded from reuse included fill containing coal tar, purifier waste, and/or petroleum products. If this waste material was encountered, it was excavated, stockpiled, sampled and removed for disposal as described in Section 3.5. As stated previously, all Upland Fill was placed on the VCP portion of the AB Parcel (Site C OU-1). Large materials, including rocks/concrete/bricks, were removed from the Upland Fill and processed with the bulkhead C&D materials to a size that was accepted by the engineers for reuse.

Upland Fill generated at the beginning of the GP Parcel bulkhead rehabilitation was excavated and stockpiled in 500 cyd piles. The material was then sampled for TCLP Metals and Reactivity. One sample exhibited an elevated PID response and was sampled for TCLP benzene. All

samples were collected as a four-point composite sample. The sample was homogenized, packed in the appropriate laboratory provided glassware, and shipped under chain-of-custody to Hampton Clarke/Veritech (HC/V) Laboratory of Fairfield, New Jersey for the analysis. Analytical results were compared to the Federal Resource Conservation and Recovery Act (RCRA) Subtitle C TCLP Regulatory Limits. All samples were found to be below TCLP regulatory levels and found to be non-reactive. Materials were approved for relocation, staging and eventual spreading on Site C OU-1 based on a review of the analytical results and physical condition of the material against the NYSDEC-approved criteria. Summaries of the results from the material sampling are shown on Table 3.

After the initial stockpiling, HDR requested and received approval from the NYSDEC to begin in-situ soil sampling of the Upland Fill material. The remainder of the GP Parcel (the south section), 600 Food Center Drive, and Site B Upland Fill materials were sampled in-situ for TCLP Metals and Reactivity. At each site the Upland Fill excavation areas were broken up into 500- to 1000-cyd in-situ volumes and sampled by accessing the material using the bucket of a rubber tire backhoe. Each 500- to 1000-cyd in-situ sample area was divided into four quadrants and a test pit was excavated in the center of each of the four quadrants (providing a four-point composite for each area). The composite sample was then collected, homogenized, packed in laboratory provided glassware, and shipped under proper chain-of custody to HC/V. Analytical results of in-situ sampling were also compared to RCRA Subtitle C TCLP Regulatory Limits. The resulting analyses found all material to be below TCLP regulatory levels and non-reactive. Upon review of the sample results, the Upland Fill was excavated, screened to the appropriate size as specified by the SMP, transported to Site C OU-1 and placed as directed by the Anheuser-Busch contractor team. Locations of the in-situ samples collected are shown on Figures 6, 7 and 8. Results of the in-situ samples are shown on Table 3.

3.3.1.2 Demolition Concrete (C&D)

Demolition Concrete, or C&D, was generated at the GP Parcel, 600 Food Center Drive, Site B (The New Fulton Fish Market), and 200 Food Center Drive. C&D was derived from the concrete decking, bulkhead sea walls, remnant structures, and Upland Fill screenings. In a letter dated March 30, 2007 (Appendix A), NYSDEC approved the crushing of the C&D material on Site C OU-1 for reuse anywhere on the AB Parcel. Prior to crushing, concrete was broken into sizes that were manageable for transportation to the AB Parcel. All C&D was observed to be free from MGP waste material and protruding metal was removed from the concrete. C&D was then crushed to the appropriate gradation in accordance with both the Site engineering requirements and the SMP. Rebar and other small metal objects were removed from the crushed material using magnetic separation. The crushed material was then stockpiled and spread on any areas of the AB Parcel as necessary for site filling. The total volume of crushed C&D imported to the AB Parcel is shown on Table 2.

3.3.1.3 Mudline Soils

Mudline materials were generated from the GP Parcel and Parcel B. Mudline materials were approved for beneficial reuse by the NYSDEC based on data collected during the design phase of the bulkhead projects. Supplementary samples were required by NYSDEC for the reuse of mudline material generated from the 600 Food Center Drive portion of the bulkhead rehabilitation. The mudline materials at 600 Food Center Drive were re-sampled on June 13, 2007 after the platform above them was removed. Sample locations are shown on Figure 8 and Table 4 includes a summary of the analytical results. Following additional evaluation of the required riprap slopes, it was determined that the mudline material located at 600 Food Center Drive would not require excavation. The Mudline Soils were covered with a layer of geotextile fabric which was subsequently covered with riprap in accordance with the approved permits and design drawings.

All mudline materials excavated from the GP Parcel and Parcel B sites during the bulkhead rehabilitation projects were reused on Site C OU-2 as backfill behind the newly constructed bulkhead wall.

3.3.2 RCA Importation

Under the terms and conditions of the NYSDEC-approved SMP, recycled concrete aggregate (RCA) was used as backfill material at the Site. RCA was obtained from two sources: Bronx County Recycling, LLC of 475 Exterior Street, Bronx, NY (NYSDEC Registration Number 03W87), and Durante Brothers Construction Corp. located at 31-40 123rd Street, Flushing, NY (NYSDEC Registration Number 41W22). Bronx County Recycling and Durante Brothers Construction supplied approximately 63,927 cyd of alternative "B" RCA for Site fill during the construction and grading portion of this project. Copies of the current registrations for both facilities are included in Appendix H. All imported RCA was placed under the final site cap.

Table 5 includes a detailed list of fill importation by date and company. The fill importation logs and associated truck tickets are included in Appendix I.

3.4 Bulkhead Reconstruction

As part of the HPFDC redevelopment, bulkhead demolition and reconstruction projects were performed along the four bulkheads discussed previously in this report: the GP Parcel (South Bronx Greenway project), southern portion of 600 Food Center Drive, the northeast section of 200 Food Center Drive, and the eastern waterfront section of Site B between the Vernon C. Bain Correctional Facility and the DSNY property (Figure 9). The following is a brief discussion of the reconstruction activities completed at each of the bulkhead locations.

3.4.1 GP Parcel

Prior to redevelopment of the AB Parcel and GP Parcel the bulkhead consisted of approximately 555 linear feet of dilapidated relieving platform, and 370 linear feet of collapsed relieving platform (Figure 10). Approximately 10 feet of urban fill material was on top of the dilapidated concrete relieving platform. In the section where the relieving platform had collapsed, concrete slabs (approximately 4 feet wide by 20 feet long by 1 foot thick) had previously been placed to control shore erosion. Photographs 3 and 4 show the pre-construction condition of the bulkhead at Site C OU-2 shoreline (Appendix F).

Demolition work on the existing concrete relieving platform structures commenced in March 2007 and continued through September 2007. Demolition work commenced at the southern corner of Site C, by removing the fill material (Upland Fill) on top of the concrete relieving platform and progressed north. Upland Fill material was stockpiled in approximately 500-cyd piles for subsequent sifting, transportation, and placement to the Site C OU-1 redevelopment parcel for placement beneath the cap. Once the base of the relieving platform was exposed, demolition of the concrete began with an excavator mounted hydraulic hammer. Concrete generated during the demolition was transported and stockpiled on Site C OU-1 for subsequent crushing. Demolition activities progressed from the south to the north stockpiling Upland Fill in 500-cyd piles and stockpiling concrete for subsequent on-Site crushing.

After all structures and fill were removed, the exposed slope was contoured and the toe of the slope was created per the design engineer's specifications. To control erosion while the bulkhead support piles were driven, a geotextile fabric and stone cover were placed over the exposed slope. The stone cover consisted of crystalline gravel for bedding stone and armor stone ranging from 1,100 pounds to 7,800 pounds per stone. Once stone placement was complete, epoxy coated support piles were driven to refusal (approximately 25 feet) along the new bulkhead line. The bulkhead was then finished with a poured solid concrete wall that encased the piles. The bulkhead wall extended to approximately 15 feet below the ground surface (bgs). Once the concrete bulkhead wall was in place, a finish course of armor was placed at its base. The upland portion (landside of the bulkhead wall) was back filled to existing grade with material that was generated from construction.

Photograph 7 (Appendix F) shows the post-construction shoreline of the bulkhead rehabilitation at Site C OU-2, from both land and river views. Figures 11a, 11b, and 11c show the initial design of the Site C OU-2 relieving platform rehabilitation project.

3.4.2 Site B

Prior to reconstruction, the New Fulton Fish Market bulkhead consisted of dilapidated steel cofferdams running along the southeastern portion of the Site (Figure 12). These cofferdams covered a distance of approximately 400 feet and half of the shoreline. Concrete caps and railing

structures were attached along the waterfront on the top of the steel sheeting cofferdams. The second half of the shoreline (southwestern portion) was a sloped surface covered in riprap that extended on both sides of a large double barrel New York City Department of Environmental Protection (NYCDEP) Combined Sewer Overflow (CSO) outfall. Photograph 10 (Appendix F) shows the pre-construction condition of the Site B shoreline.

Demolition work on the existing structures commenced on May 1, 2007. Work began at the southeast corner of the site by dismantling the concrete cap and steel railing along the top of the steel cofferdams. Concrete generated during the demolition was transported to Site C OU-1 and stockpiled for subsequent crushing. Upland Fill material was excavated, sifted and transported to the Site C OU-1 redevelopment parcel. When the steel cofferdams were exposed, a plasma torch was used to cut the steel sheeting and allow its removal. The slope and toe were then graded for installation of the geotextile fabric and stone cover. The stone cover consisted of crystalline gravel for bedding stone and armor stone ranging from 1,100 pounds to 7,800 pounds per stone. The southwest segment of shoreline was cleared of older cover and C&D. The material removed was staged on-Site and transported to Site C OU-1 for crushing and placement. A geotextile fabric was used to cover the exposed surface and bedding stone was placed from the toe of the slope to the top of the embankment. Armor stone was then placed on top of the bedding stone to stabilize the bank

In the area where the NYCDEP combined sewer outfalls (CSOs) are located, no intrusive work was conducted. The area was grubbed of weeds, and a geo-textile was placed beneath new bedding and armor stone. This area was then blended into the two surrounding areas by placing armor and bedding stone to create a seamless transition from areas where the riprap and cofferdams were removed to the NYCDEP outfalls.

Photograph 11 shows the post-construction shoreline of Site B from both land and river views (Appendix F). Figure 13 shows the final design of the Site B revetment project.

3.4.3 600 Food Center Drive

Prior to reconstruction, the 600 Food Center Drive (FCD) bulkhead consisted of a dilapidated concrete relieving platform along its southern portion (Figure 14). The platform extended along the entire shoreline of the parcel and consisted of a concrete deck approximately 2 feet thick with a bulkhead wall approximately 10 to 12 feet high. Behind the bulkhead wall and above the concrete deck were approximately 10 feet of fill material.

Demolition work on the existing concrete relieving platform structures commenced in April 2007 at the southern corner of this area by removing the fill material on top of the concrete relieving platform. Concrete generated during the demolition was transported to Site C OU-1 and stockpiled for subsequent crushing. Upland Fill material generated during excavation and demolition work was sifted and transported to the Site C OU-1 redevelopment parcel for

placement beneath the cap. Upon removal of the Upland Fill and shaping of the upland slope and mudline toe, a geotextile fabric and stone cover was placed to serve as erosion control. The stone cover consisted of crystalline gravel for bedding stone and armor stone ranging from 1,100 pounds to 7,800 pounds per stone. Once stone placement was complete on the slope, a concrete Jersey barrier wall was partially buried to act as a curb between the rip-rap slope and the repaved parking lot surface.

Photograph 9 shows the post-construction shoreline of the bulkhead rehabilitation at 600 Food Center Drive, from both land and river views (Appendix F). Figure 15 shows the final design of the 600 Food Center Drive relieving platform project.

3.4.4 200 Food Center Drive

The dilapidated pier and docking area associated with historic manufacturing operations at 200 Food Center Drive was demolished during the HPFDC bulkhead rehabilitation activities. Figure 16 shows the pre-construction condition of the 200 Food Center Drive shoreline.

Demolition work on the existing pier and docking structure commenced in May 2007 by dismantling the steel sheeting cover and steel columns. The upland portion of the concrete decking was then demolished using an excavator-mounted hydraulic hammer. Concrete generated during this phase of work was transported to Site C OU-1 and stockpiled for subsequent crushing. Once the upland portion of the pier and docking area was dismantled, demolition on the water side of the pier was started. Concrete decking over the water was broken in the same manner as the upland portion, pieces were then moved to land and transported to Site C OU-1, stockpiled and subsequently crushed. Once demolition of the steel structure and concrete decking was complete, the remaining pile supports were removed to below the mudline. Scrap steel and wood support piles generated during demolition activities were sent for off-site disposal or recycling. Once demolition activities were complete, the shoreline was regraded and hydroseeded to prevent erosion.

Figure 17 shows the final design of the demolition work that was conducted at 200 Food Center Drive.

3.5 Coal Tar Removal

Material containing coal tar was encountered during excavation activities on the AB Parcel. During the excavation activities, all coal tar waste encountered was segregated and transported to a staging area on the north end of Site C OU-1 for subsequent sampling and disposal. Section 3.5.1 describes the coal tar encountered during construction activities on the AB Parcel, and details the excavation of the coal tar and its sampling prior to disposal. Material containing coal tar was also encountered while demolishing the bulkhead on the GP Parcel. Section 3.5.2

similarly describes the coal tar excavated and sampled during construction activities on the GP Parcel.

3.5.1 AB Parcel

3.5.1.1 Coal Tar Excavation

The majority of the waste encountered on the AB Parcel was located at the north-northwest side of Site C OU-1 in close proximity to the excavation for the installation of two Con Edison transformer vaults (see Figure 5). Smaller amounts of coal tar waste were also encountered during the excavation for the storm sewer lines, the installation of a stormwater detention unit located near the southeast corner of the building and in an isolated pocket at the southwest corner of the building. This section describes the excavations in detail.

On June 12, 2007, during the excavation and abandonment of an existing waterline along the former Dock Road, approximately 44 cyd of coal tar waste was encountered. As the waste was excavated, it was transported with a front-end loader to the staging area at the north end of the Site and stockpiled for subsequent sampling.

While excavation was performed for the large stormwater handling unit at the southeast corner of the building on September 20, 2007, a coal tar waste pocket was unearthed. The coal tar waste was segregated and stockpiled at the north end of the Site in a separate stock pile. Approximately 50 additional cyd of waste was stockpiled for subsequent sampling.

An additional 600 cyd of waste was encountered while excavating for Con Edison vaults along the west property line on November 15, 2007. The waste was segregated and stockpiled at the north side of the Site in separate stockpiles for subsequent disposal sampling.

Stockpiles were staged to allow access for sampling and for equipment to load individual stockpiles for disposal. Piles were placed on and covered with polyethylene sheeting until the material was ready to be removed for thermal treatment/disposal.

3.5.1.2 Coal Tar Waste Sampling

Stockpiles of the coal tar impacted soils generated during the excavation for utility installation work were staged near the northeastern portion of the Site, adjacent to the temporary sedimentation pond constructed as part of the SWPPP. The coal tar waste was staged in separate stockpiles, which ranged from about 44 cyd (C OU-1 Disp 01) to approximately 600 cyd (C OU-1 Disp 02). The pile identified as C OU-1 Disp 02 consisted of numerous smaller piles with volumes ranging from approximately 22 to 28 cyd. All stockpiled waste and soil was placed on and covered by polyethylene sheeting. Coal tar stockpiles were sampled on July 2, 2007 (C-OU-1 Disp 01) and on January 3, 2008 (C OU-1 Disp 02). On

February 14, 2008, C OU-1 Disp 02 was additionally sampled for VOCs and semi-volatile organic compounds (SVOCs) to better characterize the waste stream.

Stockpile C OU-1 Disp 01 was sampled for the following parameters:

- Target Compound List (TCL) VOCs
- TCL SVOCs
- Total Petroleum Hydrocarbons (TPH)
- Target Analyte List (TAL) Metals
- Polychlorinated biphenyls (PCBs)
- Pesticides/Herbicides
- TCLP VOCs
- TCLP SVOCs
- TCLP Metals
- TCLP Pesticides/Herbicides
- RCRA Characteristics (Ignitability, Corrosivity, Reactivity)
- Total Cyanide
- Paint Filter
- Percent Moisture
- Sulfur
- Total Organic Halides (TOX)

These analytical parameters were based on requirements provided by the waste disposal representative used by Anheuser-Busch for disposal on this project.

Stock pile C OU-1 Disp 02 was sampled for the following parameters based on an analytical list provided by the waste disposal facility:

- TPH
- Priority Pollutant (PP) Metals plus vanadium
- TCLP VOCs
- TCLP SVOCs
- TCLP Metals
- TCLP Pesticides/Herbicides
- RCRA Characteristics
- TCL VOCs
- TCL SVOCs

Although analytical parameters differed with each disposal facility, all parameters were requested so that alternate disposal options could be available. One grab sample and one composite sample were collected from stockpile C OU-1 Disp 01 and one composite sample was collected from C OU-1 Disp 02. All samples were submitted to a NYSDOH-certified laboratory for analysis.

Analytical results for the coal tar waste stockpiles, including the complete laboratory data reports, are included in Appendix J.

3.5.2 GP Parcel

3.5.2.1 Coal Tar Excavation

On March 30, 2007 during excavation of Upland Fill on the southern end of Site C OU-2, approximately 200 cyd of coal tar impacted fill was encountered. The coal tar impacted material was stockpiled separately, on the GP Parcel, for subsequent waste classification sampling.

3.5.2.2 Coal Tar Waste Sampling

Coal tar impacted fill generated during the excavation of Upland Fill was stockpiled just north of Dock Road on the GP Parcel. The coal tar waste was staged in an approximately 200-cyd stockpile identified as Disposal 01. All waste was placed on and covered by polyethylene sheeting. Coal tar waste stockpile Disposal 01 was sampled on April 18, 2007 for the following parameters:

- One Composite Sample
    - TCL VOCs
    - TCL SVOCs
    - TAL Metals
    - PCBs
    - Pesticides/Herbicides
    - TPH
    - RCRA Characteristics
    - Paint Filter
    - Percent Moisture
    - Total Cyanide
    - Sulfur
    - TCLP VOCs
    - TCLP SVOCs
    - TCLP Metals plus cyanide
    - TCLP Pesticides/Herbicides

- Three Grab Samples
  - VOCs
  - SVOCs
  - TPH
  - Diesel Range Organics (DRO)
  - Gasoline Range Organics (GRO)
  - TOX

These analytical parameters were based on the analysis requested by the waste disposal contractor for disposal on the bulkhead rehabilitation project.

3.5.3 Coal Tar Waste Disposal

Once the waste characterization analytical data were received and reviewed by the disposal facility, a letter was provided from the facility stating it was able to accept the material based on the analytical results provided. Copies of acceptance letters from each facility are included with the disposal manifests as Appendix K. Upon receipt of the acceptance letter from the disposal facility, transportation for the waste was arranged to the appropriate facility.

Transportation of material for off-Site disposal of waste generated during the rehabilitation of the bulkhead from Site C OU-2 (GP Parcel) was arranged by Impact Environmental Remediation, Inc. (Impact) of Flemington, NJ. Off-Site disposal commenced on July 12, 2007 and continued to July 13, 2007. Eight loads of coal tar waste were loaded into waiting tractor dumps and transported to Piney Creek L.P. Power Plant located in Clarion, PA. The total volume of waste transported was 203.45 tons. The Piney Creek L.P. Power Plant is a waste-to-energy facility that processes residual coal tar waste with high levels of TPH by low temperature direct fire incineration to generate reusable energy. The facility process is not specifically documented here, but is referenced to indicate that the coal tar was not only incinerated but also beneficially used to produce power for the surrounding community.

Transportation of material for off-Site disposal of waste generated from Site C OU-1 (AB Parcel) was arranged by Environmental Waste Minimization, Inc. (EWMI) of Northampton, PA and commenced on December 19, 2007. Initial loads of coal tar waste were destined for Casie Protank Environmental Services (Casie) of Vineland, NJ. The total volume of waste transported initially was approximately 44 cyd. The combined weigh tickets of the two loads of coal tar material shipped off Site was approximately 51.51 tons. The Casie facility is a thermal desorption unit (TDU) that processes residual coal tar waste with high levels of TPH by low temperature direct fire incineration to generate reusable products including I-5 road base and certified clean fill. The facility process is not specifically documented here, but is referenced to indicate that the coal tar was not only incinerated but also beneficially used.

Additional transportation of coal tar impacted soils was arranged by EWMI on March 25, 2008 and continued to March 27, 2008. All of the waste removed from the site from March 25 through 27, 2008 was excavated from the western property line during the installation of two large Con Edison transformer vaults and shipped to Casie for treatment in their TDU. The combined weigh tickets of coal tar material shipped off-Site for thermal treatment between March 25 and 27, 2008 was approximately 630.74 tons.

See Appendix J for disposal manifests and facility approval letters.

3.6 Dewatering

Dewatering of excavations with groundwater impacted by coal tar waste was required in two locations. The first location was along the western edge of the property during excavation for the Con Edison transformer vaults. The second location was at the southwest corner of the building during excavation for installation of a stormwater detention unit. To contain the impacted water, two 21,000-gallon frac tanks and a 6,000-gallon tanker truck were brought to the Site.

Excavation for the transformer vaults began on November 30, 2007 and continued through December 10, 2007. During this time, a total of 44,451 gallons of groundwater was pumped into the frac tanks, and sampled for subsequent disposal.

The excavation for the stormwater detention system began on December 20, 2007 and continued until December 31, 2007. A total of 28,528 gallons of water was generated, pumped into the frac tanks, sampled and subsequently disposed of.

A description of the waste classification sampling and disposal of dewatering liquids is provided in the following section.

3.7 Water Sampling and Disposal

While pumping from the electrical vault excavation, the frac tanks and tanker truck were staged at the northwest corner of the Site. Two representative water samples were collected from the approximately 44,500 gallons on December 5, 2007. One sample was collected from each of the frac tanks, for the following parameters:

- RCRA Characteristics
- TCL VOCs
- TCL SVOCs
- PCBs
- Pesticides/Herbicides
- TAL Metals
- TOX

These parameters were based on analytical requirements provided by Clean Water of New York, Inc. (Clean Water) located in Staten Island, NY, the facility selected for groundwater disposal. The additional 28,528 gallons of groundwater pumped during the second excavation was also disposed of at Clean Water. Groundwater pumped during the second excavation did not require additional sampling, due to the close proximity of the two excavations.

Analytical results from the first frac tank (T-1) showed no VOC, SVOC, pesticides, herbicides, PCBs or TOX above the detection limits. Nine metals were detected in T-1 but all reported concentrations were below the disposal facility acceptance limits. Sample T-1 was determined to be non-hazardous with a reported pH (corrosivity) of 6.66, no measure of ignitability below 200 degrees, and no positive result for reactivity.

Results from the second frac tank (T-2), were similar and showed all VOC, SVOC, pesticides, herbicides, PCBs and TOX below detection limits with the exception of naphthalene which was detected at a concentration of 1,281 parts per billion (ppb). Seven metals were detected during the analysis of T-2 but all were reported at concentrations below the disposal facility acceptance parameters. Sample T-2 was also determined to be non-hazardous. Results of the sampling are summarized on Table 6.

Groundwater generated from dewatering was removed from the Site beginning on December 10, 2007 and ending on December 14, 2007 with the total of 44,451 gallons of water having been transported off-Site to Clean Water (NYSDEC Permit number 2-6401-00065/00001). Additional coal tar impacted groundwater was transported to Clean Water between December 27 and 31, 2007. Copies of the disposal manifest are included in Appendix J.

4 ENGINEERING CONTROLS

To eliminate exposure to fill materials remaining on Site, several engineering controls were put in place to be maintained into the future of the Site operation as a commercial facility and passive recreation area. The engineering controls described below have not been limited to the VCP Parcels, Site C OU-1 and C OU-2, they have been installed across the AB and GP Parcels. The engineering controls installed include:

- A bituminous cap across parking and drivable areas,
- A geotextile fabric overlain by one foot of clean fill in all open spaces (non paved areas) (see Appendix L),
- A vapor barrier and passive venting system under the building structure (see Figures 18 and 19, and Appendix K), and
- The operation of the building's HVAC system.

4.1 Venting System

4.1.1 System Installation

A passive sub-slab venting system was installed beneath the floor slab of the buildings in order to significantly reduce the potential for vapor intrusion. The passive venting system includes a 6-to 10-inch layer of compacted gravel placed immediately beneath the concrete slab. An array of 2-inch perforated polyvinyl chloride (PVC) piping was placed within the layer of gravel. The piping extends beneath the entire slab and exits the building foundation at five separate exhaust riser points attached to the outside of the WOD. The vent piping, in combination with the vent stacks, prevents vapor accumulation beneath the building foundation by allowing it to naturally vent. The venting further reduces the possibility for vapors to reach the interior of the building.

Five sampling points were installed (one at each exhaust riser) that allow samples to be collected and conditions beneath the slab to be monitored. Samples are collected by closing the ball valves leading to the top of the vent riser. These valves seal the sample port off from the open atmosphere and allow representative samples to be pulled from beneath the slab. The Redevelopment Plan recommended sampling be performed during the first year of building operation. This included a baseline sampling event conducted after construction was completed and the Site pavement was laid. This initial baseline sampling was followed by three quarterly sampling events. Included in this FER is a summary of the baseline sampling and three subsequent quarterly sampling rounds. Results of these sampling events are discussed in Section 4.1.2. In a letter dated May 14, 2010 HDR requested no further sampling of the PSSVS system. NYSDEC approved the request in a letter dated June 17, 2010. The approval letter is included in Appendix A.

The State of New York does not currently have any standards, criteria or guidance values for concentrations of BTEX or naphthalene detected in subsurface vapors (sub-slab) nor are any of these compounds included in NYSDOH's guidelines for volatile chemicals in air. There are, however, Occupational Safety and Health Administration (OSHA) permissible exposure limits (PEL) and National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (REL).

4.1.2 Baseline and Quarterly Sampling

Sub-slab vapor samples were collected to characterize levels of soil vapor contamination present, if any, and to determine the general nature of the soil beneath the Anheuser-Busch building. These samples can be used to evaluate potential residual contaminants that exist beneath the building to determine if changes have occurred, possibly as a result of the final capping of the Site and any Site-specific attenuation factors. Samples were collected in accordance with the NYSDOH Guidance for Evaluating Soil Vapor Intrusion October 2006 and the approved Redevelopment Plan.

Summa canisters were used at each sampling event for the collection of gas to be submitted for analysis. The basic procedure used tubing to connect the canister to the sample port. The vacuum on the canister was recorded, and the valve on the canister was opened to allow the flow of vapor into the canister. As directed by NYSDOH, the system was not purged prior to sampling. The flow control valve on the Summa canister was set by the laboratory to collect the sample over a 4-hour period or approximately 22.2 milliliters per minute (ml/min). During the sampling, the vacuum on each canister was periodically recorded. At the end of the targeted 4-hour sampling period and/or before the vacuum on the canister was completely exhausted, the canister valve was closed. The final vacuum reading was recorded, the tubing was disconnected, and the canister was prepared for shipment. Exact sample collection times were dependent on the vacuum pressure of each canister. A similar procedure was followed for collection of the ambient sample. The ambient sample was placed in an upwind position at a height above the ground level consistent with the breathing zone, approximately 3 to 5 feet.

Five sampling points and one ambient outdoor air location were sampled during each sampling event. The five sampling points were identified as: SS-NW, SS-NE, SS-SW, SS-SE, and SS-DT. The ambient location is identified as AMB-SW. Each of the sample identifications corresponds to the directional location within the property itself (i.e., SS-NW is the sub-slab sampling point in the northwest corner of the building). The laboratory data packages for the sampling are included in Appendix M and include the following information, where applicable:

- Sample identification,
- Date and time of sample collection,
- Sampling depth,
- Identity of samplers,
- Sampling methods and devices,
- Volume of soil vapor extracted,
- Canisters vacuum before and after samples collected,
- Apparent moisture content (dry, moist, saturated, etc.) of the sampling zone, and
- Chain-of-custody protocols and records used to track samples from sampling point to analysis.

Samples were shipped via overnight courier under proper chain-of-custody to the laboratory for analyses. Test America Laboratories, Inc. analyzed the samples for benzene, toluene, ethylbenzene, xylene(m,p,o) (BTEX) and naphthalene by a modified United States Environmental Protection Agency (EPA) Method TO-15. Sample results for both the March 2009 baseline sampling event and the quarterly sampling are summarized in Table 7. Laboratory data packages are included in Appendix L.

Analytical results from the March 5, 2009 baseline sampling event were non-detect for naphthalene in all 6 samples. The ambient outdoor sample was also non-detect for ethylbenzene,

xylene (m,p), and xylene (o). Benzene and toluene were detected in the ambient sample at concentrations of 1.2 micrograms per meter cubed (µg/m^3) and 2.6 µg/m^3, respectively. Total detected BTEX in the sub-slab samples ranged from 21.5 µg/m^3 in sample SS-DT to 42.3 µg/m^3 in sample SS-NE.

Analytical results from the August 19, 2009 first round quarterly sampling event showed non-detect concentrations of ethylbenzene, xylene (m,p), xylene (o), and naphthalene in the ambient sample. Benzene and toluene were at concentrations of 0.7 µg/m^3 and 3.3 µg/m^3 respectively. The total detected BTEX in the sub-slab samples ranged from 71.8 µg/m^3 in sample SS-DT to 209.1 µg/m^3 in sample SS-NW. Naphthalene concentrations ranged from 5.0 µg/m^3 in sample SS-NW to 12.0 µg/m^3 in sample SS-NE.

Analytical results from the November 23, 2009 second round quarterly sampling event showed non-detect concentrations of naphthalene in all 6 samples. Ethylbenzene, xylene (m,p), and xylene (o), were not detected in the ambient sample. The ambient sample showed benzene and toluene detected at concentrations of 0.8 µg/m^3 and 0.87 µg/m^3 respectively. The total BTEX detected in the sub-slab samples ranged from 27.8 µg/m^3 in sample SS-NE to 60.4 µg/m^3 in sample SS-SE.

Analytical results from the third round quarterly sampling event on February 15, 2010 showed naphthalene was non-detect in all 6 samples. Ethylbenzene, xylene (m,p), and xylene (o), were not detected in the ambient sample. The ambient sample showed benzene and toluene detected at concentrations of 1.0 µg/m^3 and 1.2 µg/m^3, respectively. The total BTEX concentrations detected in the sub-slab samples ranged from 6.3 µg/m^3 in sample SS-DT to 27.4 µg/m^3 in sample SS-SE.

The concentrations of the compounds detected indicate that there is not a sub-slab vapor issue at the Site. Over the monitoring period, BETX and naphthalene concentrations have remained consistent indicating vapors are not collecting beneath the building.

The goal of the PSSVS remedy is to mitigate the potential intrusion of BETX and naphthalene vapors from remnant coal tar waste that may remain on the site. Baseline and quarterly sampling results indicate that the conservative OSHA PEL (1.0 ppm) and NIOSH PEL(0.1 ppm) for benzene, the most toxic of the BETX compounds, has not been exceeded. The maximum benzene concentration detected during sampling was 2.0 parts per billion (ppb) or 0.002 ppm. Well below the OSHA and NIOSH exposure values that are based on an 8 hour and 10 hour time weighted average exposures. Additionally, any vapors that intruded into the building would be diluted by indoor air. Based on this analysis it is not likely that BETX or naphthalene concentrations pose a significant threat to the indoor air quality of the building. No further sampling of the PSSVS system will be conducted.

4.2 Vapor Barrier

An impermeable vapor barrier was added on top of the permeable gravel layer and PVC vent piping, immediately below the foundation slab, to prevent any potential vapors from migrating and contacting the base of the slab. The vapor barrier serves to seal the underside of the building floor slabs, significantly reducing any potential for vapors to enter into the building. The vapor barrier was installed as a continuous layer beneath the floor slabs in accordance with all applicable manufacturers' instructions. Penetrations and terminations of the vapor barrier were sealed and fastened per the manufacturer's specifications to prevent vapors from contacting the floor slab. Piping layout and construction details are included on Figures 18 and 19.

4.3 Refrigeration and Air Handling

The warehouse portion of the Anheuser-Busch building is fully refrigerated. The air handling equipment required to maintain refrigeration will also, by design, maintain a positive pressure within the building. The equipment installed for refrigeration is similar to the system installed at the nearby New Fulton Fish Market where positive inside pressure was shown to exist.

Given the use of the building as a large refrigerated operating warehouse, the building HVAC systems were designed to maintain a capacity to keep the entire interior warehouse space at a continuously low temperature. To maintain this, the system has a very high turnover capacity to refrigerate existing interior air as well as add outdoor air into the refrigeration process. This added air creates a positive pressure condition within the building. The positive pressure in the building is an additional physical mechanism preventing sub-slab vapors, under lower pressure, from penetrating upward into the building space.

4.4 Site Cap

4.4.1 Cap Construction

Prior to construction, the existing condition of the Site allowed infiltration of precipitation through the soil and then percolation downward into the groundwater or overland directly to the East River. All parking, entranceways and driveways on the AB Parcel now have a bituminous pavement or a concrete apron. These surfaces have been designed with a stormwater collection system to catch and direct the precipitation and sheet flow into the system's piping. Directing the precipitation to the stormwater system and moving it away from the Site prevents it from contacting the fill. Rain can now only contact Site soils in the landscaped areas of the AB Parcel and on the GP Parcel. The landscaped areas on both parcels have been covered with one foot of topsoil above a geotextile fabric. The stormwater collection and treatment system has been installed in accordance with the NYSDEC-approved SWPPP. The system has additionally been permitted by NYCDEP.

The details and source of the topsoil materials are discussed in Section 4.4.2. The Site wide installation of the bituminous cap (parking lot), building slab, and one foot of topsoil also isolated the fill material from dermal and inhalation contact by workers, patrons, or any other persons present at the Site.

4.4.2 Top Soil Importation

Under the terms and conditions of the NYSDEC-approved SMP, topsoil was imported to the Site to cap areas not covered by bituminous pavement, or buildings. The source of the topsoil imported to the Site was a residential development in Amityville, NY. Analytical samples were collected for every 1,000 cyd of top soil imported in accordance with the approved SMP. One foot of top soil was spread on any area of the AB Parcel that was not paved or covered by the building slab and over the entire GP Parcel. Prior to topsoil placement, geotextile fabric was laid to serve as a demarcation barrier and to prevent the subsurface fill materials from mixing with the topsoil. The analytical data for the topsoil characteristics are available in Appendix N. A total of 4,622 cyd of topsoil was imported and spread.

5 INSTITUTIONAL CONTROLS

Following final NYSDEC and NYSDOH approval of this FER and appended Qualitative Exposure Assessment (QEA), the following institutional controls will be in place at the Site:

- A site-specific QEA has been prepared for Parcels C OU-1 and C OU-2 and is included as Appendix O.

- A SMP has been prepared and will apply to all future intrusive work to be completed on the AB or GP Parcels. The SMP is included in Appendix B. All future work that will penetrate the surface pavement or top foot of "clean" imported material will be in accordance with that SMP. C OU-1 will be the responsibility of the current tenant; C OU-2 will be the responsibility of NYCEDC.

- In the event that intrusive work is proposed on the AB or GP Parcels, a Work Plan and Specific Health and Safety Plan (HASP) will be implemented by the "persons" or contractor conducting the work. The Work Plan and HASP will provide information and outline procedures to be used by workers to protect them from being exposed to potential contaminants associated with the subsurface material. The proposed Work Plan and Specific HASP will be provided to the Owner (City of New York), NYSDEC and NYSDOH prior to the initiation of work. A generic HASP for Parcel C is provided in Appendix P.

- A Deed Restriction will be attached to the tenant documents and contract. The Deed Restriction will include the requirements set forth in the Voluntary Cleanup Agreement for Parcels C OU-1 and C OU-2. In addition, the Deed Restriction will require that the tenant notify the Owner (City of New York), which in turn will notify NYSDEC of any intrusive work (utility, drainage additions, repairs or modifications) planned on the Site.

A Department/Worker Notification Plan is appended to this report in Appendix B. The deed restriction for the site was filed by the City with the Bronx County Clerk on August 2, 2010. The City Register File No. (CRFN) is 2010000257009. A copy of the Proof of Filing is provided in Appendix Q.

- A Periodic Review Report will be prepared for Site C OU-1 and C OU-2 on an annual basis with the first review being completed one year following the approval of this report. This Periodic Review Report will state whether the cap material is maintained and kept in a condition that will preserve the post construction conditions (i.e., no human contact and no significant infiltration of precipitation to the subsurface).

6 CERTIFICATION

I, Thomas Pease, PhD, PE, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Response Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Response Plan.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set fourth in-the Response Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established in for the remedy.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Thomas Pease, of One Blue Hill Plaza, Pearl River, NY, 10965, am certifying as Owner's Designated Site Representative for the site.

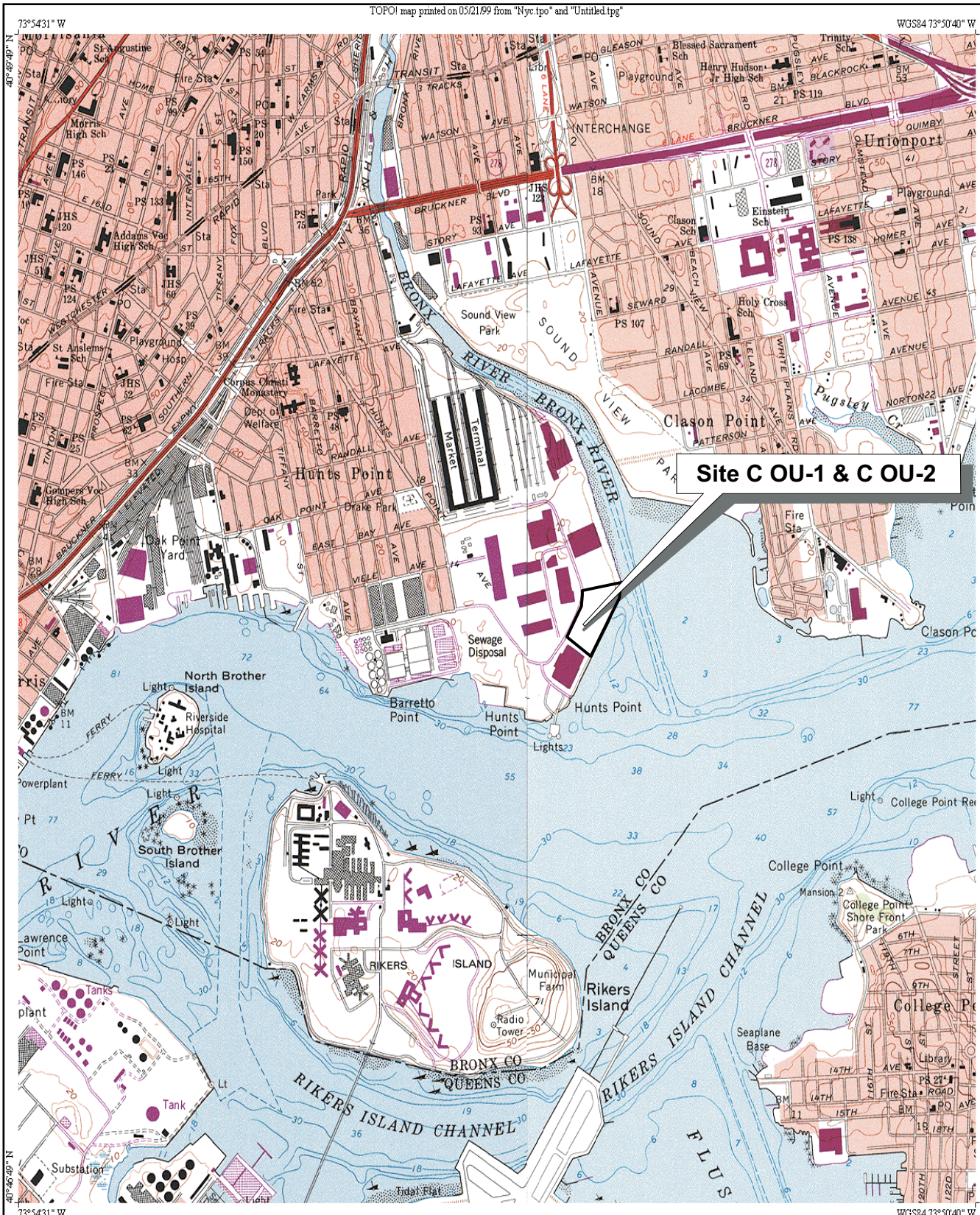
057131-1 — NYS Professional Engineering #

October 11, 2010

Thomas E. Pease, Ph.D., P.E.
Senior Professional Associate

PE Stamp

Figures



Map source: USGS 7.5 minute quadrangle series, Central Park, NY-NJ, 1966, photorevised 1988.

\781\003\graphics\2006ResponsePlans\SiteClocation.dsf

HDR Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc. One Blue Hill Plaza Pearl River, NY 10965	**Site C OU-1 & C OU-2 Location** **Hunts Point • Bronx • New York**	**Figure 1**

Site - 12.6 acres

AB Parcel - 10.6 acres

Site C OU-1

non-VCP AB Parcel

Iroquois Easement 0.5 acres

GP Parcel - 1.9 acres

Site C OU-2

N

40 0 80 160 ft

APPROX. SCALE (ft)

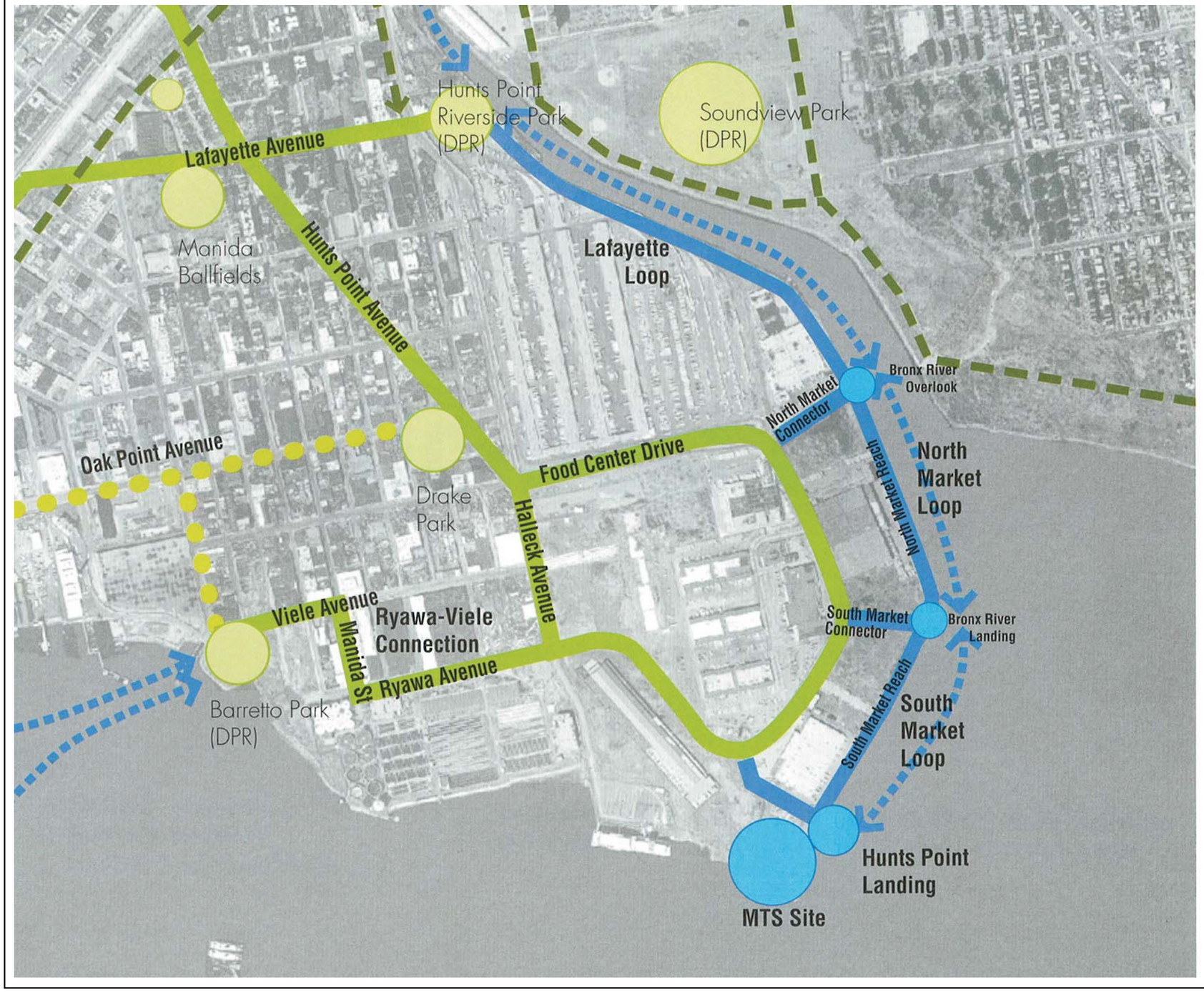
HDR

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site Location and Boundaries

Hunts Point • Bronx • New York

Figure 2



N

Legend

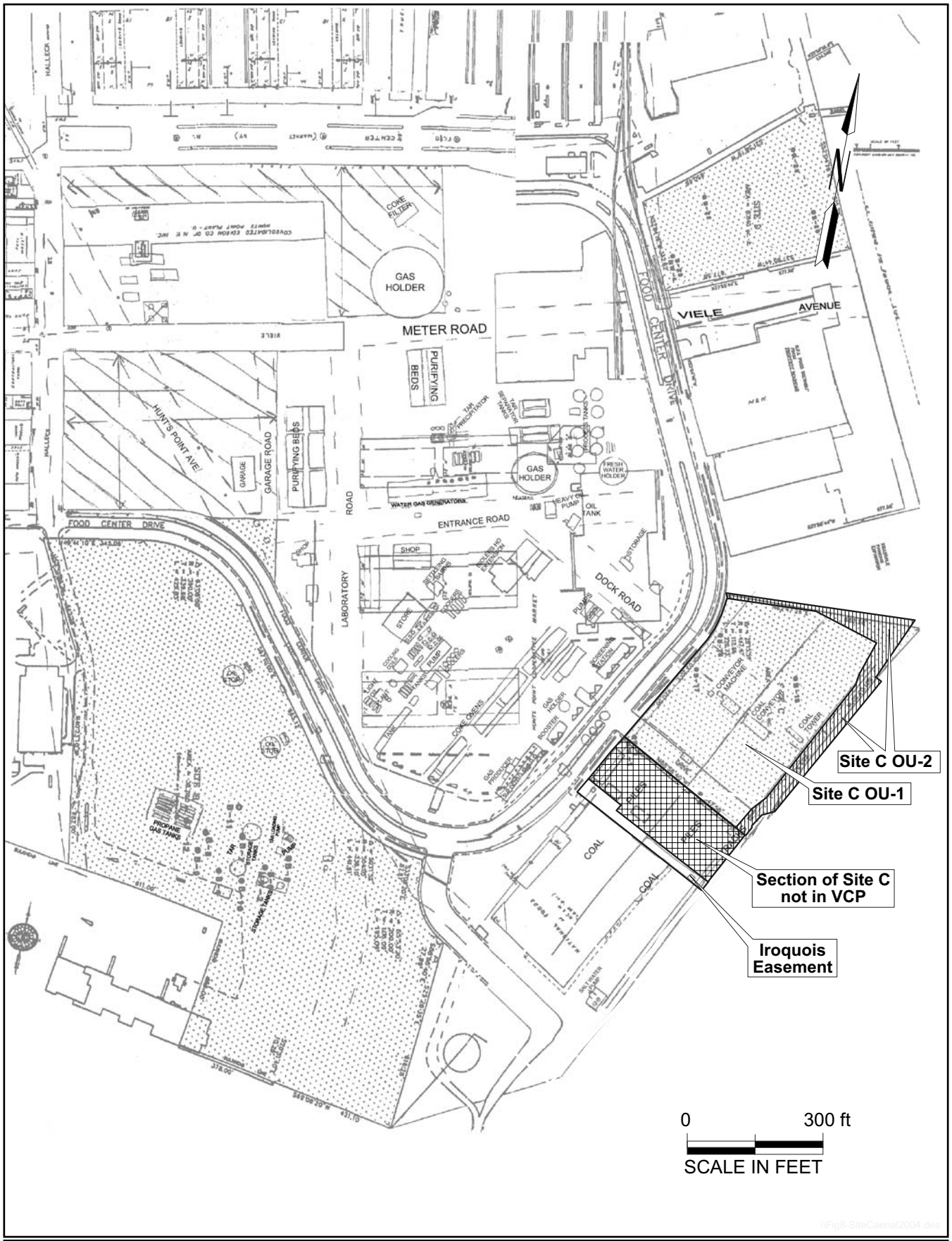
- Existing Points of Origin/ Landmarks/ Destinations
- Neighborhood Connections
- Proposed Waterfront Destinations
- Proposed Greenstreet Connections
- Proposed Waterfront Connections
- Proposed Water Connections
- Future Greenstreet Connections

Reference:
South Bronx Greenway Master Plan
The City of New York and NYCEDC in partnership with
Sustainable South Bronx and The Point CDC, Fall 2006.

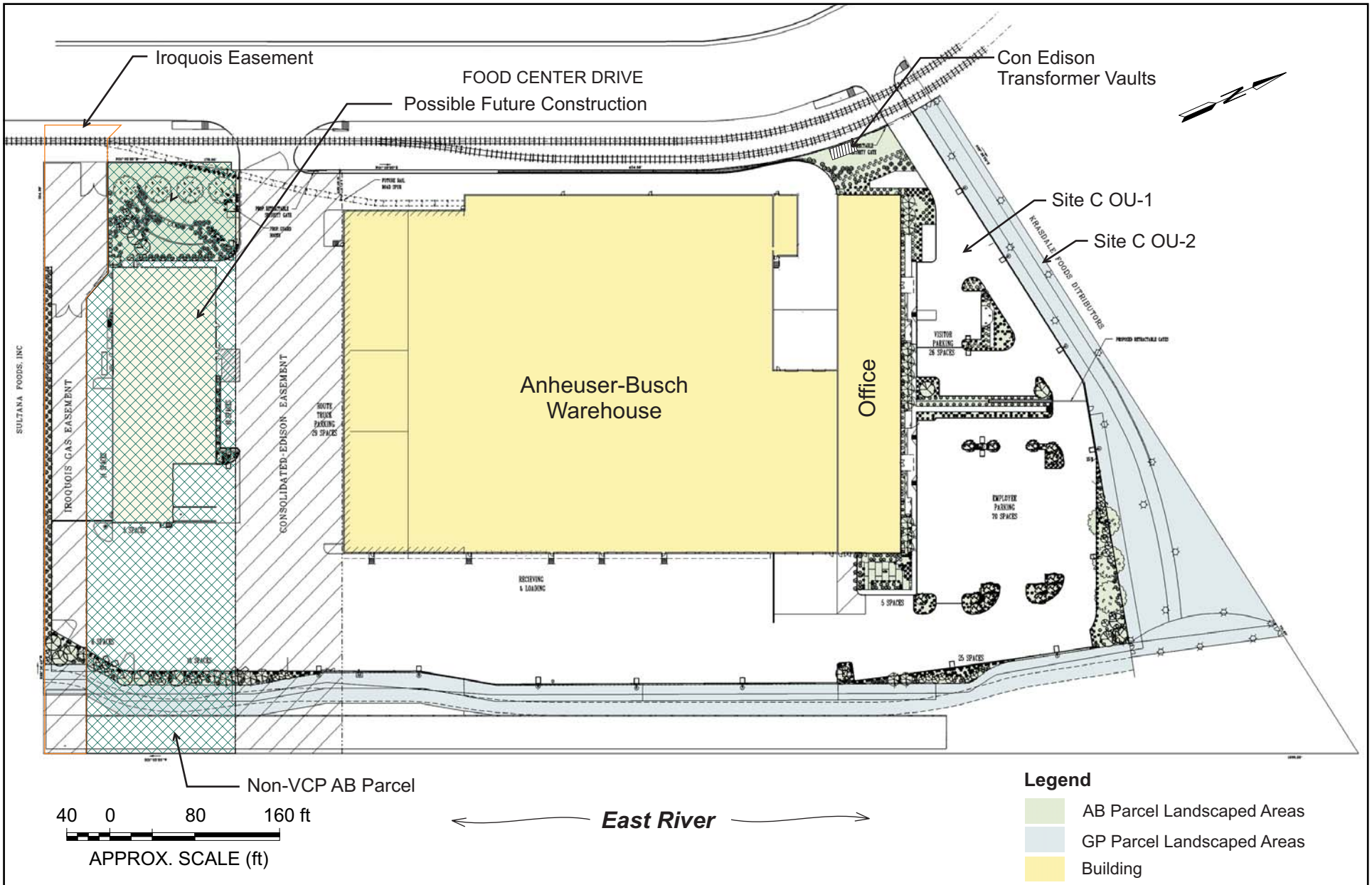
HDR
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

South Bronx Greenway Master Plan
Hunts Point • Bronx • New York

Figure 3



HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Site C Historical Site Features** **HUNTS POINT • BRONX • NEW YORK**	**Figure 4**



Drawing source: Anheuser Busch, 2007.

\201944_\0040020_\Site C OU 1\Reports\Graphics\RedevelopmentPlan\Fig_11 SiteCOU1Preliminary....dsf

HDR

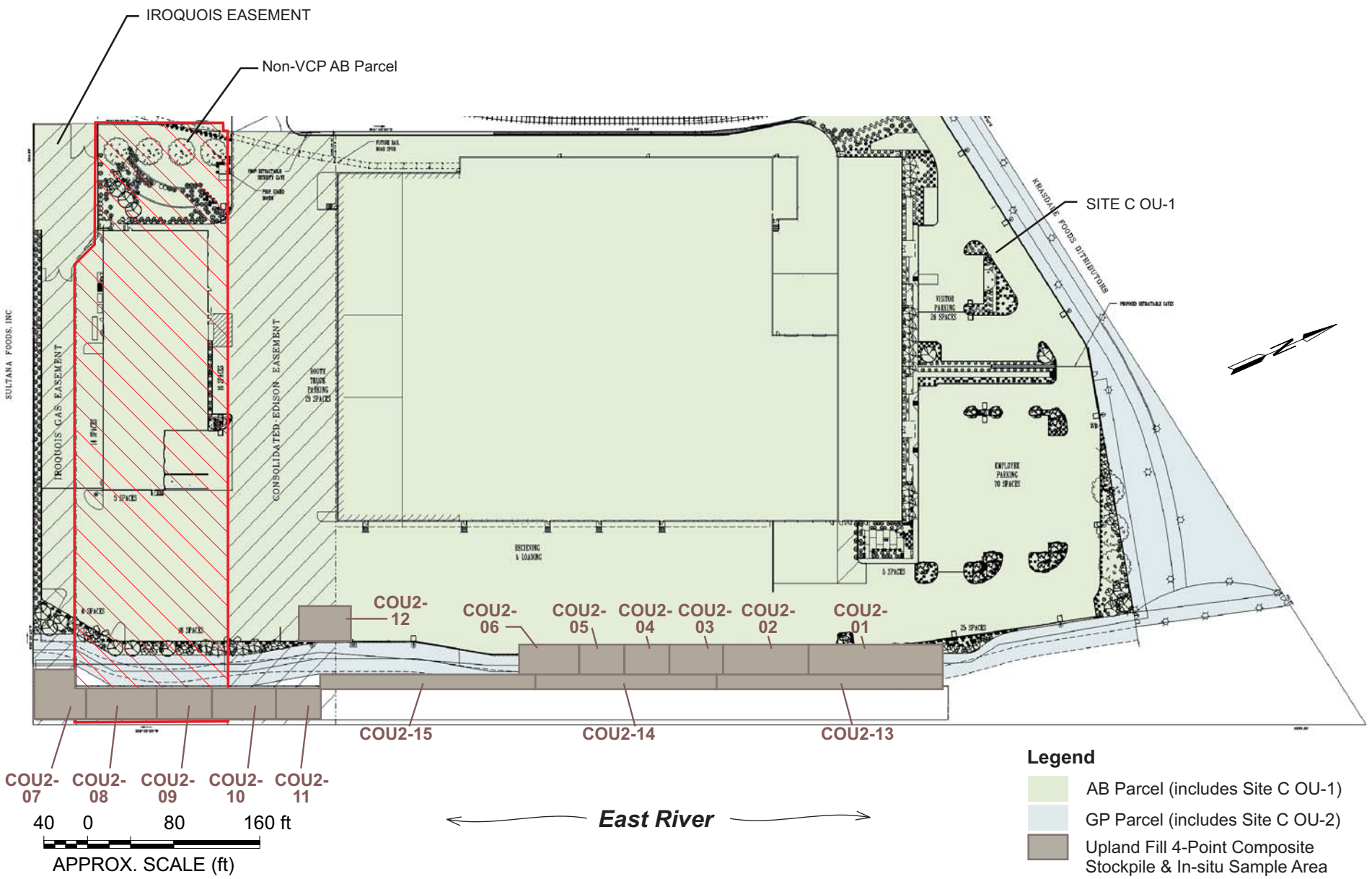
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

One Blue Hill Plaza
Pearl River, NY 10965

Site Development Plan

Hunts Point • Bronx • New York

Figure 5



Drawing source: Anheuser Busch, 2007.

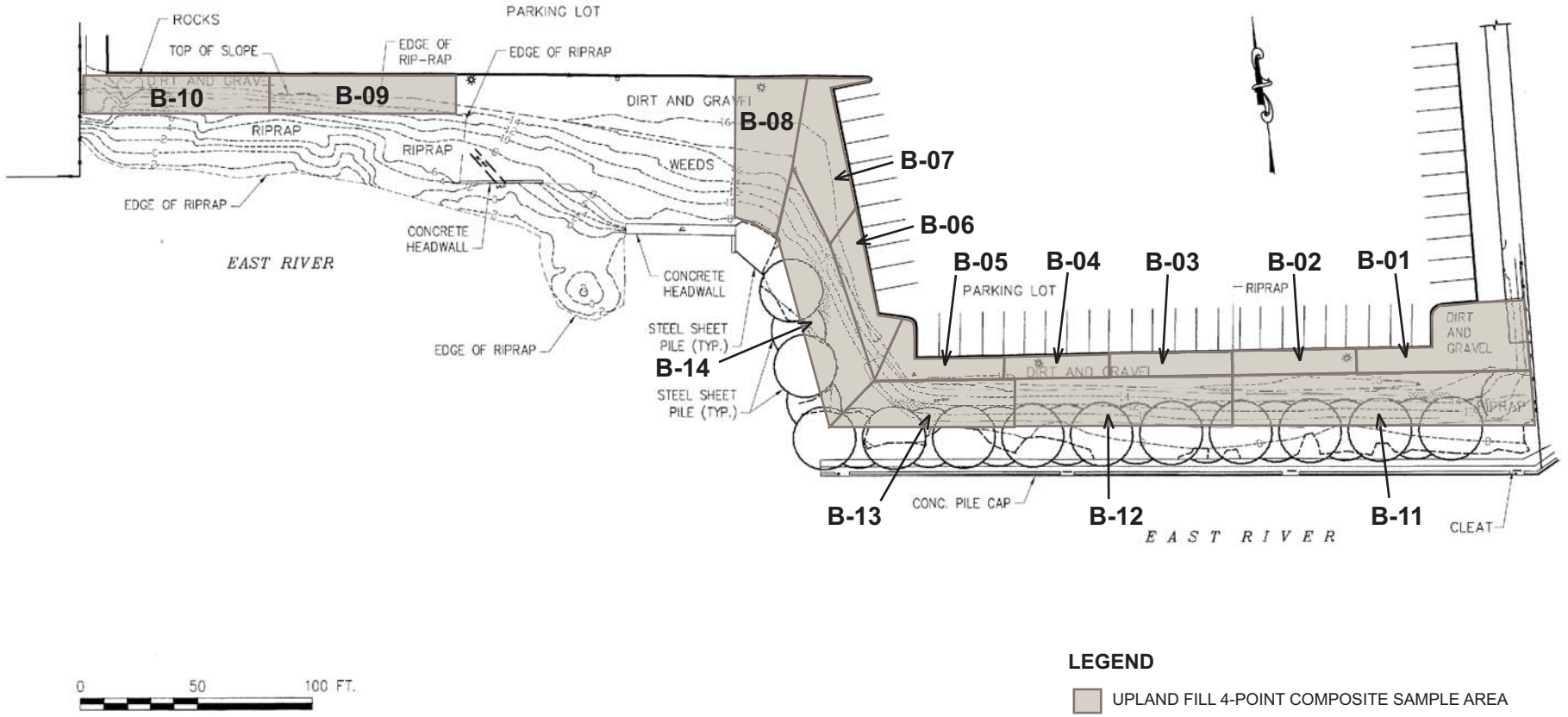
\201944_\0040020_\Site C OU 1\Reports\Graphics\RedevelopmentPlan\Fig_13BulkheadMaterialSamplingLocations.des

Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site C OU-2 & GP Parcel In-Situ Bulkhead Material Sampling Locations

Hunts Point • Bronx • New York

Figure 6



Reference:
Hunts Point Waterfront Demolition And Design
by HPA, dated October 2005.

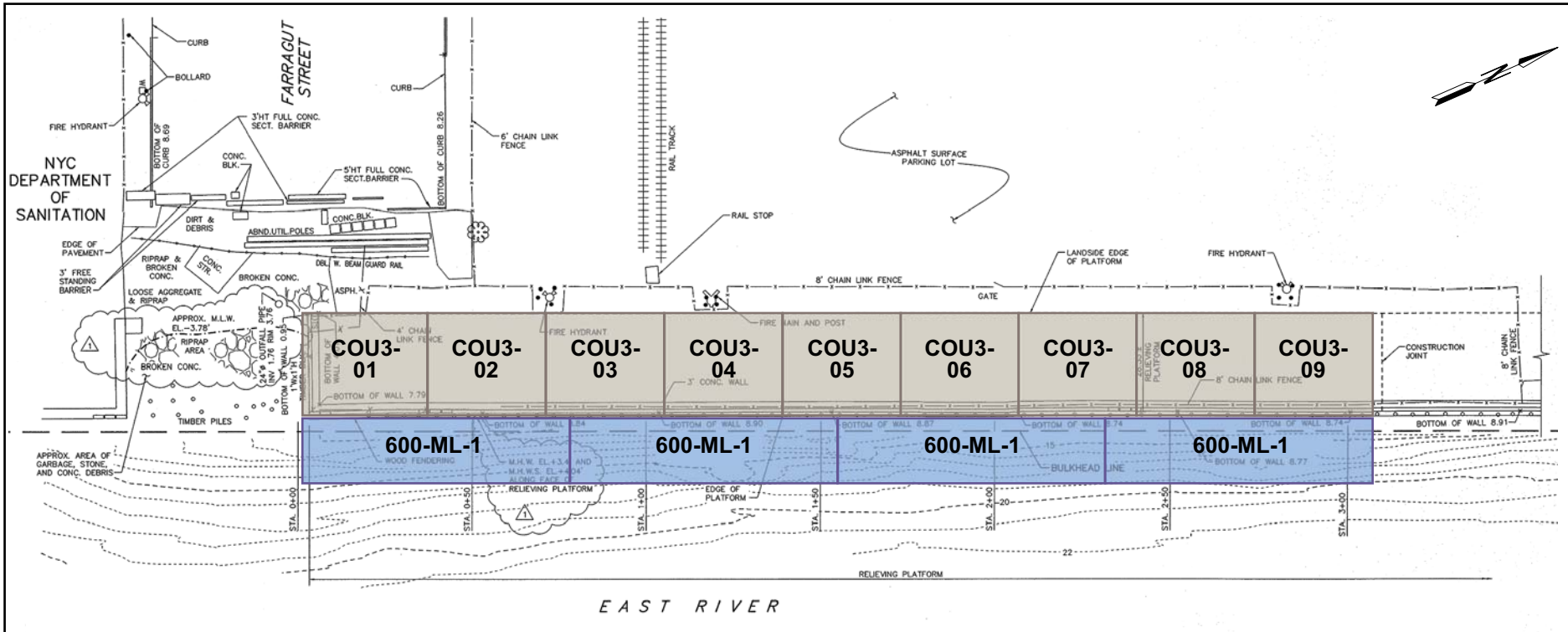
\201944_\0040020_\Site C OU 1\Reports\Graphics\RedevelopmentPlan\Fig14_ParcelBmaterialSamplingLocations.des

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site B In-Situ Bulkhead Material Sampling Locations

Hunts Point • Bronx • New York

Figure 7



EXISTING GENERAL PLAN

SCALE 1"=15'-0"

UPLAND FILL 4-POINT COMPOSITE SAMPLE AREA

MUDLINE MATERIAL UNEXCAVATED GRAB SAMPLE AREA

NOTES

1. ELEVATIONS ARE IN NAVD88 DATUM.

GRAPHIC SCALES

CHECK GRAPHIC SCALES BEFORE USING

0 15 30 FT.

Reference:
Hunts Point Waterfront Demolition And Design
by Ocean and Coastal Consultants Engineering PC, dated October 2005.

\201944_\0040020_\Site C OU 1\Reports\Graphics\RedevelopmentPlan\Fig15_600FCDmaterialSamplingLocations.des

HDR
Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

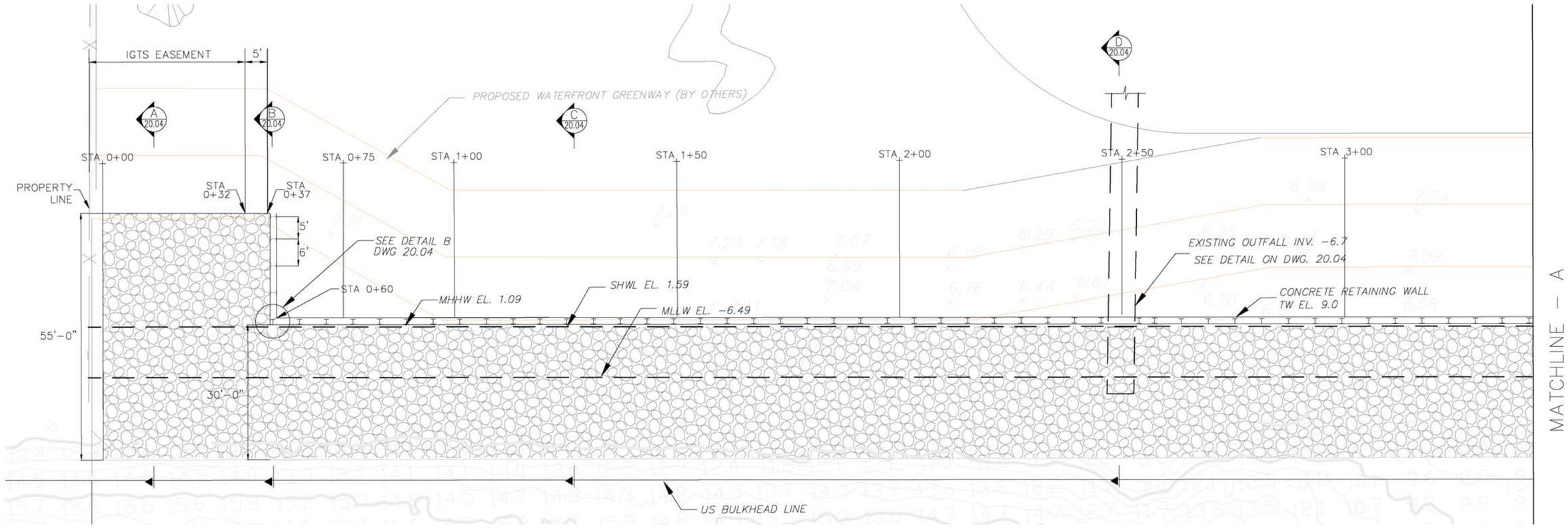
600 Food Center Drive In-Situ Bulkhead Material Sampling Locations

Hunts Point • Bronx • New York

Figure 8

HDR	Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Hunts Point 2004 Aerial Photograph** **HUNTS POINT • BRONX • NEW YORK**	**Figure 9**

HDR Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965		**Predevelopment Bulkhead Condition** HUNTS POINT • BRONX • NEW YORK	**Figure 10**

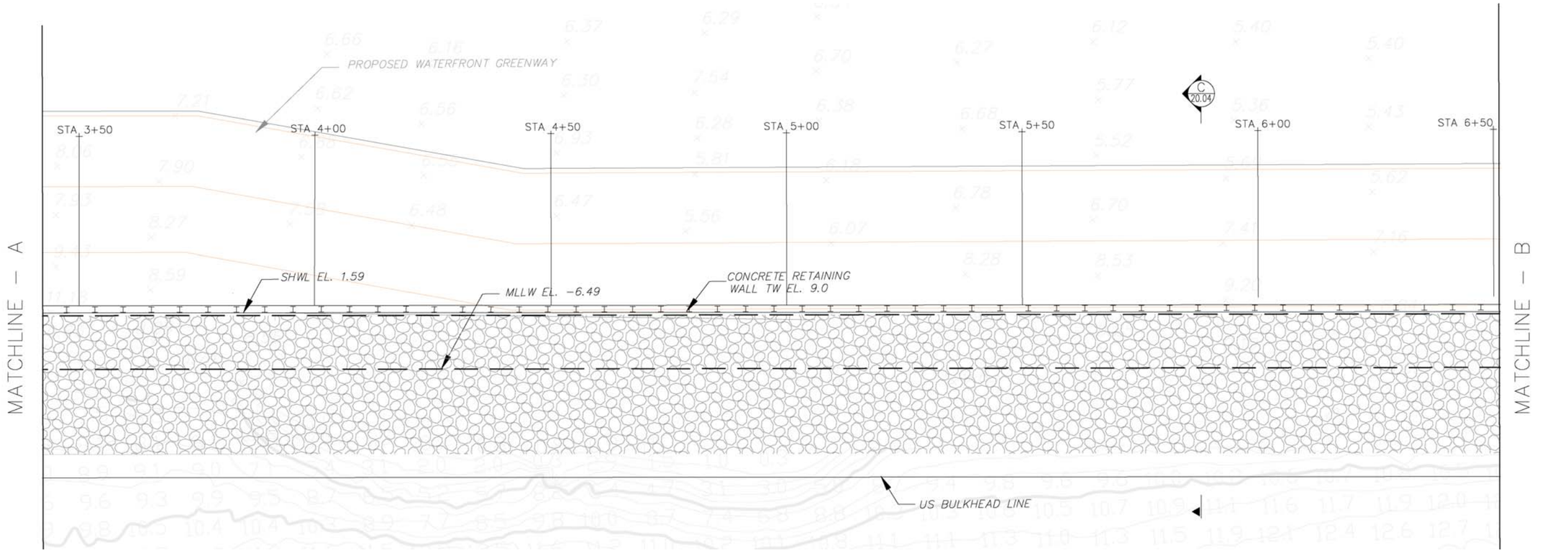


Reference:
Hunts Point Waterfront Demolition And Design
by Langan Engineering, December 2006 100% Design Documents

HDR
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site C OU-2 Bulkhead Design
Hunts Point • Bronx • New York

Figure 11a

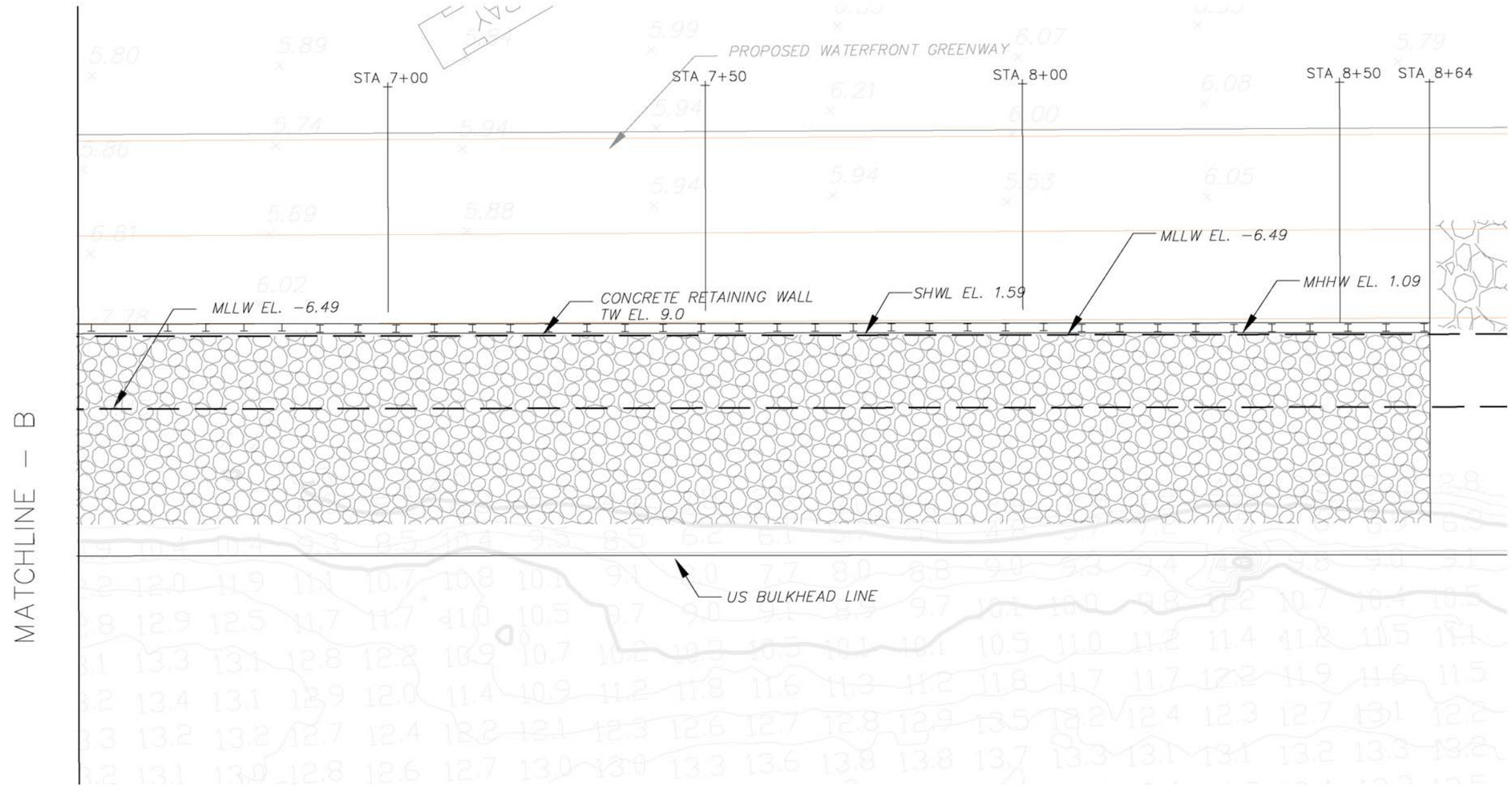


Reference:
Hunts Point Waterfront Demolition And Design
by Langan Engineering, December 2006 100% Design Documents

HDR
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site C OU-2 Bulkhead Design
Hunts Point • Bronx • New York

Figure 11b

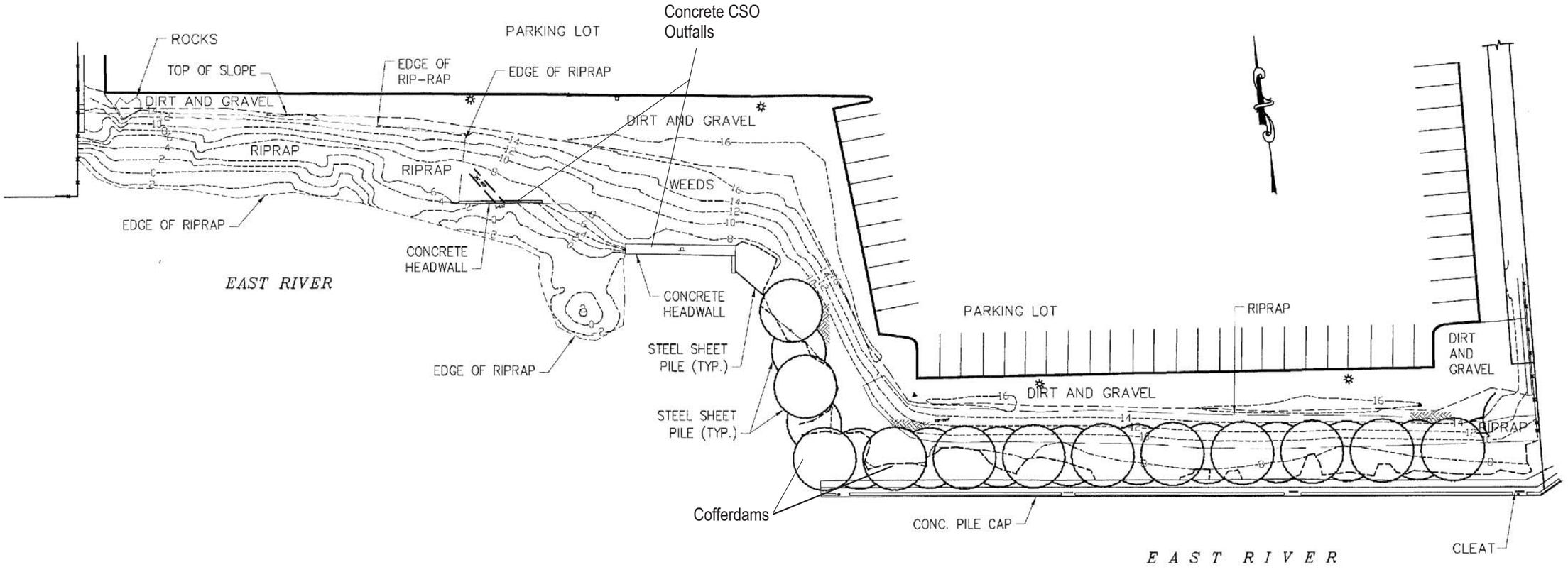


Reference:
Hunts Point Waterfront Demolition And Design
by Langan Engineering, December 2006 100% Design Documents

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site C OU-2 Bulkhead Design
Hunts Point • Bronx • New York

Figure 11c



0 50 100 FT.

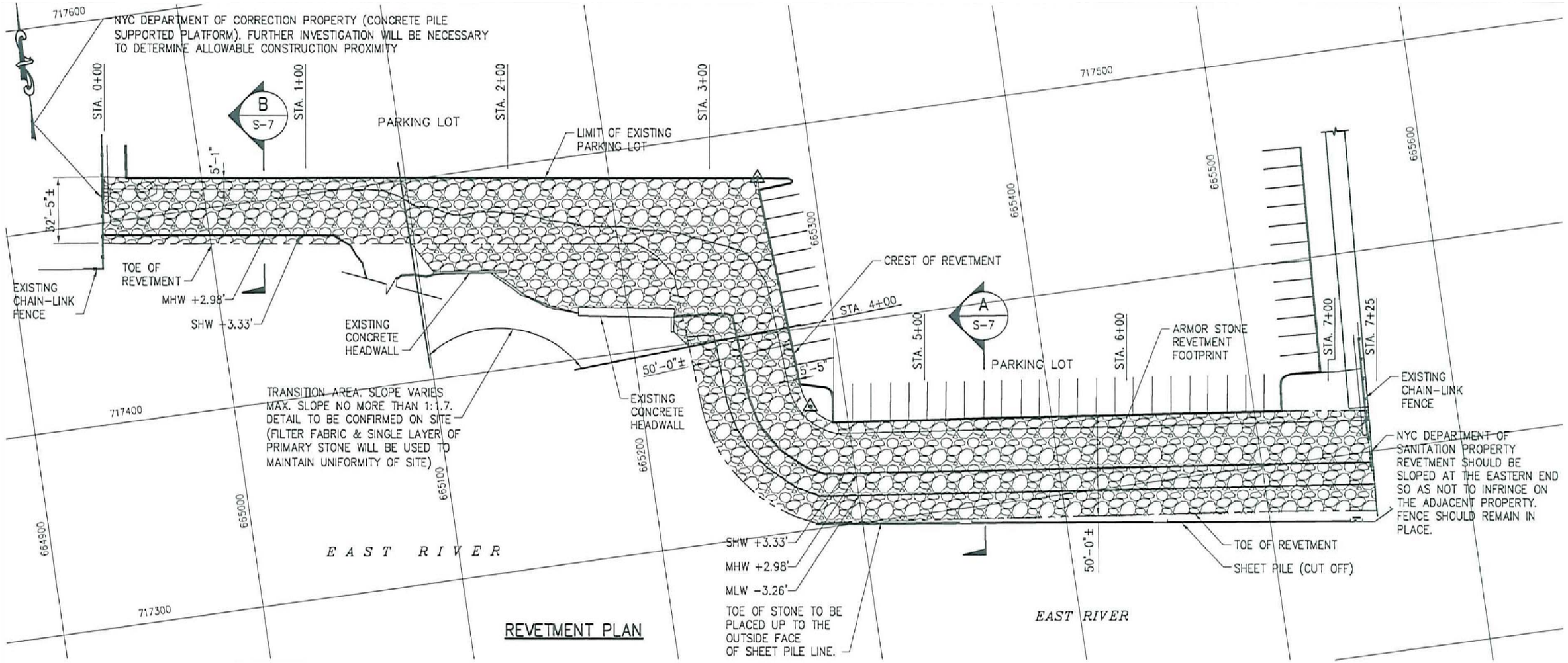
Reference:
Hunts Point Waterfront Demolition And Design
by HPA dated October 2006.

HDR
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site B Bulkhead Prior to Reconstruction

Hunts Point • Bronx • New York

Figure 12

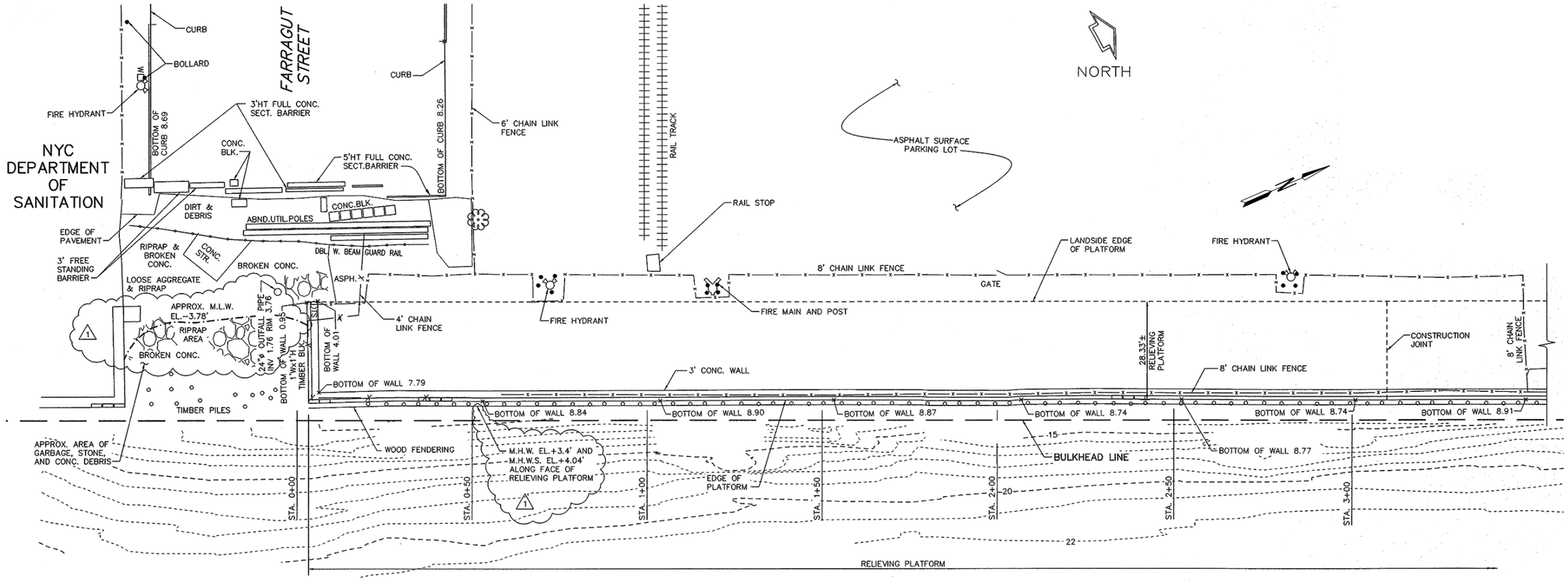


Reference:
Hunts Point Waterfront Demolition And Design
by HPA, dated October 2006.

HDR
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site B Bulkhead Design
Hunts Point • Bronx • New York

Figure 13



EXISTING GENERAL PLAN

NOTES

1. ELEVATIONS ARE IN NAVD88 DATUM.

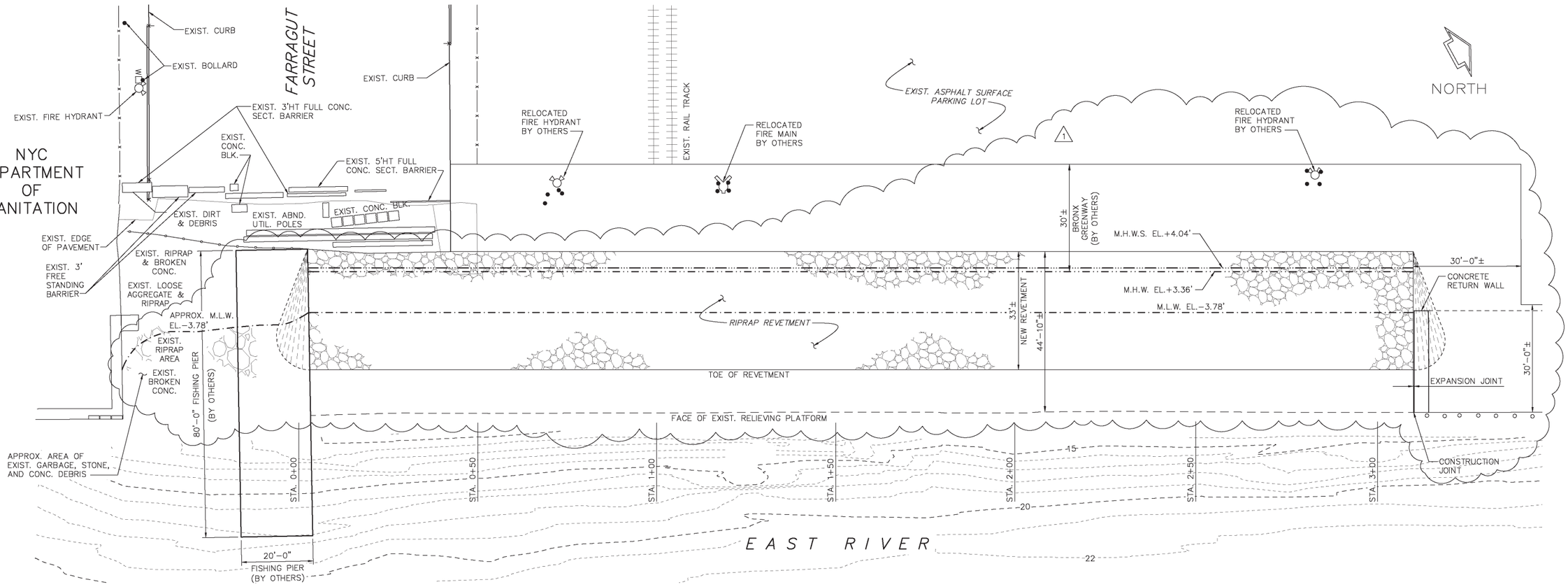
GRAPHIC SCALES
CHECK GRAPHIC SCALES BEFORE USING
0 15 30 FT.

Reference:
Hunts Point Waterfront Demolition And Design
by Ocean and Coastal Consultants Engineering PC, dated October 2005.

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

600 Food Center Drive Bulkhead Prior to Reconstruction
Hunts Point • Bronx • New York

Figure 14

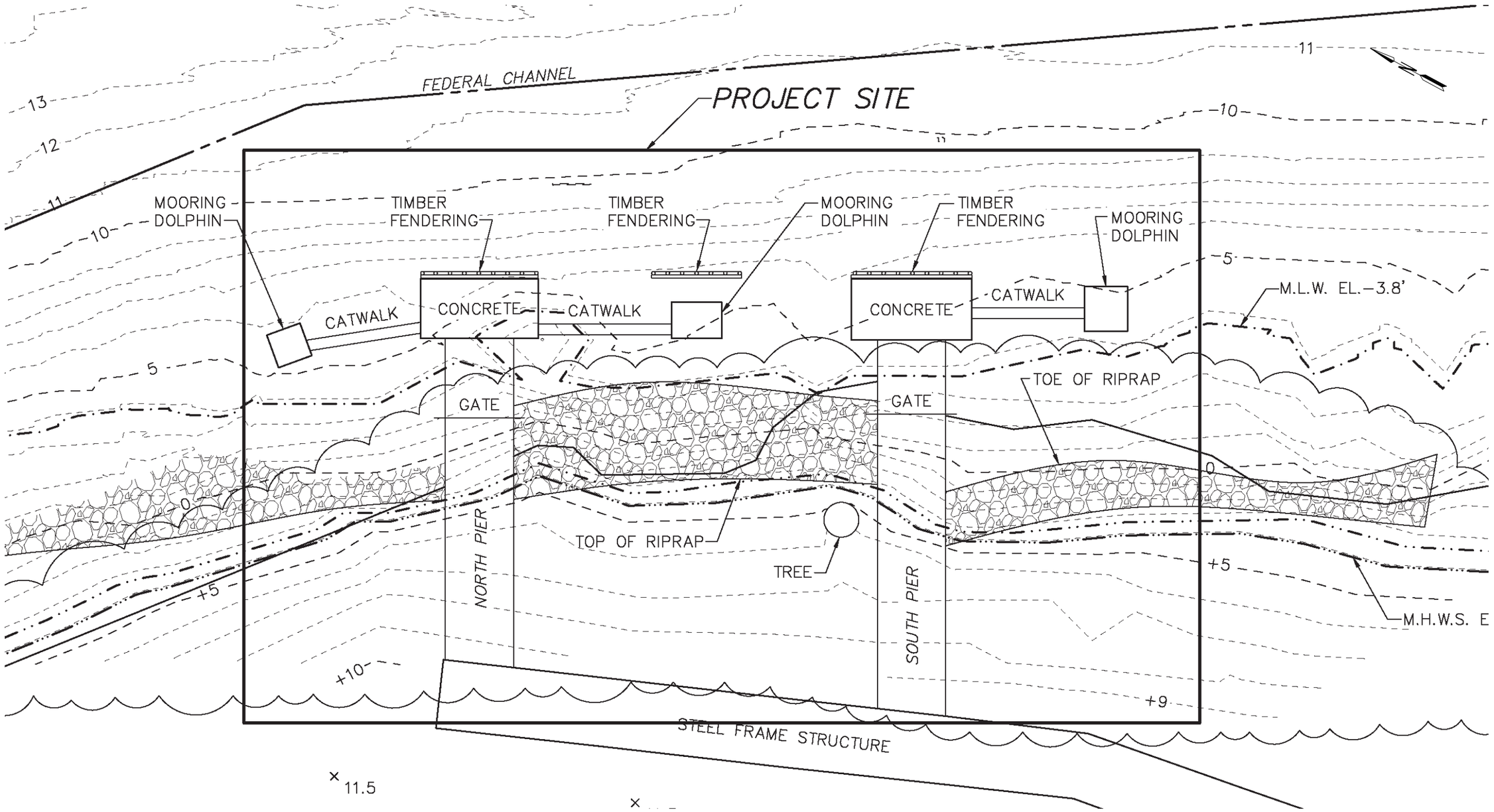


Reference:
Hunts Point Waterfront Demolition And Design
by Ocean and Costal Consultants Engineering P.C, dated October 2005.

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

600 Food Center Drive Bulkhead Design
Hunts Point • Bronx • New York

Figure 15

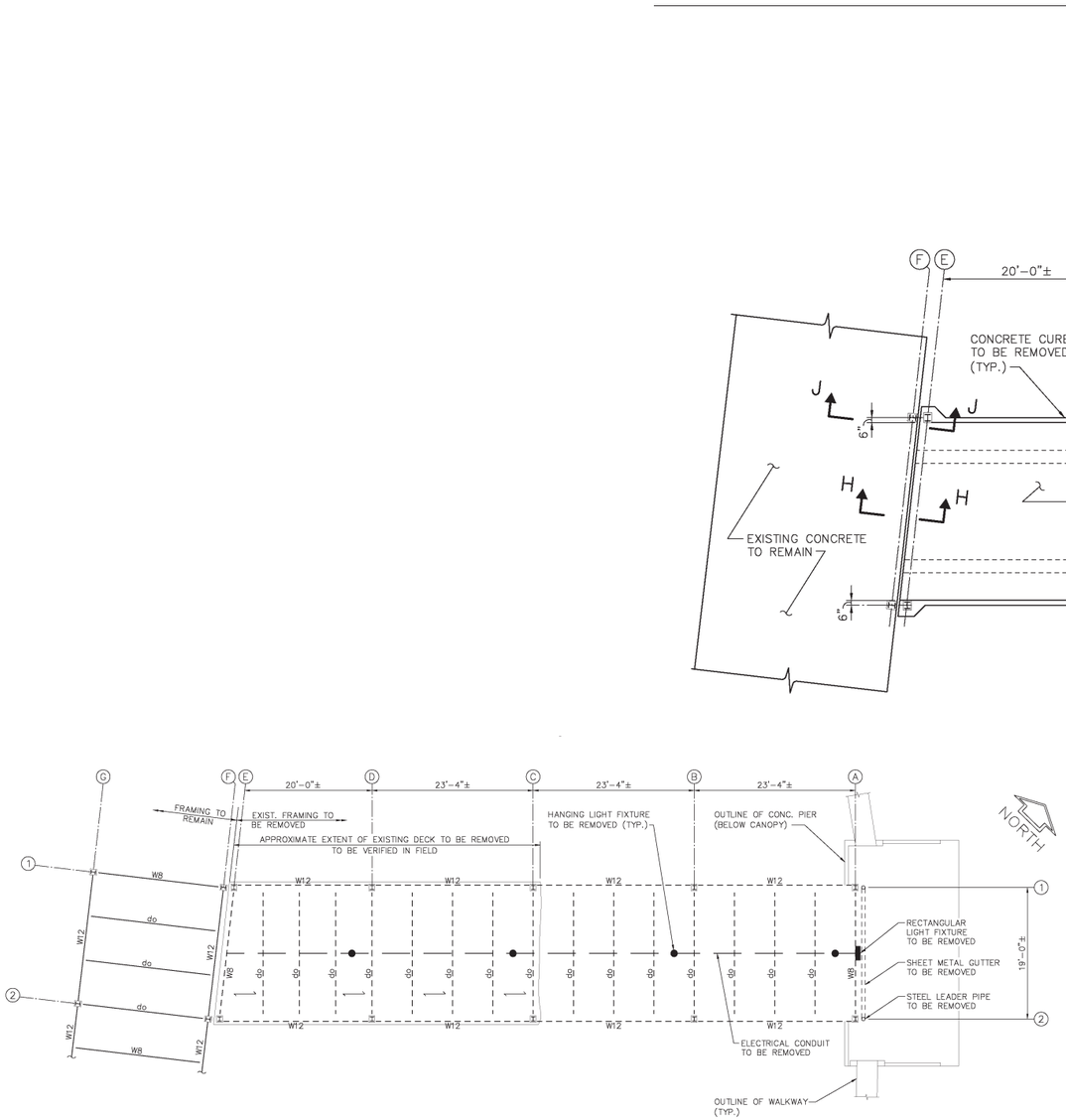


Reference:
Hunts Point Waterfront Demolition And Design
by Ocean and Costal Consultants Engineering P.C, dated October 2005.

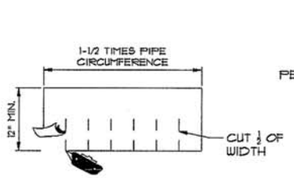
HDR
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

200 Food Center Drive Pier Prior to Demolition
Hunts Point • Bronx • New York

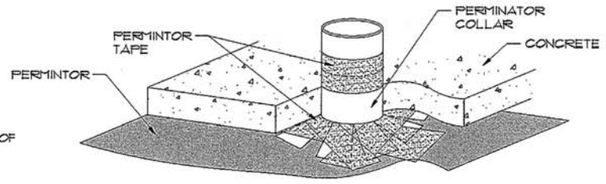
Figure 16



Reference:
Hunts Point Waterfront Demolition And Design
by Ocean and Costal Consultants Engineering P.C, dated October 2005.

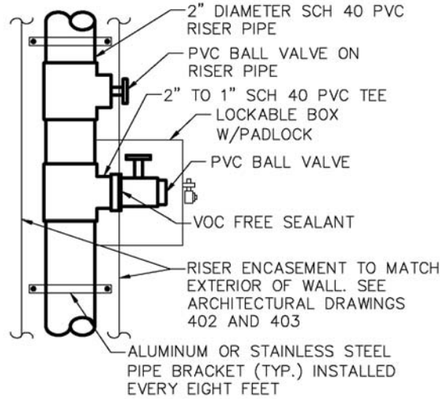


COLLAR

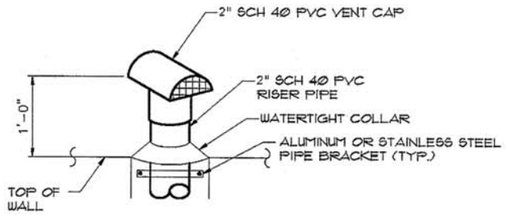


COLLAR INSTALLATION

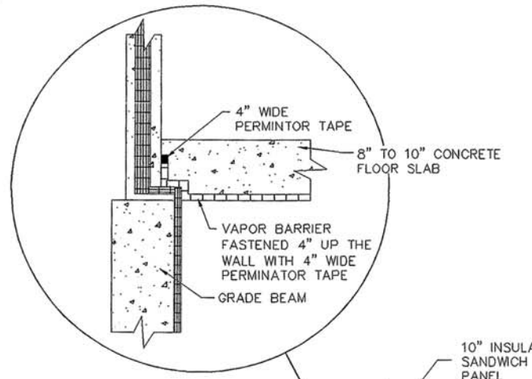
VAPOR BARRIER PIPE/UTILITY PENETRATION (TYP)

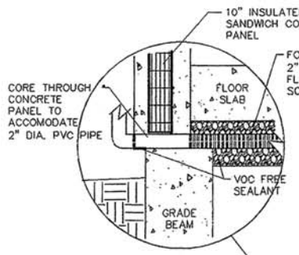


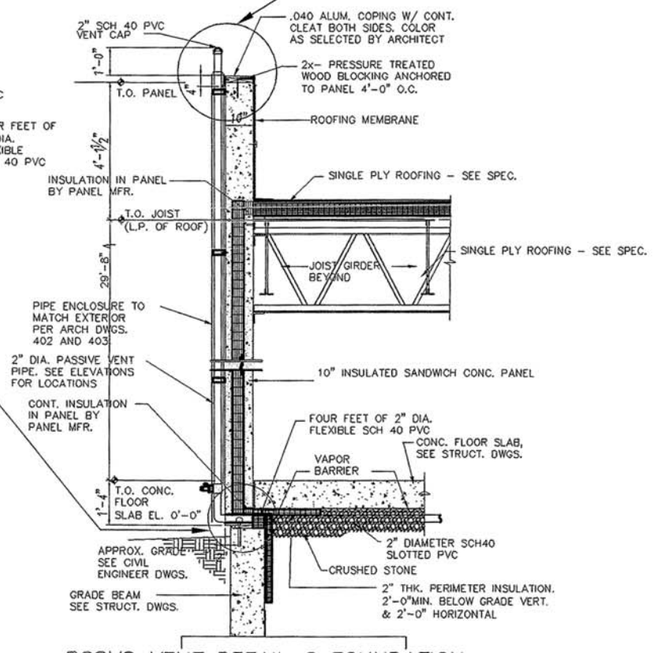
PSSVS SAMPLING PORT ON RISER PIPE



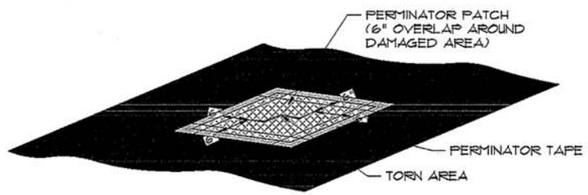
PSSVS EXHAUST AT TOP OF PRECAST WALL



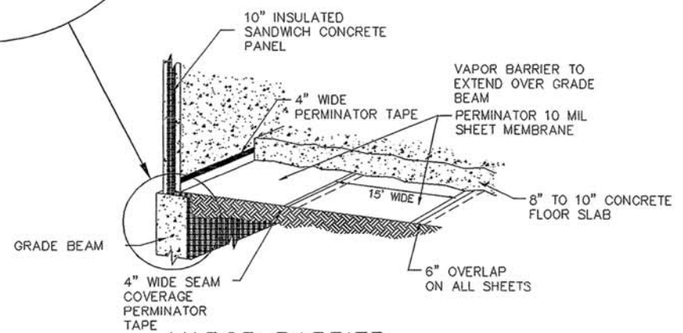




PSSVS VENT DETAIL @ FOUNDATION



VAPOR BARRIER REPAIR (TYP.)



VAPOR BARRIER INSTALLATION (TYP.)

HDR
Henningson, Durham & Richardson Architecture and Engineering, P.C. in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Venting System Details

Hunts Point • Bronx • New York

Figure 18

NOTES:

1. ALL PVC CONNECTIONS SHALL BE SLIP FITTINGS OR FASTENED WITH STAINLESS STEAL SCREWS. NO GLUE SHALL BE UTILIZED AT ANY PVC CONNECTIONS.
2. THE PVC PIPING SHALL BE PLACED IN CRUSHED STONE BENEATH THE CONCRETE FLOORSLAB. DO NOT SUPPORT THE PIPING FROM THE CONCRETE FLOORSLAB.
3. THE PSSVS SYSTEM EXHAUST SHALL BE INSTALLED ONE FOOT ABOVE THE TOP OF THE WALL AND A MINIMUM OF TEN FEET FROM ANY OPENINGS TO INTERIOR SPACES.
4. PSSVS RISER ENCASEMENT SHALL MATCH EXTERIOR FINISH PER ARCHITECTS REQUIREMENTS. PER ARCHITECTURAL DRAWINGS 402 & 403.
5. PERMINATOR 10mil UNDER SLAB VAPOR MAT VAPOR BARRIER SHALL BE INSTALLED AS A CONTINUOUS MATTE BENEATH THE CONCRETE FLOOR SLAB IN ACCORDANCE WITH ASTM STANDARD E-1643-94 AND MANUFACTURERS INSTRUCTIONS. ALL SEAMS SHALL OVERLAP A MINIMUM OF 6" AND BE SEALED WITH W.R. MEADOWS 4" WIDE PERMINATOR TAPE.
6. ALL PENETRATIONS (eg. UTLITY, PILE CAPS, FLOOR PILES) THROUGH THE VAPOR BARRIER SHALL BE SEALED PER MANUFACTURER'S SPECIFICATIONS AND BE SEALED WITH W.R. MEADOWS 4" WIDE TAPE.
7. THE VAPOR BARRIER SHALL EXTEND OVER THE TOP OF THE GRADE BEAM AND/OR SECURED TO THE PRE-CAST CONCRETE PANEL USING W.R. MEADOWS 4" WIDE PERMINATOR TAPE FASTENED PER MANUFACTURER'S INSTRUCTIONS.

PIPING LEGEND

- 2" DIAMETER PVC SCH 40 (PERFORATED)
- 2" DIAMETER PVC SCH 40
- 2" DIAMETER RISER PIPE

200 0 200 400 800 ft

GRAPHIC SCALE (ft)

\201944_\0040020_\Site COU1\Reports\Graphics\TempVentSystem\Fig16_Venting System Layout WOD Building.des

Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Venting System Layout Anheuser-Busch Building

Hunts Point • Bronx • New York

Figure 19

Tables

Table 1
Imported Materials Summary
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Reused Material Summary	Cubic Yards
Site C OU-2 Upland Fill	7,345
Site B Upland Fill	10,797
600 Food Center Drive Upland Fill	2,902
Crushed Concrete	13,490
Total*	**34,517**

Imported RCA Summary	Cubic Yards
Bronx County Recycling	28,495
Durante Bros. Construction	35,432
Top Soil Import	4,847
Total	**68,774**

Total Material Imported to the AB and GP Parcels	**103,291 cyds**

*All material volumes are based on truck capacities and number of loads and should be considered estimates.

Table 2
Upland Fill Reused
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Date Imported	Site C-OU2 (A.B. Greenway) Upland Fill - Placed on C OU-1 (cubic yards)														
	COU2-01	COU2-02	COU2-03	COU2-04	COU2-05	COU2-06	COU2-07	COU2-08	COU2-09	COU2-10	COU2-11	COU2-12	COU2-13	COU2-14	COU2-15
4/3/2007	150														
4/5/2007	150														
4/10/2007	200	425													
4/11/2007		75	500	250											
4/13/2007				250	500										
4/25/2007						500									
5/4/2007											80				
5/7/2007										135	75				
5/14/2007												100			
5/16/2007												200			
5/18/2007										180	180				
5/22/2007										174	174				
5/23/2007									475	75	75				
5/24/2007								200	50						
5/25/2007								207							
6/1/2007							82								
6/6/2007							450	154							
6/7/2007							142	142	142	142	144				
6/8/2007													189	189	189
C OU-2 Section Totals (Placed on C OU-1)	**500**	**500**	**500**	**500**	**500**	**500**	**674**	**703**	**667**	**706**	**728**	**300**	**189**	**189**	**189**
C OU-2 Site Total (Placed on C OU-1)	**7,345**														

Table 2
Upland Fill Reused
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Date Imported	Site B (Fulton Fish Market) Upland Fill - Placed on C OU-1 (cubic yards)													
	B-01	B-02	B-03	B-04	B-05	B-06	B-07	B-08	B-09	B-10	B-11	B-12	B-13	B-14
5/2/2007	60	60	60	60	60									
5/8/2007	160	80			32									
5/9/2007		366	52											
5/10/2007	75		485	68										
5/11/2007				340	52									
5/14/2007	114	102			18									
5/15/2007	32		92											
5/16/2007						120								
5/17/2007	75					282	68	66						
5/22/2007				124	232									
5/23/2007	204	202	204	68										
5/24/2007					166	584	34							
5/25/2007							555							
5/29/2007				100	184		100	416						
5/30/2007								164						
6/1/2007							105	105						
6/4/2007				157	158									
6/5/2007											132	132	133	133
6/6/2007								50			135	135	135	
6/7/2007											211	211	213	
6/8/2007											68	68	68	
Site B Section Totals (Placed C OU-1l)	**720**	**810**	**893**	**917**	**902**	**986**	**862**	**801**	**0**	**0**	**546**	**546**	**549**	**133**
Site B Totals (Placed on C OU-1)	**8,665**													

Table 2
Upland Fill Reused
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Date Imported	Site B (Fulton Fish Market) Upland Fill - Placed on C OU-2 (cubic yards)													
	B-01	B-02	B-03	B-04	B-05	B-06	B-07	B-08	B-09	B-10	B-11	B-12	B-13	B-14
6/11/2007														360
6/12/2007											84	84	84	84
6/13/2007											40	40	40	40
6/14/2007											52	52	52	52
6/15/2007											93	93	93	93
6/18/2007								80						
6/19/2007											42	42	43	43
6/20/2007											55	55	55	56
6/21/2007														30
6/28/2007	120													
7/5/2007										75				
Site B Section Totals (Placed on C OU-2)	**120**							**80**		**75**	**366**	**366**	**367**	**758**
Site B Total (Placed on C OU-2)	**2,132**													
Site B Section Totals (Placed on C OU-1 & C OU-2)	**840**	**810**	**893**	**917**	**902**	**986**	**862**	**881**	**0**	**75**	**912**	**912**	**916**	**891**
Site B Total (Placed on C OU-1 & C OU-2)	**10,797**													

Date Imported	**Site COU-3 (600 FCD) Upland Fill - Placed on C OU-1 (cubic yards)**								
	COU3-01	COU3-02	COU3-03	COU3-04	COU3-05	COU3-06	COU3-07	COU3-08	COU3-09
5/21/2007							160		
5/22/2007			92	92	92	92			
5/23/2007	125	125	35	35	35	35		42	42
5/24/2007	50	50	50	50	50	50	44	100	100
5/25/2007	54								
5/30/2007		242							
5/31/2007			245	245	246				
6/1/2007						81	81	81	81
Section Totals (Placed on C OU-1)	**229**	**417**	**422**	**422**	**423**	**258**	**285**	**223**	**223**
Totals (Placed on C OU-1)	**2,902**								

Table 2
Upland Fill Reused
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Date Imported	Placed on the AB Parcel
Crushed Material (From Sites COU-2, 600 Food Center Drive, 200 Food Center Drive, & Site B)	cubic yards
4/19/2007	300
4/20/2007	400
4/23/2007	400
4/24/2007	450
4/25/2007	425
4/26/2007	320
4/27/2007	300
5/1/2007	80
5/11/2007	162
5/14/2007	550
5/15/2007	580
5/16/2007	550
5/17/2007	579
5/18/2007	731
5/21/2007	814
5/22/2007	688
5/23/2007	450
5/24/2007	553
5/25/2007	533
5/29/2007	877
5/30/2007	750
5/31/2007	935
6/1/2007	601
6/4/2007	450
6/5/2007	260
6/6/2007	20
6/7/2007	75
6/8/2007	141
Total	**12,973**

Date Imported	Placed on the GP Parcel
Crushed Material (From Sites COU-2, 600 Food Center Drive, 200 Food	cubic yards
6/18/2007	250
6/19/2007	267
Total	**517**

Total cyds - Placed on the AB & GP Parcels)	**13,490**

Table 3
Upland Fill Reuse Sample Results Summary
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Site C OU-2

HDR Sample ID No.	Upland Fill	COU2-01	COU2-02	COU2-03	COU2-04	COU2-05	COU2-06	COU2-07	COU2-08	COU2-09	COU2-10	COU2-11	COU2-12	COU2-13	COU2-14	COU2-15
Lab Sample No.	Material Reuse	AC29445-001	AC29445-002	AC29478-001	AC29524-001	AC29588-001	AC29779-001	AC29716-001	AC29716-002	AC29716-003	AC29716-004	AC29716-005	AC30240-001	AC30397-001	AC30397-002	AC30397-003
Sampling Date	Criteria	3/27/2007	3/27/2007	3/29/2007	3/29/2007	4/2/2007	4/12/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	4/9/2007	5/7/2007	5/10/2007	5/10/2007	5/10/2007
TCLP Metals (mg/L)																
Mercury	0.2	ND	ND	ND	ND	ND	0.0018	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	100	0.45	0.60	0.60	0.74	0.72	0.66	1.20	1.00	0.47	0.49	0.93	0.79	0.99	0.80	0.60
Cadmium	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	5	0.44	ND	1.5	0.79	0.71	0.32*	0.29	0.20	ND	0.30	0.70	ND	ND	0.49	ND
Nickel	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TCLP Volatiles (mg/L)																
Benzene	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0015	NA	NA	NA	NA	NA
Waste Character. (mg/kg)																
Reactive Sulfide	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

* - sample dilution factor

Site B

HDR Sample ID No.	Upland Fill	B-01	B-02	B-03	B-04	B-05	B-06	B-07	B-08	B-09	B-10	B-11	B-12	B-13	B-14
Lab Sample No.	Material Reuse	AC29931-001	AC29931-002	AC29931-003	AC29931-004	AC29931-005	AC29931-006	AC29931-007	AC29931-008	AC29937-001	AC29937-002	AC30764-001	AC30764-002	AC30764-003	AC30764-004
Sampling Date	Criteria	4/23/2007	4/23/2007	4/23/2007	4/23/2007	4/23/2007	4/23/2007	4/23/2007	4/23/2007	4/23/2007	4/23/2007	5/30/2007	5/30/2007	5/30/2007	5/30/2007
TCLP Metals (mg/L)															
Mercury	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	100	0.52	0.62	0.77	0.70	0.86	0.70	0.77	1.00	0.95	0.78	0.61	0.42	0.64	0.36
Cadmium	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	5	ND	ND	0.29	0.22	0.45	0.16	0.18	0.27	ND	ND	ND	ND	0.19	ND
Nickel	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Waste Character. (mg/kg)															
Reactive Sulfide	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead (mg/kg)															
Lead	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19 **	13 **	110 **	5.6 **

Notes:

mg/L - Milligrams per liter
mg/kg - Milligram per kilogram
NA - Not analyzed
ND - Not detected at analytical detection limit.
NS - No standard for analyte.
* - Sample dilution factor = 2
** - Sample dilution factor = 100

600 Food Center Drive

HDR Sample ID No. Lab Sample No. Sampling Date	Upland Fill Material Reuse Criteria	COU3-01 AC29630-001 4/4/2007	COU3-02 AC29630-002 4/4/2007	COU3-03 AC29630-003 4/4/2007	COU3-04 AC29694-001 4/6/2007	COU3-05 AC29694-002 4/6/2007	COU3-06 AC29694-003 1/0/1900	COU3-07 AC29694-004 1/0/1900	COU3-08 AC29694-005 1/0/1900	COU3-09 AC29694-006 1/0/1900
TCLP Metals (mg/L)										
Mercury	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	100	0.94	1.10	1.10	1.20	1.20	1.3	1.20	1.50	1.50
Cadmium	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead	5	0.23	0.34	0.40	0.71	0.80	0.50	0.54	0.67	0.45
Nickel	-	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Silver	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Waste Character. (mg/kg)										
Reactive Sulfide	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

mg/L - Milligrams per liter
mg/kg - Milligram per kilogram
NA - Not analyzed
ND - Not detected at analytical detection limit.
NS - No standard for analyte.

Table 4
Mudline Sample Results Summary
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

HDR Sample ID No.	600-ML01	600-ML02	600-ML03	600-ML04	Upland Fill Material Reuse Criteria
Lab Sample No.	AC31059-001	AC31059-002	AC31059-003	AC31059-004	
Sampling Date	6/13/2007	6/13/2007	6/13/2007	6/13/2007	
% Solids	90%	80%	70%	77%	NS
VOCs (mg/kg)					
1,2,4 - Trimethylbenzene	0.0013	ND	ND	ND	NS
Acetone	ND	ND	0.023 J	ND	0.05
Carbon Disulfide	ND	0.0015 J	ND	ND	NS
Methylene Chloride	0.0071 B	0.0075 B	0.0094 B	0.0061 JB	0.05
Total VOCs	0.0084	0.009	0.0324	0.0061	NS
SVOCs (mg/kg) *					
2 - Methylnaphthalene	3.5	0.35 J	ND	1.9 J	NS
Acenaphthene	5.7	0.52	2 J	1.5 J	98
Acenaphthylene	0.6 J	0.73	0.64 J	4.1	107
Anthracene	5.5	1.2	4.8	6.6	500
Benzo [a] anthracene	**5.7**	**2.7**	**8.4**	**14**	1
Benzo [a] pyrene	**3.8**	**2.6**	**7.3**	**11**	1
Benzo [b] fluoranthene	**6.2**	**3.7**	**10**	**14**	1.7
Benzo [g,h,i] perylene	2.1	1.6	4.1	5.8	500
Benzo [k] fluoranthene	**2**	1	**3.3**	**4.9**	1.7
bis (2-Ethylhexyl) phthalate	ND	0.2 J	0.25 J	0.24 J	NS
Butylbenzylphthalate	3.8	ND	ND	ND	NS
Carbazole	2.3	0.29 J	1.8 J	1 J	NS
Chrysene	**7.1**	**2.6**	**8.5**	**13**	1
Dibenzo [a,h] anthracene	**0.64** J	0.42	**1.2** J	**1.8** J	0.56
Dibenzofuran	4.6	0.41 J	1.3 J	1.1 J	NS
Di-n-butylphthalate	ND	0.11 JB	ND	ND	NS
Di-n-octylphthalate	ND	0.89 J	ND	ND	NS
Fluoranthene	21	5.2	18	23	500
Fluorene	6.4	0.87	2.5	4.6	386
Indeno [1,2,3-cd] pyrene	1.8 J	1.4	3.8	5.3	5.6
Naphthalene	1.1 J	0.48	0.92 J	3.8	12
Phenanthrene	20	4	14	26	500
Pyrene	15	6.3	19	29	500
Total SVOCs	118.84	37.57	111.81	172.64	NS
Pesticides (mg/kg)					
Chlordane	ND	ND	0.03	ND	2.9
P,P'-DDD	ND	0.023	0.0049 D	ND	14
P,P'-DDE	ND	0.0058	ND	ND	17
P,P'-DDT	0.003 D	0.036	ND	0.01 D	47
PCBs (mg/kg)					
PCBs	ND	ND	ND	ND	NS
Metals (mg/kg) **					
Aluminum	4,400	4,440	6,600	4,400	NS
Antimony	ND	ND	6.3	ND	NS
Arsenic	4.9	6.2	12	9.6	16
Barium	39	93	120	71	400
Beryllium	ND	ND	ND	ND	47
Cadmium	ND	ND	ND	ND	7.5
Calcium	21,000	19,000	33,000	28,000	NS
Chromium	12	16	48	19	NS
Cobalt	5	6.4	8.2	5.5	NS
Copper	31	62	88	46	270
Iron	14,000	13,000	18,000	15,000	NS
Lead	120	200	240	200	450
Magnesium	14,000	13,000	14,000	7,200	NS
Manganese	210	320	1,000	650	2,000
Mercury	0.13	0.49	0.76	0.45	NS
Nickel	12	17	41	20	130
Potassium	890	1,100	1,600	1,200	NS
Selenium	ND	ND	ND	ND	4
Silver	ND	ND	ND	ND	8.3
Sodium	1,900	2,200	3,400	2,600	NS
Thallium	ND	ND	ND	ND	NS
Vanadium	19	22	36	21	NS
Zinc	110	170	210	110	2,480

Notes:

B - Value is less than the contract-required detection limit but greater than the instrument detection limit.
D - Concentration recovered from diluted sample.
J - Estimated concentration; compound present below quantitation limit.
mg/kg - Milligram per kilogram
ND - Not detected at analytical detection limit.
NS - No standard for analyte.
Note - Numbers in bold exceed the upland fill material reuse criteria.
* - All samples analyzed for SVOCs underwent a dilution with a ratio of 5:1
** - All samples analyzed for Metals underwent a dilution with a ratio of 100:1

Table 5
Imported RCA Breakdown
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Date Imported	Durante Bros. Construction (cyds)
5/17/2007	32
5/18/2007	1,728
5/21/2007	1,856
5/22/2007	1,984
5/23/2007	2,528
5/24/2007	1,760
5/25/2007	1,184
12/4/2007	595
12/5/2007	210
12/6/2007	770
12/11/2007	280
12/12/2007	385
12/13/2007	175
12/17/2007	280
12/19/2007	560
3/24/2008	175
3/25/2008	35
4/21/2008	562
4/22/2008	665
4/24/2008	875
4/25/2008	875
5/1/2008	420
5/2/2008	1,040
5/5/2008	1,050
5/6/2008	570
5/7/2008	1,400
5/8/2008	750
5/12/2008	690
6/9/2008	175
8/18/2008	896
8/19/2008	704
8/26/2008	640
8/27/2008	192
8/28/2008	768
8/29/2008	608
9/3/2008	384
9/4/2008	448
9/5/2008	320
9/9/2008	352
9/10/2008	32
9/11/2008	288
9/15/2008	428
9/30/2008	128
10/3/2008	384
10/16/2008	192
10/21/2008	256
10/22/2008	160
10/23/2008	192
10/29/2008	320
10/30/2008	160
11/3/2008	608
11/5/2008	736
11/6/2008	960
11/7/2008	1,155
11/10/2008	512
SubTotals	**35,432**

Date Imported	Bronx County Recycling (cyds)
5/16/2007	724
5/17/2007	1,460
5/18/2007	1,515
5/21/2007	1,795
5/22/2007	665
5/23/2007	1,788
5/24/2007	1,450
5/25/2007	1,270
5/29/2007	1,750
5/30/2007	1,813
5/31/2007	1,575
6/1/2007	1,300
6/19/2007	315
6/20/2007	750
6/21/2007	915
6/22/2007	925
7/23/2007	930
7/25/2007	140
7/26/2007	1,330
7/27/2007	1,015
7/30/2007	390
7/31/2007	935
8/2/2007	875
8/3/2007	1,285
8/7/2007	735
8/9/2007	665
11/13/2007	150
12/3/2007	35
SubTotals	**28,495**

Date Imported	Top Soil Import (cyds)
10/27/2008	672
11/1/2008	500
12/4/2008	225
12/15/2008	425
1/8/2009	900
1/9/2009	600
1/13/2009	75
1/14/2009	75
4/27/2009	100
4/28/2009	325
4/29/2009	325
4/30/2009	400
5/1/2009	225
SubTotals	**4,847**

Total	**68,774 cyds**

Table 6
FRAC Tank Water Sample Results Summary
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Sample ID	T-1	T2	Tank 1-11-30-07
Sampling Date	12/05/2007	12/05/2007	11/30/2007
Matrix	Water	Water	Water
VOCs (ug/L)			
1,2,4-trimethylbenzene	ND	ND	7.12
benzene	ND	ND	10.4
ethylbenzene	ND	ND	10.2
toluene	ND	ND	12.1
total xylenes	ND	ND	38
Total Detected VOCs	ND	ND	77.82
SVOCs (ug/L)			
2,4-dimethylphenol	ND	ND	60.3
2-methylnaphthalene	ND	ND	376
2-methylphenol	ND	ND	56.4
4-chloro-3-methylphenol	ND	ND	40
4-methylphenol	ND	ND	79.4
acenaphthene	ND	ND	897
acenaphthylene	ND	ND	651
anthracene	ND	ND	74
benzo(a)anthracen	ND	ND	15.9
benzo(g,h,i)perylene	ND	ND	15.4
benzo(k)fluoranthene	ND	ND	12.1
chrysene	ND	ND	16.8
dibenz(a,h)anthracene	ND	ND	15.6
dibenzofuran	ND	ND	473
fluoranthene	ND	ND	104
fluorene	ND	ND	539
indeno(1,2,3-cd)pyrene	ND	ND	24.8
naphthalene	ND	1,281	15,341
phenanthrene	ND	ND	413
pyrene	ND	ND	193
Total detected SVOCs	ND	1,281	19,397.7

Note:

ND-Not Detected
NS - Not Sampled
ug/L - Micrograms per liter

Table 6
FRAC Tank Water Sample Results Summary
Site C (OU1 OU2) Final Engineering Report
Hunts Point, Bronx, NY

Sample ID	**T-1**	**T2**	**Tank 1-11-30-07**
Sampling Date	**12/05/2007**	**12/05/2007**	**11/30/2007**
Matrix	**Water**	**Water**	**Water**
Herbicides/Pesticides (ug/L)	ND	ND	ND
PCBs (ug/L)	ND	ND	ND
Sulfur	<1%	<1%	NS
pH	6.66	6.93	NS
Total Solids	<1%	<1%	<1%
Flash Point	>200F	>200F	>200F
TOX (ppm)	<0.005 ppm	<0.005 ppm	<0.005 ppm
Metals (ug/L)			
aluminum	0.185	0.185	3.74
antimony	ND	ND	0.08
barium	0.11	0.08	0.233
calcium	264	259	273
copper	ND	ND	0.08
iron	15.3	23	35.5
lead	ND	ND	0.417
magnesium	75.8	65.3	103
manganese	2.26	1.85	2.45
potassium	69.7	88.3	61.7
sodium	809	709	2,800
zinc	0.122	0.122	0.588

Note:

ND-Not Detected
NS - Not Sampled
ug/L - Micrograms per liter

Table 7

Passive Sub-Slab Venting System Summary Table
NYCEDC - Site C (OU-1 and OU-2) Final Engineering Report

Baseline

	CLIENT ID:	SS-SW			SS-SE			SS-NE			SS-NW			SS-DT			AMB-SW		
	LAB ID:	787351			787352			787353			787354			787355			787356		
	COLLECT DATE:	5-Mar-2009			5-Mar-2009			5-Mar-2009			5-Mar-2009			5-Mar-2009			5-Mar-2009		
	MATRIX:	AIR			AIR			AIR			AIR			AIR			AIR		
ANALYTE	CASNUMBER	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Volatile Organics TO-15																															
Benzene	71-43-2	0.44		ppbv	1.4		ug/m3	0.31		ppbv	0.99		ug/m3	0.6		ppbv	1.9		ug/m3	0.82		ppbv	2.6		ug/m3	0.51		ppbv	1.6		ug/m3	0.38		ppbv	1.2		ug/m3
Toluene	108-88-3	5.8		ppbv	22		ug/m3	5.1		ppbv	19		ug/m3	7.3		ppbv	28		ug/m3	3.7		ppbv	14		ug/m3	3.2		ppbv	12		ug/m3	0.7		ppbv	2.6		ug/m3
Ethylbenzene	100-41-4	0.49		ppbv	2.1		ug/m3	0.47		ppbv	2		ug/m3	0.56		ppbv	2.4		ug/m3	0.88		ppbv	3.8		ug/m3	0.33		ppbv	1.4		ug/m3	0.2	U	ppbv	0.87	U	ug/m3
Xylene (m,p)	1330-20-7	1.5		ppbv	6.5		ug/m3	0.99		ppbv	4.3		ug/m3	1.7		ppbv	7.4		ug/m3	2.8		ppbv	12		ug/m3	1.1		ppbv	4.8		ug/m3	0.5	U	ppbv	2.2	U	ug/m3
Xylene (o)	95-47-6	0.59		ppbv	2.6		ug/m3	0.35		ppbv	1.5		ug/m3	0.59		ppbv	2.6		ug/m3	0.75		ppbv	3.3		ug/m3	0.4		ppbv	1.7		ug/m3	0.2	U	ppbv	0.87	U	ug/m3
Total BTEX		8.82		ppbv	34.6		ug/m3	7.22		ppbv	27.79		ug/m3	10.75		ppbv	42.3		ug/m3	8.95		ppbv	35.7		ug/m3	5.54		ppbv	21.5		ug/m3	1.08		ppbv	3.8		ug/m3
Naphthalene	91-20-3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3

Round 1

	CLIENT ID:	SS-SW			SS-SE			SS-NE			SS-NW			SS-DT			AMB-SW		
	LAB ID:	804254			804257			804258			804255			804256			804253		
	COLLECT DATE:	19-Aug-2009			19-Aug-2009			19-Aug-2009			19-Aug-2009			19-Aug-2009			19-Aug-2009		
	MATRIX:	AIR			AIR			AIR			AIR			AIR			AIR		
ANALYTE	CASNUMBER	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Volatile Organics TO-15																															
Benzene	71-43-2	1.7		ppbv	5.4		ug/m3	1.3		ppbv	4.2		ug/m3	1.6		ppbv	5.1		ug/m3	1.6		ppbv	5.1		ug/m3	0.47		ppbv	1.5		ug/m3	0.22		ppbv	0.7		ug/m3
Toluene	108-88-3	21		ppbv	79		ug/m3	21		ppbv	79		ug/m3	23		ppbv	87		ug/m3	23		ppbv	87		ug/m3	5.3		ppbv	20		ug/m3	0.87		ppbv	3.3		ug/m3
Ethylbenzene	100-41-4	4.6		ppbv	20		ug/m3	4.3		ppbv	19		ug/m3	4.4		ppbv	19		ug/m3	4.5		ppbv	20		ug/m3	1.9		ppbv	8.3		ug/m3	0.2	U	ppbv	0.87	U	ug/m3
Xylene (m,p)	1330-20-7	17		ppbv	74		ug/m3	14		ppbv	61		ug/m3	16		ppbv	69		ug/m3	16		ppbv	69		ug/m3	6.9		ppbv	30		ug/m3	0.5	U	ppbv	2.2	U	ug/m3
Xylene (o)	95-47-6	6.8		ppbv	30		ug/m3	5.3		ppbv	23		ug/m3	6.4		ppbv	28		ug/m3	6.4		ppbv	28		ug/m3	2.8		ppbv	12		ug/m3	0.2	U	ppbv	0.87	U	ug/m3
Total BTEX		51.1		ppbv	208.4		ug/m3	45.9		ppbv	186.2		ug/m3	51.4		ppbv	208.1		ug/m3	51.5		ppbv	209.1		ug/m3	17.37		ppbv	71.8		ug/m3	1.09		ppbv	4		ug/m3
Naphthalene	91-20-3	1.8		ppbv	9.4		ug/m3	1.6		ppbv	8.4		ug/m3	2.2		ppbv	12		ug/m3	0.95		ppbv	5		ug/m3	1.3		ppbv	6.8		ug/m3	0.5	U	ppbv	2.6	U	ug/m3

Round 2

	CLIENT ID:	SS-SW			SS-SE			SS-NE			SS-NW			SS-DT			Ambient		
	LAB ID:	814495			814494			814493			814492			814491			814496		
	COLLECT DATE:	23-Nov-2009			23-Nov-2009			23-Nov-2009			23-Nov-2009			23-Nov-2009			23-Nov-2009		
	MATRIX:	AIR			AIR			AIR			AIR			AIR			AIR		
ANALYTE	CASNUMBER	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Volatile Organics TO-15																															
Benzene	71-43-2	0.55		ppbv	1.8		ug/m3	0.58		ppbv	1.9		ug/m3	0.5	U	ppbv	1.6		ug/m3	0.49		ppbv	1.6		ug/m3	2.0	U	ppbv	6.4		ug/m3	0.25		ppbv	0.8		ug/m3
Toluene	108-88-3	0.98		ppbv	4.3		ug/m3	1.4		ppbv	6.1		ug/m3	0.51		ppbv	2.2		ug/m3	0.45		ppbv	2.0		ug/m3	2.0	U	ppbv	8.7		ug/m3	0.2		ppbv	0.87		ug/m3
Ethylbenzene	100-41-4	5.1		ppbv	19		ug/m3	6.7		ppbv	25		ug/m3	3.6		ppbv	14		ug/m3	5.9		ppbv	22		ug/m3	3.2		ppbv	12		ug/m3	0.43		ppbv	1.6	U	ug/m3
Xylene (m,p)	1330-20-7	3.4		ppbv	15		ug/m3	4.6		ppbv	20		ug/m3	1.7		ppbv	7.4		ug/m3	1.5		ppbv	6.5		ug/m3	5.0	U	ppbv	22		ug/m3	0.5	U	ppbv	2.2	U	ug/m3
Xylene (o)	95-47-6	1.3		ppbv	5.6		ug/m3	1.7		ppbv	7.4		ug/m3	0.61		ppbv	2.6		ug/m3	0.53		ppbv	2.3		ug/m3	2.0	U	ppbv	8.7		ug/m3	0.2	U	ppbv	0.87	U	ug/m3
Total BTEX		11.33		ppbv	45.7		ug/m3	14.98		ppbv	60.4		ug/m3	6.42		ppbv	27.8		ug/m3	8.87		ppbv	34.4		ug/m3	3.2		ppbv	57.8		ug/m3	0.88		ppbv	1.67		ug/m3
Naphthalene	91-20-3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	1.3	U	ppbv	6.8	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	5.0	U	ppbv	26	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3

Round 3

	CLIENT ID:	SS-SW			SS-SE			SS-NE			SS-NW			SS-DT			Ambient		
	LAB ID:	820354			820353			820352			820355			820356			820357		
	COLLECT DATE:	15-Feb-2010			15-Feb-2010			15-Feb-2010			15-Feb-2010			15-Feb-2010			15-Feb-2010		
	MATRIX:	AIR			AIR			AIR			AIR			AIR			AIR		
ANALYTE	CASNUMBER	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units	Conc.	Qual.	Units
Volatile Organics TO-15																															
Benzene	71-43-2	0.48		ppbv	1.5		ug/m3	0.41		ppbv	1.3		ug/m3	0.42		ppbv	1.3		ug/m3	0.49		ppbv	1.6		ug/m3	0.3		ppbv	1.1		ug/m3	0.32		ppbv	1		ug/m3
Toluene	108-88-3	3.4		ppbv	13		ug/m3	3.1		ppbv	12		ug/m3	2.4		ppbv	9		ug/m3	1.9		ppbv	7.2		ug/m3	0.8		ppbv	3.1		ug/m3	0.31		ppbv	1.2		ug/m3
Ethylbenzene	100-41-4	0.47		ppbv	2		ug/m3	0.58		ppbv	2.5		ug/m3	0.26		ppbv	1.1		ug/m3	0.2		ppbv	0.87		ug/m3	0.2	U	ppbv	0.87	U	ug/m3	0.2	U	ppbv	0.87	U	ug/m3
Xylene (m,p)	1330-20-7	1.7		ppbv	7.4		ug/m3	2		ppbv	8.7		ug/m3	0.87		ppbv	3.8		ug/m3	0.48		ppbv	2.1		ug/m3	0.5		ppbv	2.1		ug/m3	0.4	U	ppbv	1.7	U	ug/m3
Xylene (o)	95-47-6	0.66		ppbv	2.9		ug/m3	0.67		ppbv	2.9		ug/m3	0.31		ppbv	1.3		ug/m3	0.2		ppbv	0.87		ug/m3	0.2	U	ppbv	0.87	U	ug/m3	0.2	U	ppbv	0.87	U	ug/m3
Total BTEX		6.71		ppbv	26.8		ug/m3	6.76		ppbv	27.4		ug/m3	4.26		ppbv	16.5		ug/m3	3.27		ppbv	12.64		ug/m3	1.6		ppbv	6.3		ug/m3	0.63		ppbv	2.2		ug/m3
Naphthalene	91-20-3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3	5.0	U	ppbv	2.6	U	ug/m3	0.5	U	ppbv	2.6	U	ug/m3

Notes
ppbv - parts per billion volume
ug/m3 - micrograms per cubic meter
U - compound was below the dectection limit (non-dectect)

Appendices (on enclosed CD)

Appendix A: NYSDEC Correspondence

New York State Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Eastern Remedial Action, 11th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9622 • **FAX:** (518) 402-9627
Website: www.dec.state.ny.us

Erin M. Crotty
Commissioner

FILE COPY

January 22, 2002

Ms. Kay Zias
Director, Environmental Planning
New York City Economic Development Corporation
110 William Street
New York, New York 10038

Dear Ms. Zias:

Re: Voluntary Cleanup Project
Hunts Point Food Distribution Center
Site C Response Plan
Site No. V00412-2

The public comment period for the Response Plan for the above-referenced project expired on January 11, 2001. No public comments were received, therefore, the City may proceed with the implementation of the remedial recommendations for the site as described in the Response Plan.

Please note that while a formal Tidal Wetlands Permit will not be required, remedial activities that are to be performed along the bulkhead area must be carried out in compliance with all substantive technical requirements applicable to a formal Tidal Wetlands Permit issued by the New York State Department of Environmental Conservation (NYSDEC).

To comply with the technical requirements, the City is required to obtain a tidal wetlands jurisdictional determination from the NYSDEC Region 2 Bureau of Marine Resources, and to follow applicable guidelines during remedial construction. The proposed redevelopment as called for in the approved Response Plan includes the construction of a landscaped area, or vegetative buffer zone along the East River. This will involve the placement of a low-permeability barrier (cap), such as a geosynthetic clay liner (GCL) below the vegetative layer in the buffer zone. The minimum dimensional requirements of the cap will need to be determined by the Bureau of Marine Resources. Any other areas outside of the vegetative buffer zone that are not covered by the proposed building or asphalt parking lot, will be covered with a demarcation barrier, such as a geotextile fabric, and at least one (1) foot of clean fill

Please remember that at the completion of the work, the City must submit a Closeout Report that documents the work done, and includes a certification signed by a professional engineer with the following language: "*I certify that the Response Plan was implemented and that all construction activities were completed in accordance with the Department-approved Response Plan and were personally witnessed by me (or "by a person under my direct supervision").*" A copy of the Closeout Report must also be sent to Stephanie Selmer of the New York State Department of Health (NYSDOH), as written concurrence from the NYSDOH

Ms. Zias
January 22, 2002

that the work is complete is also required before the NYSDEC can issue an assignable release to the City.

Sincerely,

Robert J. Cozzy, P.E.
Chief, Remedial Section C
Bureau of Eastern Remedial Action
Division of Environmental Remediation

cc: D. Desnoyers
K. Carpenter
C. Costopoulos
T. Lang, NYSDEC Reg. 2
J. Kann, NYSDEC Reg. 2
S. Zahn, NYSDEC Reg. 2
S. Selmer, NYSDOH
S. Bates, NYSDOH
J. Ketas, NYCDEP
K. McCarty, LMS
R. Lee / file

New York State Department of Environmental Conservation

)ivision of Environmental Remediation

Remedial Bureau B
625 Broadway, Albany, New York 12233-7016

Phone: (518) 402-9768 $ **FAX:** (518) 402-9020

Website: www.dec.state.ny.us

August 1, 2006

Ms. Kay Zias
New York City Economic
Development Corporation
110 William Street
New York, New York 10038

Dear Ms. Zias:

Re: **Voluntary Cleanup Project**
Hunts Point Food Distribution Center
Parcel C, Site No. V00412-2

The New York State Department of Environmental Conservation (NYSDEC) has completed its review of the June 20, 2006 letter request submitted by your consultant, HDR|LMS, regarding the re-use of materials generated as a result of the proposed demolition of the existing bulkhead at the above-referenced site. This request is hereby approved provided the following conditions are met:

1. All work along the shoreline and within the adjacent area will be performed in accordance with the requirements of 6 NYCRR Part 661. The NYSDEC=s Region 2 Bureau of Marine Resources (BMR) is the primary reviewer for the determination of consistency with 6 NYCRR Part 661. Therefore, the construction work plan for the proposed shoreline demolition work will be provided to Mr. Stephen Zahn in BMR for review prior to commencing any work along the bulkhead. The work plan will include a detailed site survey illustrating such features as the New York City sewers and other subsurface utilities, topographic features, depth of water at high tide, mean low tide, etc.

2. Recognizable, uncontaminated concrete generated as a result of the proposed demolition of the existing bulkhead may be used to bring the upland portions of the site up to final grade.

3. Any coal tar, coal ash and purifier waste and other material exhibiting visual or olfactory signs of contamination will be removed from the shoreline for off-site disposal, and the shoreline stabilized consistent with 6 NYCRR Part 661. The remaining material will be stockpiled for use as grading material for the upland areas, and will be sampled as follows to ensure that the material is non-hazardous as defined in 6 NYCRR Part 371: one (1) composite sample for every 500 cubic yards to be analyzed for TCLP metals and reactivity. If field screening of the soil samples results in high PID readings, a grab sample will also be collected for TCLP benzene analysis. This is consistent with the sampling protocol previously approved by the NYSDEC in a letter to your consultant, dated May 20, 2002, regarding the beneficial re-use of material on Parcel A.

4. The bulkhead demolition material and non-hazardous shoreline material will be used for non-surficial purposes only and will be covered with at least one (1) foot of clean fill.

If you have any questions, you may call me at (518) 402-9768.

Sincerely,

Ronnie E. Lee, P.E.
Project Manager
Division of Environmental Remediation

cc: R. Lee / file

ec: R. Cozzy, NYSDEC
C. Dowd, NYSDEC
A. Nagi, NYSDEC Reg.2
K. Brezner, NYSDEC Reg. 2
S. Zahn, NYSDEC Reg. 2
S. Selmer, NYSDOH
K. McCarty, LMS

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9020
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

January 22, 2007

Mr. Kevin McCarty
HDR | LMS
One Blue Hill Plaza
12th Floor
Pearl River, New York 10965-8509

Dear Mr. McCarty

Re: **Voluntary Cleanup Project**
Hunts Point Food Distribution Center
Parcel C, VCP Site No. V00412-2

The New York State Department of Environmental Conservation (NYSDEC) has reviewed your January 5, 2006 letter regarding the stockpiling and beneficial re-use of material expected to be generated from the proposed demolition and rehabilitation of the existing bulkhead along the Fulton Fish Market (Parcel B), Parcel C, 200 Food Center Drive, and 600 Food Center Drive. Based on that review, the NYSDEC has the following comments:

1. According to your letter, approximately 4,550 cubic yards of construction and demolition debris (C&D) or concrete will be generated from the proposed bulkhead work. As indicated in my August 1, 2006 letter to Ms. Kay Zias, recognizable, uncontaminated concrete generated from the demolition of the bulkhead may be used to bring the upland portion of Site C up to final grade. Please note that coal ash, coal tar or purifier waste that may be present should be cleaned from the surface of the C&D before it is re-used on Site C. Cleaning of the C&D may be accomplished through pressure washing or through mechanical means such as brushing.

2. Your letter also indicates that approximately 17,995 cubic yards of upland material (mainly soil) will be generated from the proposed bulkhead demolition work. It is understood prior to its use as grading material on the upland portion of the Site C that this material will be sampled in accordance with the protocols outlined in your January 5, 2007 letter to ensure that this material is non-hazardous as defined in 6 NYCRR Part 371 (also see Comment No. 4 below).

3. Based on our previous discussions, you are aware that the Department is open, in principle, to your proposal to amend the current Voluntary Cleanup Agreement (VCA) for Site C to include the adjacent property located at 600 Food Center Drive. The Department is also open to your proposal to break Site C into three (3) separate operable units (OU1, OU2 and OU3) representing: the upland portion of Site C, the proposed Greenway portion of Site C, and 600 Food Center Drive, respectively. Please note that you must provide the Department with the metes and bounds descriptions for each of these proposed operable units so that the VCA can be amended and the Department can proceed with the operable unit creation process. Additionally, you will need to prepare a remedial action work plan (or Response Plan) for the excavation work to be performed at 600 Food Center Drive (i.e. OU3). Please note that the Response Plan will have to be noticed in the Environmental Notice Bulletin and will be subject to a 30-day public comment period. As previously discussed with you, following our conditional approval of the work plan allowing it to be released for public comment, the Department may grant approval for you to proceed with the excavation and temporary stockpiling of the OU3 material during the 30-day public comment period. The work plan should include a sampling program that will document the nature and extent of existing contaminant concentration levels. The work plan should also describe where the excavated material will be temporarily stockpiled, as well as the soil stockpile sampling protocols that will be adopted (see Comment No. 2 above, and Comment No. 4 below). It is understood that the soil stockpiles will be maintained in accordance with the procedures outlined in your January 5, 2006 letter, that is, underlain and covered with plastic, etc.

4. The sampling frequency for the upland material excavated from Site C should be specified (for example, one (1) composite sample for every 1,000 yd^3). Also, the soil samples should be field screened with a PID. If field screening of the soil samples results in high PID readings, then a grab sample should also be collected for TCLP benzene analysis in addition to the composite sample for TCLP lead and reactivity. This also applies to upland material excavated from Parcel B and 600 Food Center Drive. Please note that if the stockpiled material, including stockpiled material from OU3, fails TCLP it will have to be removed for off-site disposal at an appropriate disposal facility.

5. It is expected that the mudline soils will be dewatered prior to being transported to an amendment facility. A description of the proposed dewatering procedures should be provided.

6. If you have not already done so, a detailed description of the proposed work along the shoreline, including the excavation of mudline soils, should be provided to Mr. Stephen Zahn of the Bureau of Marine Resources in our Region 2 office. This is consistent with my August 1, 2006 letter to Ms. Kay Zias.

7. A Health and Safety Plan and Community Air Monitoring Plan should be prepared for the proposed bulkhead work and associated earth-moving operations.

8. All vehicles leaving the stockpile areas should be free of any accumulations of soil. The exteriors of the trucks and tires should be properly cleaned prior to leaving the stockpile areas to minimize the amount of soil tracked by the trucks onto Food Center Drive while transporting material to and from the stockpile areas. Any soil spillage from the trucks along Food Center Drive should be properly cleaned up.

9. All of the proposed stockpiles including those which will be located in the parking lot of the Fulton Fish Market (Parcel B), and on Farragut Street should not be left in place for more than 60 days, except for material which has been segregated from the main soil stockpile due to obvious visual and olfactory signs of petroleum, coal tar or purifier waste contamination. The segregated material should be removed for transport to an appropriate off-site disposal facility within 30 days.

10. The bulkhead demolition material (concrete) and non-hazardous shoreline material should be used for non-surficial purposes only, and be covered with at least one (1) foot of clean fill in those areas not covered by the proposed buildings and parking lot.

11. It is understood that as part of the Storm Water Pollution Prevention Plan (SWPPP) for the proposed work on the upland portion of Site C, you will be filing a Construction General Permit GP-02-01 and its corresponding Notice of Intent (NOI) form with our Regional Office.

If you have any questions, you may call me at (518) 402-9768.

Sincerely,

Ronnie E. Lee, P.E.
Environmental Engineer II
Remedial Bureau B
Division of Environmental Remediation

Enclosure

cc: R. Lee / file

ec: R. Cozzy, NYSDEC
D. Christian, NYSDEC - DEE
A. Nagi, NYSDEC Reg. 2
S. Zahn, NYSDEC 2
S. Zacharias, NYSDEC Reg. 2
S. Selmer, NYSDOH
K. Zias, NYCEDC

New York State Department of Environmental Conservation
Division of Water, Region 2
47-40 21ST Street, Long Island City, NY 11101-5407
Phone: (718) 482-4933 • **FAX:** (718) 482-6516
Website: www.dec.state.ny.us

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 1, 2007

Steven G. Bilheimer, P.E.
HDR-LMS
1 Blue Hill Plaza, Floor 12
Pearl River, NY 10965-3104

Re: **Stormwater Pollution Prevention Plan (SPDES General Permit GP-02-01)**
Anheuser-Busch Companies Distribution Facility, Hunts Point, Bronx, NY
GP-02-01 Permit ID: NYR-10M364

Dear Mr. Bilheimer:

The Department has reviewed the revised Stormwater Pollution Prevention Plan (SWPPP) dated January 31, 2007 for the above-mentioned project. The revised SWPPP is acceptable to the Department.

Please ensure that the SWPPP is implemented according to the substantive requirements of the SPDES General Permit (GP-02-01) for stormwater discharges from construction activities. For all non-remediation construction activities, the following requirements must also be met:

1) A copy of the notice of intent (NOI) and NOI acknowledgement letter must be posted at the construction site in a prominent place for public viewing. A copy of the latest version of the SWPPP must be retained at the construction site from the date of initiation of construction activities to the date of final stabilization.

2) Contractor Certification Statement must be completed and signed by all contractors and subcontractors implementing, inspecting, and maintaining the measures and controls described in the SWPPP.

3) Inspection of Soil Erosion and Sediment Control (SESC) measures must be performed every seven (7) days and after a 24-hour storm event of greater than 0.5 inches, as detailed in the SWPPP. Based on the results of the inspection, necessary maintenance of the controls must be implemented within seven (7) calendar days or before the next storm event, whichever occurs first. Inspection and maintenance records must be prepared under the supervision of a licensed professional and must be available on-site.

4) The SWPPP must be amended if there is significant change in the design or implementation of any SESC or water quality controls which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States, wetlands, or public streets, and which has not otherwise been addressed in the SWPPP.

If you have any questions, please contact me at (718) 482-4936 or Mr. Imdadul Islam, P.E. at (718) 482-6439.

Sincerely,

Sebastian Zacharias, P.E.
Environmental Engineer 1

cc: R. Elburn
T. Rudolph
I. Islam
R. E. Lee, NYSDEC-DER, Remedial Bureau B, Albany
Ed Fitzmaurice, Anheuser-Busch Inc.

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9020
Website: www.dec.state.ny.us

Commissioner

March 30, 2007

Mr. Kevin McCarty
HDR | LMS
One Blue Hill Plaza
12th Floor
Pearl River, New York 10965-8509

Dear Mr. McCarty

Re: **Voluntary Cleanup Project**
Hunts Point Parcel C
VCP Site No. V00412-2

The New York State Department of Environmental Conservation (NYSDEC) hereby grants approval for Hennington, Durham & Richardson Architecture and Engineering P.C. | Lawler, Matusky & Skelly Engineers LLP to utilize a portable temporary crushing device to perform on-site crushing of large pieces of concrete, brick and rock generated from the proposed bulkhead rehabilitation work at Hunts Point Parcel B and Hunts Point Parcel C, pursuant to the following conditions:

1. The crushing equipment will be staged on Hunts Point Parcel C during this work.

2. The importation of material from off-site sources to be processed on-site is not allowed.

3. This approval applies only to construction and demolition (C&D) material generated as part of the bulkhead rehabilitation work proposed for Hunts Point Parcel B and Hunts Point Parcel C. C&D material from other locations at Hunts Point may not be brought to Parcel C to be processed.

4. The C&D material will be stored in a manner which prevents runoff, leakage or seepage from the staging area into or onto the ground surface around the staging area.

5. The processed material may only be re-used on the upland portion of Hunts Point Parcel C.

6. Any contaminants such as coal tar or purifier waste adhering to the surface of the C&D will be removed via pressure-washing or mechanical abrasion (brushing) prior to crushing. C&D that cannot be cleaned using these methods will be segregated for off-site disposal at an appropriate disposal facility.

7. The crusher will have a water-suppression system to ensure that unacceptable levels of dust are not generated by the crusher.

8. Appropriate air monitoring for particulates will be conducted in accordance with the approved Community Air Monitoring Plan.

9. Operation of the portable temporary crusher will be accordance with all local ordinances (noise and air pollution). As such, the developer and its contractor will be responsible for obtaining any required permits, or compliance with local ordinances.

If you have any questions, you may call me at (518) 402-9768.

Sincerely,

Ronnie E. Lee

Ronnie E. Lee, P.E.
Environmental Engineer II
Remedial Bureau B
Division of Environmental Remediation

cc: R. Lee / file

ec: R. Cozzy, NYSDEC
A. Nagi, NYSDEC Reg. 2
S. Maresca, NYSDEC - Reg. 2
J. Cryan, NYSDEC - Reg. 2
S. Selmer, NYSDOH
G. Laccetti, NYSDOH
K. Zias, NYCEDC

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9020
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

May 7, 2007

Ms. Kay Zias
New York City Economic
Development Corporation
110 William Street
New York, New York 10038

Dear Ms. Zias:

Re: **Voluntary Cleanup Project**
Hunts Point Food Distribution Center
Hunts Point Parcel C
Site No. V00412-2

Following our review of the Beneficial Use Determination (BUD) Petition submitted by HDR|LMS on behalf of the New York City Economic Development Corporation (NYCEDC), requesting approval for the importation of pavement, concrete, overlying soils and excavated sediment generated from the demolition of bulkheads and relieving platforms at 600 Food Center Drive, for use as grading fill on the Anheuser-Busch redevelopment project site, we are conditionally approving this request. The Anheuser-Busch redevelopment site is located on a portion of the Hunts Point Parcel C Voluntary Cleanup Program (VCP) Site. This Beneficial Use Determination has been assigned #899-2-03. This approval is conditioned upon compliance with the following requirements:

1. The materials generated from the bulkhead demolition work at 600 Food Center Drive, or any other Hunts Point site will not be used in the top one (1) foot of cover at the Anheuser-Busch redevelopment site in vegetated areas or other areas not covered by structures or asphalt. Soils used in the top one (1) foot in vegetated areas must comply with the approved Imported Backfill Limits for Hunts Point.

2. Manufactured gas plant (MGP) wastes described in the petition will be removed from excavated and demolished materials for disposal under Parts 360 or 370 Series, as appropriate.

3. Exempt-type construction and demolition (C&D) debris materials (e.g., concrete), will be examined for visual contamination by MGP, and any MGP waste removed via pressure-washing or mechanical abrasion (brushing) prior to size reduction or placement.

4. All soils or soil-like overburden materials excavated from 600 Food Center Drive will be tested for leachable concentrations of contaminants using TCLP extraction, in accordance with the protocols outlined in the January 5, 2007 letter from Mr. Kevin McCarty of HDR|LMS, to ensure that this material is non-hazardous as defined in 6 NYCRR Part 371. This requirement also applies to all soils or soil-like overburden materials excavated from the Hunts Point Parcel B VCP Site Parcel and the Hunts Point Parcel C VCP Site. A minimum of one (1) sample for each 1,000 cubic yards will be analyzed using TCLP extraction.

5. Based on the January 2007 analytical results of samples taken from the sediments near the Hunts Point Parcel B VCP Site and the Hunts Point Parcel C VCP Site, excavated sediments from these locations may be placed under the final cover (i.e. buildings, asphalt parking lot or one (1) foot of clean soil cover) on the upland portions of Hunts Parcel C VCP Site without further testing. While some minor levels of contaminants were detected in these sediments, they were comparable to the levels in the historic fill that remain on the Hunts Point Parcel C VCP Site.

6. Based on the January 2007 analytical results of samples taken from the sediments near 600 Food Center Drive, excavated sediments from this location must be representatively sampled and tested for total concentrations of contaminants to ensure that these sediments meet (after amendment, as necessary) the imported backfill criteria as approved specifically for the Hunts Point VCP Sites, for both geotechnical and chemical characteristics. A minimum of one (1) sample for each 1,000 cubic yards will be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) Metals, and pesticides/polychlorinated biphenyls (Pest/PCBs). Sediment samples from 600 Food Center Drive will be compared to the approved Imported Backfill Limits provided to Mr. Kevin McCarty of HDR|LMS in a letter from the Department, dated October 27, 2006. In evaluating the sediment sampling data, the Department may issue a site-specific exemption for exceedances of the Imported Backfill Limits for one or more parameters based upon site-specific conditions such as the presence of historic fill on the site; the background levels of residual contamination on the Hunts Point Parcel C VCP Site; the placement of the sediment material under the impervious areas of the final cover (see Comment No. 5 above); etc., in accordance with the 6 NYCRR Part 375-6.7(d).

7. The Department reserves the right to modify, suspend or revoke this determination at any time should conditions warrant. Additionally, this

determination does not exempt the NYCEDC from any local, state, or federal requirements.

This BUD presumes that all materials from 600 Food Center Drive will only be placed within the boundaries of the Hunts Point Parcel C VCP Site. Please note that the Department's Bureau of Waste Reduction & Recycling must separately review any proposal to use solid wastes as grading fill on any portions of the Anheuser-Busch redevelopment site that are not within the boundaries of the VCP Site.

On completion of the VCP project, the NYCEDC must submit a report to the myself and the other Department addressees below, of the actual, separate volumes of soil, exempt C&D debris, and amended excavated sediment used as fill pursuant to this BUD:

Mr. Thomas J. Lynch, P.E.
NYSDEC
Bureau of Solid Waste, Reduction
& Recycling
625 Broadway, 9th Floor
Albany, NY 12233-7253

Mr. Kenneth B. Brezner, P.E.
Regional Solid Materials Engineer
NYSDEC
1 Hunters Point Plaza
47-40 21st Street
Long Island City, NY 11101

If you have any questions regarding this conditional beneficial use determination approval, please do not hesitate to contact me at (518) 402-9768.

Sincerely,

Ronnie E. Lee, P.E.
Project Manager
Bureau of Eastern Remedial Action
Division of Environmental Remediation

cc: R. Lee / file

ec: R. Cozzy, NYSDEC
K. Prather, NYSDEC
A. Nagi, NYSDEC Reg. 2
K. Brezner, NYSDEC Reg. 2
S. Maresca, NYSDEC Reg. 2
S. Selmer, NYSDOH
K. McCarty, HDR|LMS

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9020
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

June 26, 2007

Ms. Kay Zias
New York City Economic
Development Corporation
110 William Street
New York, New York 10038

Dear Ms. Zias:

Re: **Voluntary Cleanup Project**
Hunts Point Parcel C, Operable Unit No. 1
Site No. V00412-2

The New York State Department of Environmental Conservation (NYSDEC) has completed its review of the analytical results for sediment samples collected from 600 Food Center Drive, which were submitted by your consultant, HDR|LMS, on June 19, 2007. Based on that review, the NYSDEC has determined that the sample results for all four (4) sediment samples exceed the Imported Backfill Limits established for Hunts Point particularly for several carcinogenic polyaromatic hydrocarbons. Therefore, this material may not be beneficially used on the upland portion of Hunts Point Parcel C, and should be properly disposed of off-site at an appropriate disposal facility.

If you have any questions, you may call me at (518) 402-9768.

Sincerely,

Ronnie E. Lee, P.E.
Environmental Engineer II
Remedial Bureau B
Division of Environmental Remediation

cc: R. Lee / file

ec: S. Dewes, NYSDEC
R. Cozzy, NYSDEC
K. Prather, NYSDEC
A. Nagi, NYSDEC Reg. 2
S. Selmer, NYSDOH
K. McCarty, HDR|LMS
S. Nakai, HDR|LMS

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9020
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

July 2, 2008

Ms. Kay Zias
New York City Economic
Development Corporation
110 William Street
New York, New York 10038

Dear Ms. Zias:

Re: Voluntary Cleanup Project
Hunts Point Parcel C
Operable Unit No. 1 (OU1)
Site No. V00412-2
Site Management Plan

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have completed their review of the revised Site Management Plan (SMP), dated May 28, 2008, and has determined that the SMP substantially addresses the requirements of the Voluntary Cleanup Agreement. However, it appears that the Health and Safety Plan (HASP) was not included with the submittal as stated on page 4 of the SMP. Based on the foregoing, the SMP is hereby conditionally approved with the understanding that the referenced HASP will be submitted by August 8, 2008 for review by the NYSDEC and the NYSDOH.

A copy of the approved document is required to be kept in the document repository located at the New York Public Library, 877 Southern Boulevard, Bronx, New York 10459.

As a reminder, all final documents and reports are to be in electronic format on compact computer discs (CDs). In general, documents should be delivered on standard CD which is CD-R type and "closed" so that no changes can be made to the fille on the disk. The disk should contain an Adobe® Acrobat® Portable Document Format (PDF) file and must be searchable.

If you have questions or concerns on this matter, please contact me at (518) 402-9768.

Sincerely,

Ronnie E. Lee

Ronnie E. Lee, P.E.
Project Manager
Bureau of Eastern Remedial Action
Division of Environmental Remediation

Enclosure

cc: R. Lee / file

ec: S. Dewes, DEC
A. Nagi, DEC - Reg. 2
S. Selmer, NYSDOH
K. McCarty, HDR|LMS

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9773
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

November 7, 2008

Mr. Kevin McCarty
HDR | LMS
One Blue Hill Plaza, 12th Floor
P.O. Box 1509
Pearl River, New York 10965-8509

Dear Mr. McCarty:

Re: **Voluntary Cleanup Project**
Hunts Point Parcel C, OU1
Site No. V00412-2

The New York State Department of Environmental Conservation (NYSDEC) has completed its review of your October 30, 2008 submittal including your request to beneficially re-use approximately 40 cubic yards of soil generated during utility installation work along a portion of the Hunts Point Perimeter Site, Site No. V00641-2, (a/k/a Food Center Drive) as backfill material on the Hunts Point Parcel C, OU1 site (Parcel C). Based on the analytical results of the sample collected from the Food Center Drive utility installation soil stockpile as well as residual levels of contamination at the adjacent Parcel C, you have proposed that the excavated soil be used as backfill material in the area of the temporary retention basin.

While some chemical constituents were detected in the composite soil stockpile sample at levels that moderately exceeded the approved Importation Backfill Limits, the levels were generally comparable to the contaminant concentration levels in soils that remain on-site at Parcel C. The NYSDEC has reviewed the data and concurs with your conclusions. Specifically, the data from the composite soil sample collected from the Food Center Drive soil stockpile indicates this soil is not significantly more contaminated than existing soils at Parcel C. Therefore, this material may be placed on Parcel C in accordance with your request subject to the following condition:

- The soils generated from the Food Center Drive utility installation work will not be used in the top one (1) foot of cover at Parcel C in vegetated areas or other areas not covered by structures or asphalt. Soils used in the top one (1) foot in vegetated areas must comply with all criteria outlined in the approved Importation Backfill Limits.

If you have any questions, please contact me at (518) 402-9768.

Sincerely,

Ronnie E. Lee, P.E.
Project Manager
Bureau of Eastern Remedial Action
Division of Environmental Remediation

cc: R. Lee / file

ec: S. Dewes, DEC
A. Nagi, DEC - Reg. 2
S. Selmer, NYSDOH
K. Zias, NYCEDC

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9773
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

December 11, 2008

Mr. Kevin McCarty
HDR | LMS
One Blue Hill Plaza, 12th Floor
P.O. Box 1509
Pearl River, New York 10965-8509

Dear Mr. McCarty:

Re: **Voluntary Cleanup Project**
Hunts Point Parcel C
Site No. V00412-2
City of New York, Bronx County

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have completed their review of the *September 2008 Generic Health and Safety Plan (GHASP)* for the above-referenced site, and have determined that the plan substantially addresses the requirements of the Voluntary Cleanup Agreement. Therefore, the GHASP is hereby approved.

A copy of the approved document is required to be kept in the document repository located at the New York Public Library, 877 Southern Boulevard, Bronx, New York 10459.

As a reminder, all final documents and reports are to be in electronic format on compact computer discs (CDs). In general, documents should be delivered on standard CD which is CD-R type and "closed" so that no changes can be made to the fille on the disk. The disk should contain an Adobe® Acrobat® Portable Document Format (PDF) file and must be searchable.

If you have questions or concerns on this matter, please contact me at (518) 402-9768.

Sincerely,

Ronnie E. Lee

Ronnie E. Lee, P.E.
Project Manager
Bureau of Eastern Remedial Action
Division of Environmental Remediation

cc: R. Lee / file

ec: S. Dewes, DEC
A. Nagi, DEC - Reg. 2
S. Selmer, NYSDOH
K. Zias, NYCEDC

STATE OF NEW YORK
DEPARTMENT OF HEALTH
Flanigan Square 547 River Street Troy, New York 12180-2216

Richard F. Daines, M.D.
Commissioner

Wendy E. Saunders
Executive Deputy Commissioner

April 1, 2009

Mr. Ronnie Lee
Division of Environmental Remediation
NYS Department of Environmental Conservation
625 Broadway, 11th Floor
Albany, NY 12233-7015

Re: **Sections of the Redevelopment Plan for the Operable Unit 1 Portion of Parcel C**
Hunts Point FDC, Site C
Site ID #V004122
Hunts Point / Bronx County

Dear Mr. Lee:

I have reviewed the December 2008 *Sections of the Redevelopment Plan for the Operable Unit 1 Portion of Parcel C* for the above-referenced site. I have no comments at this time and find the document acceptable as submitted.

Thank you for the opportunity to review and comment on this document. If you have any questions, please call me at (518) 402-7860.

Sincerely,

Stephanie L. Selmer
Public Health Specialist
Bureau of Environmental Exposure Investigation

ec: G. Litwin / J. Crua / file
S. Dewes – DEC, Central Office
Jane O'Connell – DEC, Reg. 2
N. Graber – NYCDOH
J. Roberts, P.E. – NYCDEP

N:\beei\Bureau\Sites\Region_2\BRONX\V002332\Site-C\Redevelopment Plan - SSDS.doc

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B
625 Broadway, Albany, New York 12233-7016
Phone: (518) 402-9768 • FAX: (518) 402-9020
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

May 20, 2009

Mr. Kevin McCarty
HDR | LMS
One Blue Hill Plaza - 12th Floor
P.O. Box 1509
Pearl River, NY 10965-8509

Re: **Voluntary Cleanup Project**
Hunts Point Parcel C
Site No.: V00412-2
City of New York, Bronx County

Dear Mr. McCarty:

The Department has completed its review of the document entitled "*Sections of the Redevelopment Plan for the Operable Unit 1 Portion of Parcel C*", dated April 23, 2009, has determined that the document substantially addresses the requirements of the Voluntary Cleanup Agreement. This document is hereby approved.

If you have any questions, you may call me at (518) 402-9768.

Sincerely,

Ronnie E. Lee

Ronnie E. Lee, P.E.
Environmental Engineer II
Remedial Bureau B
Division of Environmental Remediation

cc: R. Lee / file

ec: S. Dewes, DEC
A. Nagi, DEC - Reg. 2
S. Selmer, DOH
K. Zias, NYCEDC

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B – 12th Floor
625 Broadway, Albany, New York 12233-7016
Phone: 518-402-9768 • **Fax:** 518-402-9773
Website: www.dec.ny.gov

Alexander B. Grannis
Commissioner

June 17, 2010

Mr. Kevin McCarty
HDR | LMS
1 Blue Hill Plaza – 12th Floor
P.O. Box 1509
Pearl River, NY 10965-8509

Dear Mr. McCarty:

Re: **Voluntary Cleanup Project**
Hunts Point Parcel C
Site No. V00412-2

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have reviewed your May 14, 2010 request to discontinue sampling of the Passive Sub-Slab Venting System at the above referenced site. Your request is hereby approved based on the following reasons:

- The HVAC cooling system for the warehouse will maintain a positive pressure within the warehouse.
- Five (5) feet of additional fill material was brought in to raise the site above the 100-year coastal flood plain.
- A vapor barrier was installed beneath the warehouse.
- The main contaminants of concern at the site were cPAHs and metals.
- The concentrations of BTEX and naphthalene in the sub-slab samples collected over the course of four (4) quarterly sampling events were not elevated and exhibited a downward trend.

Soil vapor intrusion is not expected to occur based on the above information. Therefore, the NYSDEC and the NYSDOH concur that no further sampling is warranted at this time. If you have questions or concerns on this matter, please contact me at (518) 402-9768.

Sincerely,

Ronnie E. Lee

Ronnie E. Lee, P.E.
Project Manager
Bureau of Eastern Remedial Action
Division of Environmental Remediation

cc: R. Lee / file

ec: S. Dewes, DEC
A. Nagi, DEC - Reg. 2
S. Selmer, NYSDOH
K. Zias, EDC

Appendix B: Site Management Plan and Worker Notification Plan

Hunts Point Food Distribution Center Redevelopment Plan

Site Management Plan for Parcel C Operable Units 1 & 2 Bronx, New York

- Final -

Prepared for:

New York City Economic Development Corporation

110 William Street, New York, New York 10038

Prepared by:

HDR | LMS

One Blue Hill Plaza- 12th Floor, Pearl River New York 10965

May 2008

SITE MANAGEMENT PLAN

1.0 Overview and Objectives

The Upland (Operable Unit 1) portion of Parcel C is a site (Site C OU-1) located west of Food Center Drive (FCD) in the Hunts Point Food Distribution Center (HPFDC) of the Bronx, New York. The property is owned by the City of New York and is being leased to Anheuser Busch (AB) for a distribution facility location. AB is constructing and will be operating the distribution facility under the terms of its lease agreement with the City of New York. The location of the Site is shown on Figure 1. The site has been characterized during a previous investigation under the Voluntary Cleanup Agreement with New York State Department of Environmental Conservation (NYSDEC). The user of this Site Management Plan (SMP) should refer to the previous investigation reports, including the November 1999 Site Investigation Report and the March 2001 Response Plan for more detail, as needed.

The objective of this SMP is to set guidelines for the management of soil/fill material during the site redevelopment process and any activities which would breach the surficial cap (engineering control or cover system) at the Site after construction of the facility has been completed. This SMP addresses environmental concerns related to soil management including the importation of fill, and has been approved by the NYSDEC and the New York State Department of Health (NYSDOH).

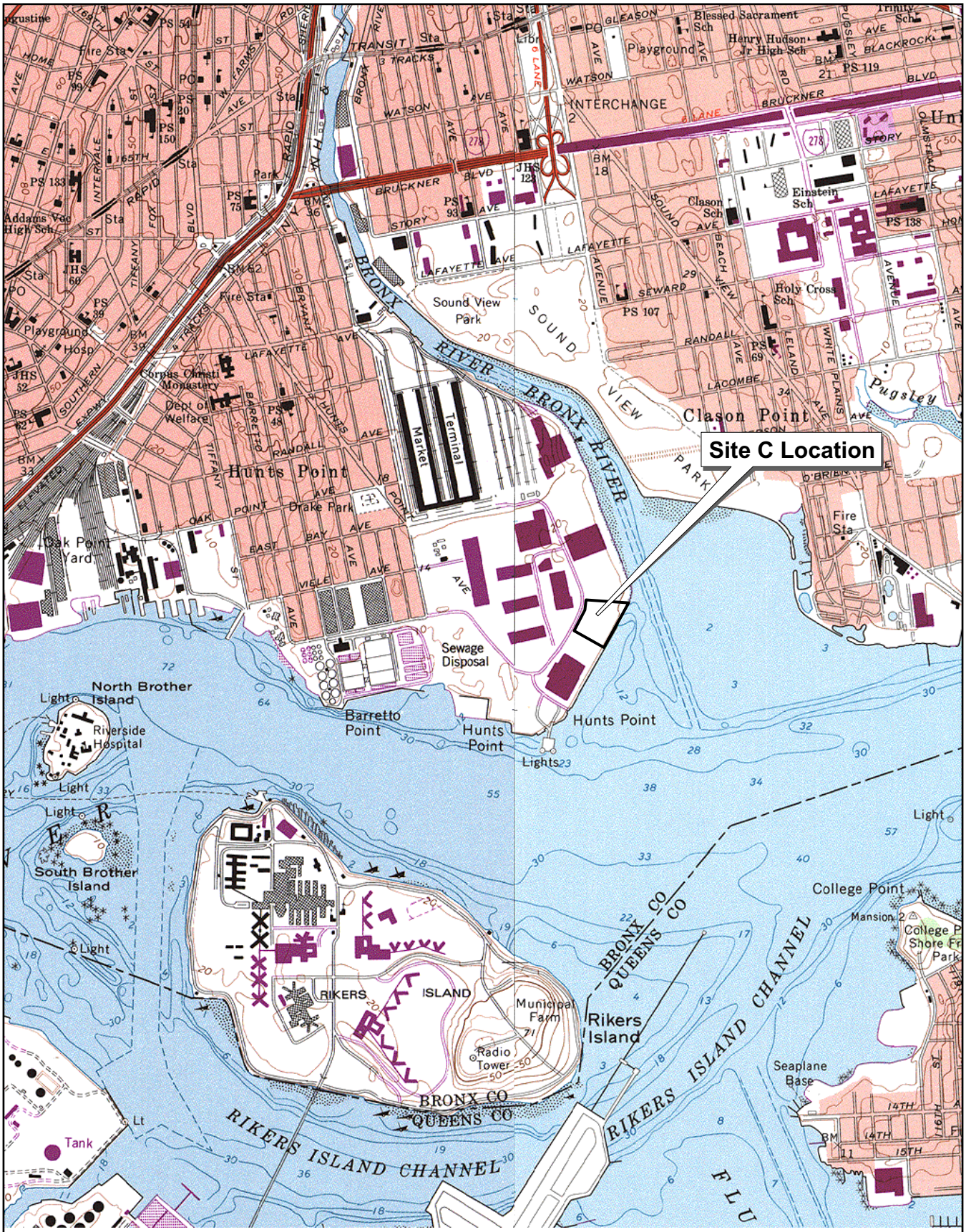
2.0 Nature and Extent of Contamination

Based on data obtained from the investigations conducted in September 1999 and a follow up investigation completed in August 2000, a remedial action work plan entitled, Response Plan for Parcel C, Bronx, NY dated November 2001, was developed by Lawler, Matusky and Skelly Engineers, LLP, now Henningson, Durham and Richardson Architecture & Engineering P.C (HDR). The Site was used as a principal location for raw coal storage and handling and therefore was not found to contain noticeable deposits of waste that is believed to be a result of the manufactured gas plant (MGP) that occupied the entire peninsula between 1926 and the late 1950s. Across the peninsula on other sites three types of waste material of potential concern was encountered during the investigation activities. The following categories were assigned to the material based on visual observation and are as follows: Coal Tar; Purifier Waste, and; a mixture of both Coal Tar and Purifier Waste. Although it is not expected to be encountered at the Site, the potential exists and the procedures for handling and the disposal are outlined in this document. What may also be encountered is material that has been impacted by this waste material also and those procedures are also included in this document.

Coal tar is a product of the destructive distillation of bituminous coal. It is a dark reddish brown to black, oily, viscous liquid that does not readily mix with water. It has a very strong odor, which many people find similar to mothballs or driveway sealant. Coal tars, derived from both coal carbonization and carbureted water gas processes, are complex mixtures of organic chemicals. The following two major classes of chemical compounds found in coal tar are:

- Volatile organic compounds (VOCs) characterized by benzene, toluene, ethylbenzene and xylene, which are identified by their initials as the BTEX compounds, and
- Semi-volatile organic compounds (SVOCs) known as polycyclic aromatic hydrocarbons or PAHs.

Purifier Waste is typically found as a mixture of wood chips with a very strong, unpleasant burnt odor. Once exposed at the ground surface, the waste will often develop an iridescent blue color known as "prussian blue". It contains significant quantities of chemically complexed Cyanide compounds. In addition to containing complexed Cyanide, water which comes into contact with purifier waste is often acidic. If the acidic water discharges to a stream or other surface water body, it may cause harm to fish and wildlife.



0 2000 ft

~SCALE: 2000' = 1"

Map source: USGS 7.5 minute quadrangle series, Central Park, NY-NJ, 1966, photorevised 1988.

\781\003\graphics\DTP\SiteClocation.dsf

HDR | LMS

Henningson, Durham & Richardson Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.

One Blue Hill Plaza
Pearl River, NY 10965

Site C Location

Hunts Point • Site C

Figure 1

There are three major means by which a toxic substance can come into contact with or enter the body. These are called routes of exposure and are as follows:

1. Inhalation (breathing) of gases, vapors, dusts or mists is a common route of exposure. Chemicals can enter and irritate the nose, air passages and lungs. They can become deposited in the airways or can be absorbed through the lungs into the bloodstream. The blood can then carry these substances to the rest of the body.

2. Direct contact (touching) with the skin or eyes is also a route of exposure. Some substances are absorbed through the skin and enter the bloodstream. Broken, cut or cracked skin will allow substances to enter the body more easily.

3. Ingestion (swallowing) of food, drink, or other substances is the third route of exposure. Chemicals that get in or on food, cigarettes, utensils or hands can be swallowed. Substances can be absorbed into the blood and then transported to the rest of the body.

The constituents of potential concern (COPCs) for soil consist primarily of VOCs (BTEX compounds), SVOCs (PAHs), Metals, and complexed Cyanide compounds.

Results of ground water sampling indicate that constituents in the soil/fill material have impacted ground water quality above applicable NYSDEC Technical Operational Guidance Series 1.1.1 (TOGS 1.1.1) standards for ground water, requiring treatment prior to use.

3.0 Contemplated Use

As part of the redevelopment project, the Site has been identified for restricted commercial use as a distribution facility within the HPFDC. A number of commercial enterprises and municipally operated facilities are located in the area including; the Hunts Point Produce Market, the New Fulton Fish Market, the Hunts Point Meat Market, and the NYCDEP Sewage Treatment Plant.

4.0 Purpose and Description of Surface Cover System

The purpose of the surface cover system is to eliminate the potential for human contact with fill material, eliminate the potential for contaminated runoff from the property, and prevent infiltration of surface water through the fill. The cover system will consist of the following types of clean material:

- ***Imported Fill:*** *4 to 5 feet of imported granular fill material (including recognizable uncontaminated concrete and non-hazardous shoreline material generated from the bulkhead demolition work) will be placed in the upland portion of the site to elevate the property above 100-year floodplain.*

- ***Soil:*** *12 inches of vegetated soil cover underlain by a demarcation layer (geotextile fabric) will be placed in outdoor vegetated areas.*

- ***Asphalt:*** *a minimum of 6 inches of compacted gravel and bituminous pavement will be placed in areas that will become access roads or parking lots.*

- ***Concrete:*** *a minimum of 6 to 10 inches of concrete and sub-base material will be placed in areas that will become slab-on-grade structures. For the slab-on-grade structures, an 8-mil polyethylene vapor barrier will be placed beneath the concrete. Beneath the vapor barrier will be a passive venting layer consisting of permeable fill material (sand or pea gravel) and slotted PVC piping to allow any VOC vapors that migrate through the fill material to be collected and vented to the outside atmosphere through vent stacks on the exterior of the building*.

5.0 Management of Soils/Fill and Long-Term Maintenance of Cover System

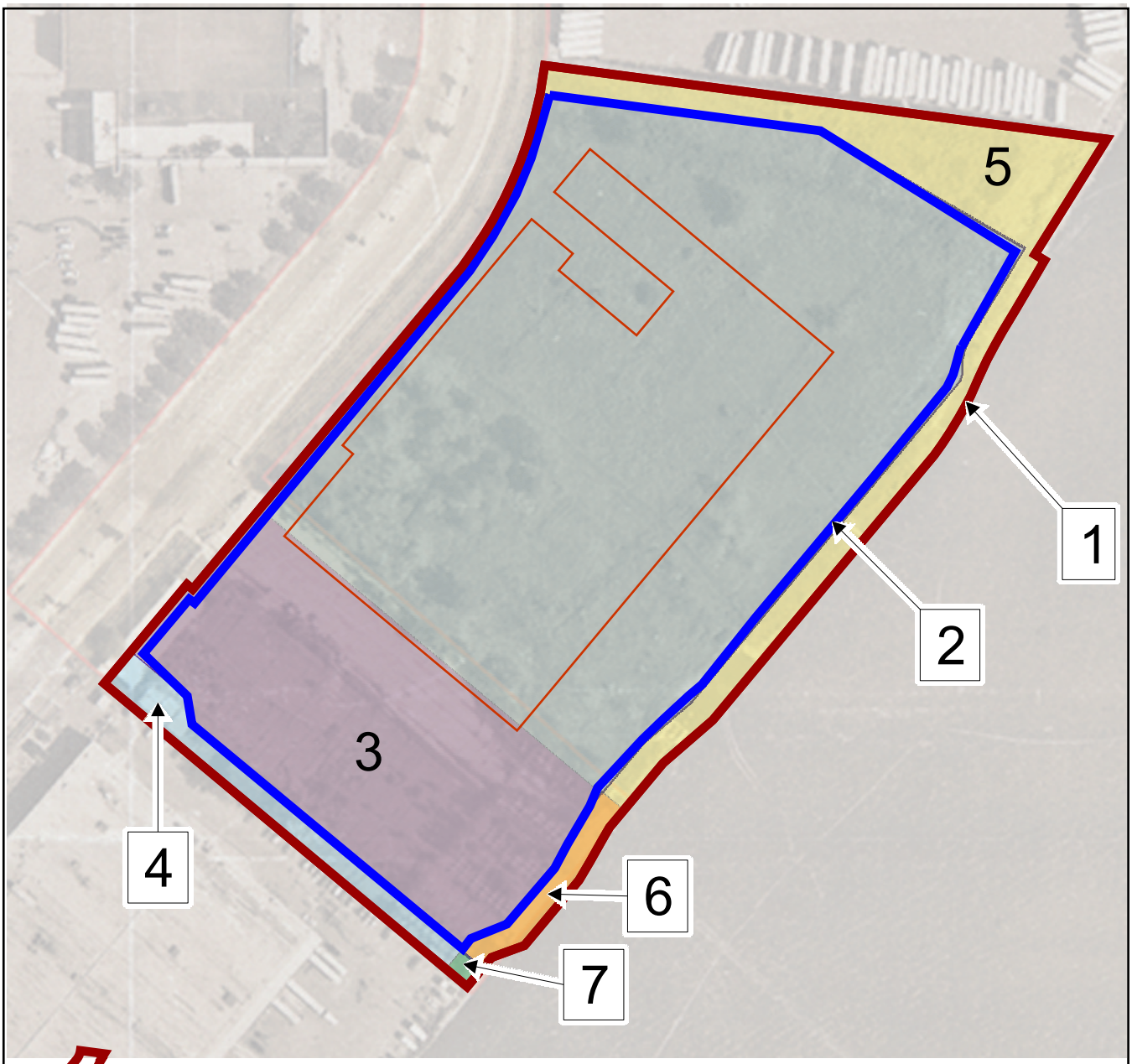
The purpose of this section is to provide environmental guidelines for the management of subsurface soils/fill and the long-term maintenance/replacement of the cover system during and after any future intrusive work which breaches the cover system.

The SMP includes, but is not limited to, the following conditions:

- Any breach of the cover system, including for the purposes of construction or utility work, requires that upon completion of the effort, the cover be replaced as it was originally installed. Backfill material used must be from an acceptable source, free of potential industrial sources of chemical or petroleum contamination (refer to Sections 5.1 through 5.3 for additional excavation/backfill-specific requirements). The repaired area must be covered with a similar layering of material comparable to that which was removed, and the repairs carried out in accordance with applicable City specifications for the surface removed.
- During construction activities, control of surface erosion and run-off of the entire area must be maintained at all times. *A Stormwater Pollution Prevention Plan (SWPPP) has been prepared and approved by NYSDEC for both construction and post construction handling and treatment of stormwater. The SWPPP is attached to the Final Redevelopment Plan.*
- Site soil/fill that is excavated and is intended to be removed from the property must be managed, stockpiled, characterized, and properly disposed of in accordance with NYSDEC regulations.
- Prior to any construction activities, workers are to be notified of the site conditions with clear instructions regarding how the work is to proceed. Invasive work performed at the property will be performed in accordance with all applicable local, state, and federal regulations to protect worker health and safety. A general Health & Safety Plan (HASP) to be reviewed by any contractor involved in subsurface work and used by that contractor as a base for preparing an individual HASP has been prepared and is attached with this SMP. The contractor will have in their possession a HASP that has been reviewed by workers involved in intrusive work where the site cover materials will be disturbed. Any work performed in or near this Site area should not be performed without properly identifying all underground utilities. There is a high pressure gas main located near the southern end of the Site and no work should be performed near this area without contacting NYCEDC and Iroquois gas.
- The Owner (City of New York) shall annually, or such time as NYSDEC may allow, complete and submit to the NYSDEC Certification Report beginning in the year following the completion of construction and approval of the Final Engineering Report by NYSDEC and NYSDOH. The Certification Report shall contain a statement signed by the entity responsible for direct management of the property (tenant) certifying that the institutional controls put in place, pursuant to the, Voluntary Cleanup Agreement for the Site and the Declaration of Covenants and Restrictions imposed upon the fee title to the site and recorded in the Office of the New York City Register, as specified in the VCA, are still in place, have not been altered and are still effective. Additionally, the Certification Report shall specify that the remedy and protective cover have been maintained, and that the conditions at the site are fully protective of public health and the environment.

If the cover system has been breached during the period covered by that Certification Report, the owner of the property shall include a certification that all work was performed in conformance with this SMP in that certification report.

In addition, a deed restriction will be implemented in accordance with the requirements of the New York State Voluntary Cleanup Program (VCP) limiting future use of the property (as identified in the metes and bounds description in the NYSDEC VCA) to a restricted commercial use as a distribution facility. The property that is subject to this deed restriction is shown on Figures 2A and B. A portion of the Site located at the southern end of the parcel is also included under another VCA know as the Iroquois Gas



1 - Project Site (Anheuser Busch and Greenway Park) - 12.1 acres

2 - Anheuser Busch Redevelopment Parcel (AB Parcel) - 10.6 acres

3 - Non-VCP portion of Anheuser Busch Parcel - 2.6 acres

4 - Iroquois Pipeline VCP portion of Anheuser Busch Parcel - .5 acres

5 - Greenway Redevelopment Parcel - 1.5 acres

6 - Non-VCP portion of Greenway - .2 acres

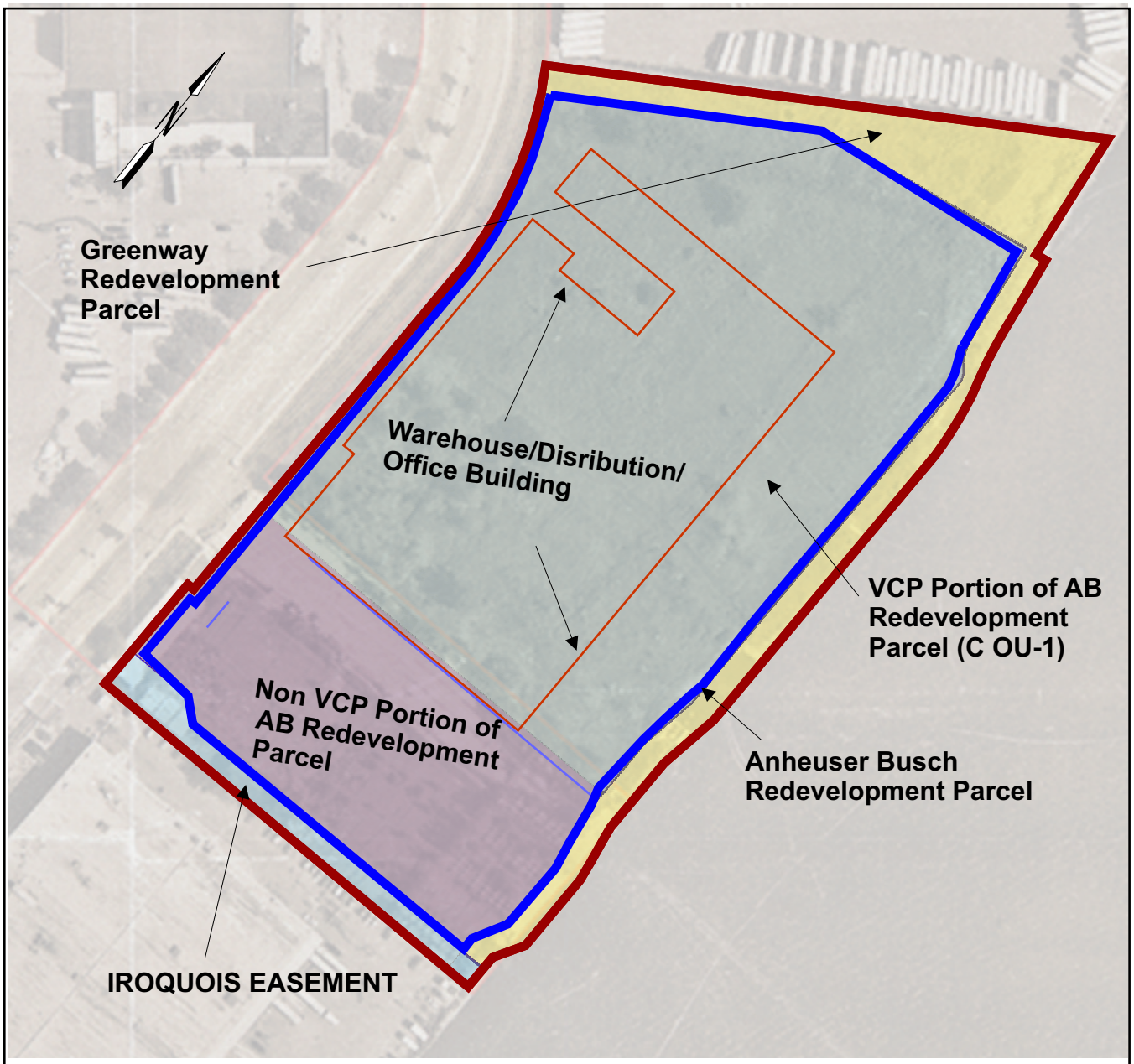
7 - Iroquois Pipeline VCP portion of the Greenway <.1 acre

HDR | LMS
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Site Apportioning and Acreage

Hunts Point • Site C First Operable Unit

Figure 2A



Anheuser Busch Redevelopment Parcel (AB Parcel)

Non-VCP portion of Anheuser Busch Parcel

Iroquois Pipeline Easement

Greenway Redevelopment Parcel

HDR | LMS
Henningson, Durham & Richardson
Architecture and Engineering, P.C.
in association with HDR Engineering, Inc.
One Blue Hill Plaza
Pearl River, NY 10965

Redevelopment Sites

Hunts Point • Site C First Operable Unit

Figure 2B

Pipleline/Perimeter Site. An SMP has been completed for that parcel as well and specific restrictions apply to that area as well. They are similar in nature to those in this document, however if any work is being completed within that area, a copy of the SMP for that Site should be used to direct work related to fill material and certification of the Engineering Controls. The deed restriction will be identified by adjacent parcel lot and block numbers due to the current site not being identified as a specific lot and block number. In the event that in the future the City of New York identifies this Site as a specific tax lot and block number, that designation will be made.

5.1 Excavated and Stockpiled Soil/Fill Disposal

Soil/fill that is excavated as part of development that includes waste material as described in Section 2.0 of this document that cannot be used as fill below the cover system will be further characterized prior to transportation off-site for disposal at a properly permitted facility. All fill will be segregated according to the contractor's chosen disposal facility requirements. Prior to any fill material being removed from the Site, each disposal facility will provide to the contractor the maximum concentrations allowed for compounds and analytes listed in Table 2 as well as the minimum sampling frequency and analytical requirements. The analytical requirements and limits will be in accordance with the facilities most current operating permit for its destination State. The Contractor will review all analytical results in comparison to the allowable facility concentrations and will determine if the material is permissible at the subject facility. No material will be removed to a NYSDEC-registered recycling facility with the exception of road base material (asphalt) or existing above grade structures (concrete). Following disposal of material, the records associated with the disposal will be made available for review should they be requested.

5.2 Sub-grade Material for Reuse

On-Site excavated sub-grade material used to backfill excavations or placed to increase grades or elevation shall meet the following criteria:

1. Excavated on-Site soil/fill which appears to be visually impacted with either coal tar or purifier waste materials as described in Section 2.0 of this SMP shall be segregated from material proposed to be used as backfill, sampled, and analyzed for proper off-Site disposal (as described in Section 5.1 of this SMP).

2. The remaining material can be used as backfill in accordance with NYCRR Solid Waste Management Facilities Part 360 1-15(b)(8), which allows for the re-use of non-hazardous, contaminated soil which has been excavated as part of a construction project, other than a department-approved or undertaken inactive hazardous waste disposal site remediation program, and which is used as backfill for the same excavation or excavations containing similar contaminants at the same site.

5.3 Imported Material for Use as Backfill

Imported material for use of backfill on the Site must adhere to the following conditions. Off-Site soils intended for use as site backfill cannot otherwise be defined as solid waste in accordance with 6 NYCRR Part 360-1.2(a).

1. Registered Facility Source:

   Any off-Site material brought to the site for filling and grading purposes shall be from an acceptable borrow source free of industrial and/or other potential sources of chemical or petroleum contamination. For example, uncontaminated C&D as defined in 6 NYCRR Part 360-16.2 (c) that has been processed by a NYSDEC-registered C&D recycling facility may

be used provided it meets the existing New York State Department of Transportation (NYSDOT) Standard Specification as described below in Section 5.3.2.

This material is not acceptable to be used in the upper (top) foot of fill and must be placed beneath the approved engineered surface cover, unless it is sampled as described in 3a and meets the criteria in 3c or 3d.

2. Recycled Portland Cement Concrete Aggregate (RCA):

   If Recycled Portland Cement Concrete Aggregate (RCA) is used beneath the top foot or approved engineering surface and it comes from other than a New York State Department of Transportation project, documentation showing that the material comes from a NYSDEC permitted or registered facility is required. Off-site material imported for filling and grading purposes shall conform to Section 304 of New York State Department of Transportation Standard Specifications Construction and Materials Volume 1 (2002). Section 304 option B, "single layer of Type I Sub-base Course" provides 3 alternate types of material suitable for backfill material. Material originating as RCA from a registered facility with less than 10% fine-grained sediments by weight passing through a 200 sieve does not require analytical testing.

   a. Alternate A: at least 95% by weight, of (RCA) and free from organic and other deleterious material. This material may contain up to 5% by weight asphalt and/or brick;

   b. Alternate B: a mixture of RCA conforming to Alternate A above mixed with stone, sand, gravel, or blast furnace slag. This material may contain up to 5% by weight asphalt and/or brick; and/or

   c. Alternate C: bituminous material that is reclaimed from bituminous pavement and/or shoulders (Reclaimed Asphalt Pavement, or RAP) on a project constructed by the Department of Transportation and is well-graded from coarse to fine and free from organic or other deleterious material, including tar. This material is at least 95%, by weight, reclaimed bituminous material and has a maximum top size, at time of placement, of 50mm." If Alternate C is used, documentation of its being from a Department of Transportation source must be provided (This is similar to the reference for RCA).

Table 1: NYSDOT Gradation Table 304-1

Sieve Size No.	Sieve Size Designation	Percent Passing by Weight (%)
N/A	100 mm	-
N/A	75 mm	100
N/A	50 mm	90 - 100
N/A	6.3 mm	30 - 65
40	425 µm	5 - 40
200	75 µm	0 - 10

3. Non-Regulated Soil and Sand:

   If the contractor designates a source of soil to be used as fill, it shall be further documented in writing to only contain soil and no man-made materials (such as construction and

demolition (C&D) debris). Sand from an operating gravel pit or similar facility operating under a mining permit must contain less than 7% fine-grained sediments by weight passing through a 200 sieve. Also covered under this section is material from non-commercial locations where there is no information available. These materials as described in this section (Section 5.3.3), shall be subject to the following acceptance criteria:

a. Soils will be subject to the collection of one (1) representative composite sample per source per 1000 cubic yards. The sample(s) should be analyzed for TCL VOCs, SVOCs, pesticides, PCBs, arsenic, barium, beryllium, cadmium, chromium (Hexavalent and trivalent), copper, lead, manganese, total mercury, nickel, selenium, silver, zinc, and total cyanide in accordance with the quality assurance standards set forth in 40 CFR Part 136 and the most current NYSDEC Analytical Services Protocol (ASP). Soil analyses shall be reported as Category A deliverables specified in the most current NYSDEC ASP. The soil will be acceptable for use as backfill for depths below the one foot surface cover if analytical results indicate that the contaminants, if any, are present at concentrations below those described in Table 2: Backfill Analytical Parameters. Table 2 was created through collaboration between the NYSDEC, NYSDOH, NYCEDC and HDR|LMS.

b. If any of the parameters exceed the thresholds set in Table 2, and there is still a desire to use the soil below the top foot, a written request will be made to the NYSDEC which will include a full description of the soil, its source, volume and analytical data. The NYSDEC will review the data and provide a written response within a reasonable time of the request.

c. If the results of the analyses indicate the soil meets or is below the concentrations listed in Table 2, then it will be acceptable for use within the upper foot if open soil is desired. A Geotextile fabric of permeable membrane shall be placed on the surface of the material below the top foot to prevent mixing from frost heave or other settling related actions.

d. If any of the parameters exceed Table 2, and there is still a desire to use the soil in the upper foot, a written request will be made to the NYSDEC which will include a full description of the material, its source, volume and analytical data. The NYSDEC will review the data and provide a written response within a reasonable time of the request.

4. Non-Regulated Gravel and Rock:

   If the contractor designates a source of soil to be used as fill, it shall be further documented in writing to only contain soil and no man made materials (such as construction and demolition (C&D) debris). Crushed gravel or rock from an operating gravel pit or similar facility operating under a mining permit does not require analytical testing. Sand from an operating gravel pit or similar facility operating under a mining permit is not included in this section (refer to Section 5.3.3).