

THE Project

CULTURAL RESOURCES MANAGEMENT PLAN

July 10, 2009

Revision 2

For:



Submitted by:



(A joint venture of PB Americas, Inc.,
STV, Inc., and AECOM USA, Inc.)

REVISION HISTORY

Revision	Date	Description
0	May 8, 2009	Release to NJ TRANSIT
1	June 26, 2009	Revised as per NJ TRANSIT Comments
2	July 10, 2009	Revised as per NJ TRANSIT Comments. Release to FTA, NJSHPO, NYSHPO and NYCLPC

THE PROJECT
CULTURAL RESOURCES MANAGEMENT PLAN

TABLE OF CONTENTS

1	INTRODUCTION	1-1
1.1	Project Introduction	1-1
1.2	Objective of the Cultural Resources Management Plan.....	1-3
1.3	Resources within the Area of Potential Effect for THE Project.....	1-3
1.4	Section 106 Consulting Parties	1-22
1.5	Construction Contract Packages.....	1-22
1.6	Key Personnel	1-26
2	CONSTRUCTION PROTECTION PLAN FOR ARCHAEOLOGICAL RESOURCES.....	2-1
2.1	Introduction.....	2-1
2.2	Specific Requirements for the Protection of Archaeological Resources	2-1
3	CONSTRUCTION PROTECTION PLAN FOR BUILT HISTORIC PROPERTIES	3-1
3.1	Introduction.....	3-1
3.2	Protection Methodology for Built Historic Properties	3-1
3.3	Pre-Construction Surveys	3-3
3.4	Video and Photographic Documentation.....	3-3
3.5	Monitoring Prior to and During Construction	3-4
3.6	Review and Alert Procedures.....	3-6
3.7	Remediation and Repair of Damage to Built Historic Properties.....	3-9
3.8	Reporting.....	3-9
3.9	Wrap-Up and Close Out Documentation.....	3-10
4	ARCHAEOLOGICAL MONITORING AND FIELD TESTING.....	4-1
4.1	Introduction.....	4-1
4.2	Archaeological Monitoring	4-2
4.3	Archaeological Field Testing Protocol	4-6
4.4	Laboratory Processing	4-7
4.5	Reporting.....	4-8
4.6	Mitigation	4-8

5	UNANTICIPATED DISCOVERIES PLAN	5-1
5.1	Objective of the Unanticipated Discoveries Plan.....	5-1
5.2	Personnel	5-1
5.3	Archaeological Resource Identification/Training	5-1
5.4	Archaeological Feature Discoveries	5-2
5.5	Human Remains Discoveries	5-3
5.6	Examples of Potentially Significant Archaeological Features That May Be Encountered During Construction Activities	5-5
6	CONSTRUCTION AND ARCHAEOLOGICAL PHASING PLAN.....	6-1
6.1	Introduction.....	6-1
6.2	Generalized Phasing Plan Timeline	6-1
7	DATA RECOVERY PLAN.....	7-1
7.1	Introduction.....	7-1
7.2	Steps in the Data Recovery Planning Process.....	7-1
7.3	Developing the Data Recovery Plan.....	7-2
7.4	Guidelines for Plan Preparation and Execution of Data Recovery Investigations	7-2
7.5	Review of the Plan and Reporting.....	7-3
8	ANALYSIS AND CURATION OF MATERIALS AND RECORDS PLAN.....	8-1
8.1	Introduction.....	8-1
8.2	Overview of the Analysis and Curation of Materials and Records Plan	8-1
9	PUBLIC INTERPRETATION PLAN	9-1
9.1	Introduction.....	9-1
9.2	Overview of the Public Interpretation Plan	9-1
10	DESIGN REVIEW.....	10-1
10.1	Introduction.....	10-1
10.2	Objective of Design Review.....	10-1

APPENDIX A:

Section 106 Programmatic Agreement

LIST OF FIGURES

Figure 1-1. ARC Project Alignment.....	1-2
Figure 1-2. APE and Historic Properties in the Project Area – New Jersey.....	1-5
Figure 1-3. APE and Historic Properties in the Project Area – New York.....	1-6
Figure 1-4. APE and Areas of Archaeological Sensitivity in the Project Area – New Jersey ...	1-18
Figure 1-5. APE and Areas of Archaeological Sensitivity in the Project Area – New York	1-19
Figure 1-6. Construction Contract Plan – New Jersey.....	1-24
Figure 1-7. Construction Contract Plan - New York.....	1-25

LIST OF TABLES

Table 1-1. Potential Effects on Historic Properties in the Project APE – New Jersey.....	1-7
Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York	1-10
Table 1-3. Areas of Potential Archaeological Sensitivity and Potential Effects within the APE – New Jersey and New York	1-20
Table 3-1. Monitoring Frequency and Duration	3-5
Table 3-2. Monitoring of Blasting Activities	3-5
Table 3-3. Contingency Monitoring Frequency and Duration	3-6
Table 3-4. Required Action for Threshold Level or Limiting Level	3-7
Table 3-5. Procedures to Be Followed in the Event of a Threshold Level or Limiting Level	3-8
Table 4-1. Approach to Archaeologically Sensitive Areas	4-2

ABBREVIATIONS

Abbreviations used throughout this Cultural Resources Management Plan (CRMP) are listed below:

Abbreviation	Term
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
ARC	Access to the Region's Core Project
CM	Construction Manager
CPP	Construction Protection Plan
CRM	Cultural Resource Manager
FEIS	Final Environmental Impact Statement
FTA	Federal Transit Administration
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NJSHPO	New Jersey State Historic Preservation Office
NYCLPC	New York Landmarks Preservation Commission
NYSHPO	New York State Historic Preservation Office
NR	National Register of Historic Places
PPV	Peak Particle Velocity
TBM	Tunnel Boring Machine

DEFINITIONS

The Definitions of a number of terms used throughout this Cultural Resources Management Plan are provided below.

Advisory Council on Historic Preservation: An independent federal agency established by the National Historic Preservation Act (NHPA) of 1966 to advise the President and Congress on historic preservation matters. The agency reviews the policies and programs of federal agencies to improve their consistency with NHPA goals and administers and participates in the preservation review process established by Section 106 of the NHPA.

Archaeological Feature: An archaeological feature implies the presence of human activity or occupation. Archaeological features may consist of concentrations of artifacts. However, an archaeological feature may not always be tangible in the same way as an artifact, as it may indicate the prior presence of a monument, building, structure, or other use, including truncated shafts (e.g., wells, cisterns, privies), foundation and cellar remains, and remains from fire hearths, storage pits, wharves, cribbing, and fill-retaining devices. They may also consist of discrete deposits of non-human skeletal remains.

Archaeological Property: An archaeological resource that meets Historic Properties criteria according to the National Register (NR) of Historic Places. Resources can be significant under four criteria: (A) contributes to the broad patterns of history, (B) associated with a significant individual, (C) example of architecture, engineering, design, or construction, or (D) information potential.

Archaeological Resource: An archaeological resource may be composed of archaeological features and/or skeletal and human remains.

Area of Potential Effect: The geographic area within which a project may have a direct or indirect effect on historic or archaeological resources, if any are present.

Artifact: An object intentionally made or produced for a particular purpose.

Built Historic Property: Above ground building, structure, object, or district determined to be significant at a local, state, or national level.

Cleared Site: A cleared site is a location(s) within the APE where the Cultural Resource Management Team would not be on-site, but on-call, during construction. A site that is determined to be "cleared" is a location where one of the following conditions have been met:

- The site is a location where the project would not affect archaeological resources, e.g., construction through bedrock;
- The area was determined through documentary research conducted for the Phase 1A to not possess archaeological sensitivity and SHPO has concurred with the findings (e.g., the site is a location that contains previously disturbed soils, documentary research and or subsurface conditions indicate a lack of archaeological sensitivity, and/or the site is expected to yield redundant information);
- The site has been previously evaluated through archaeological investigations and was determined to not meet eligibility criteria for listing on the National Register; and
- The site was previously determined eligible for listing on the National Register and has undergone an SHPO-approved data recovery program to mitigate project impacts.

Determination of Eligibility: Decision of the State Historic Preservation Officer (SHPO) on whether properties or resources are eligible for the State and/or National Register of Historic Places.

Direct Effects: Physical destruction, demolition, damage, or alteration of a historic property.

Fragile Building – Buildings that due to their form of construction or current condition state are particularly susceptible to damage from ground borne or air-overpressure vibration or settlement

Historic Period Resources: Remains since the European colonization of the New York/New Jersey area.

Historic Properties: Historic properties consist of, but are not limited to: prehistoric and historic archaeological sites; built properties that comprise New York City Landmarks, Historic Districts, and properties determined eligible for landmark designation, National Historic Landmarks, and properties listed on the State and National Register of Historic Places or determined eligible for listing on the Registers; and certain historic landscapes.

Indirect Effects: Introduction of visual, audible, or atmospheric elements to a historic property's setting, or changes in accessibility to the property due to construction and or operation of the project.

Mitigation: Measures designed to lessen or eliminate the adverse impacts resulting from a proposed project or action.

National Historic Preservation Act of 1966: Statute enacted by Congress establishing a nationwide policy to support and encourage the preservation of prehistoric and historic resources and to direct federal agencies to assume responsibility for considering such resources in their activities. Section 106 does not mandate preservation of such resources, but requires federal agencies to consider the impact of actions on historic properties listed or eligible for listing on the NR.

National Register of Historic Places: The federal list of buildings and sites determined to have historic significance, established by the NHPA.

Native American: American Indians who lived throughout the region prior to the arrival of the Europeans in New York/New Jersey and continuing into the 18th century.

Pre-construction Condition Inspection Zone: An areas measuring approximately 200 feet from construction activities in which adverse effect could occur.

Prehistoric Period Resources: Remains from Native American people and their activities.

State Historic Preservation Office: The state administrative agency responsible for compliance with historic preservation rules, laws, and regulations.

Unanticipated Discovery: A discovery that would require project construction to stop so that an archaeologist may evaluate the nature of the find. Such archaeological evaluation may require a very short period of time if the discovery is easily determined by the professional archaeologist to be of modern origin or to be not significant, or a longer period of time, for the archaeologist to determine, as appropriate, the nature and extent of the discovery. Unanticipated discoveries that could be encountered during construction may include artifact (historic or prehistoric) deposits, cultural features (walls, foundations, wells, privies), or human remains.

1 INTRODUCTION

1.1 Project Introduction

NJ TRANSIT in cooperation with the Port Authority of New York and New Jersey (PANYNJ), is constructing the Access to the Region's Core (ARC) Trans-Hudson Express Project (THE Project).

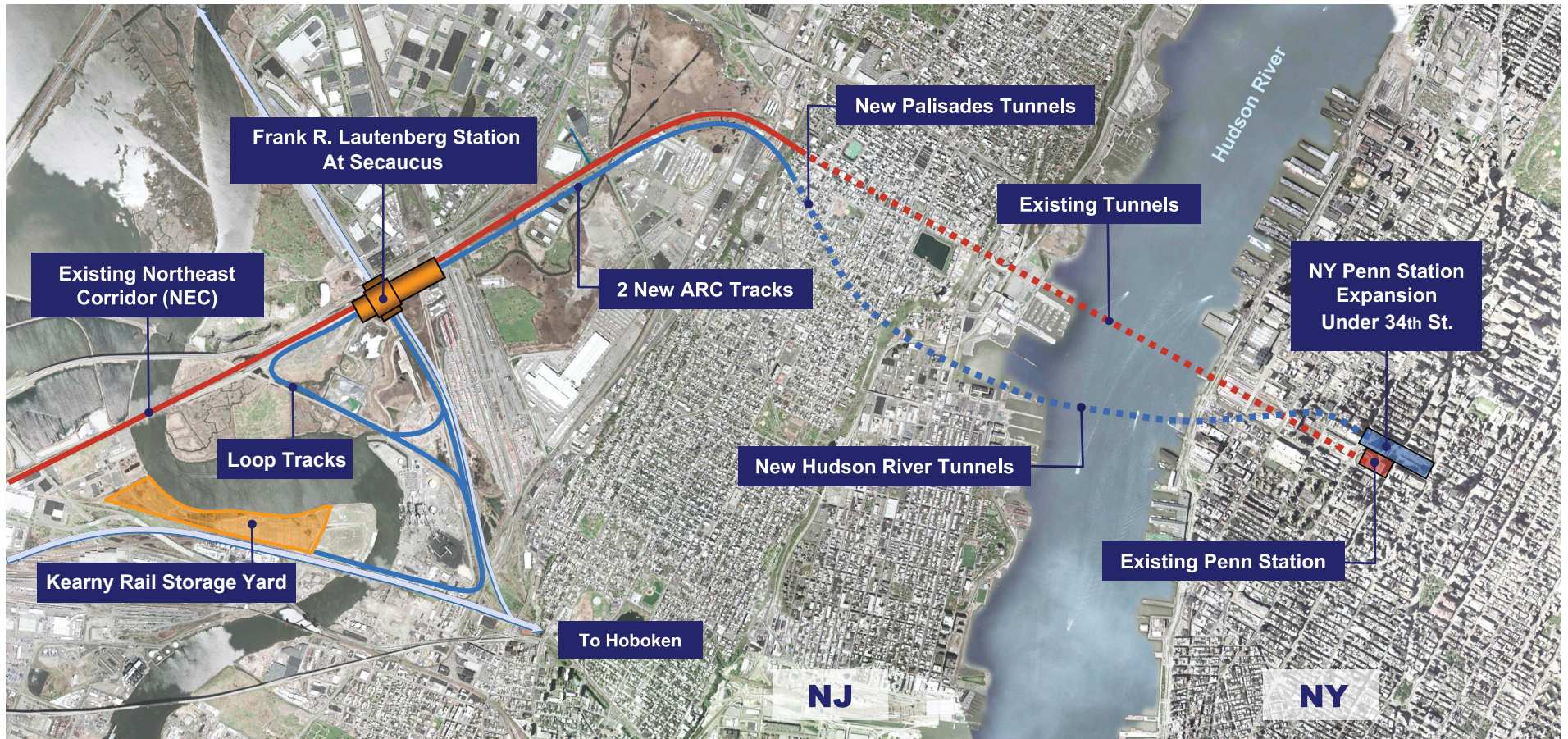
The purpose of THE Project is to increase trans-Hudson commuter rail capacity to: accommodate projected ridership growth from rail lines west of the Hudson River; enhance passenger convenience via a one-seat ride; and improve system safety and reliability between Frank R. Lautenberg Station in Secaucus, New Jersey and midtown Manhattan. Construction of the project is scheduled to begin in 2009; initial revenue service would commence in 2017 with the full operational plan implemented by 2030.

The 7.6 mile project area is defined as the area from the Koppers Coke site in Kearny, New Jersey, through Frank R. Lautenberg Station in Secaucus, New Jersey to West 34th Street and Sixth Avenue in Manhattan (**Figure 1-1**). THE Project area parallels the existing Northeast Corridor (NEC) from just west of Frank R. Lautenberg Station and continues under North Bergen, Jersey City, Union City, Weehawken, and Hoboken in Hudson County, New Jersey and under the Hudson River to Manhattan. THE Project area encompasses portions of the Main Line and former Boonton Line as they extend south of Frank R. Lautenberg Station, merge to a connection with the Morris and Essex Lines in Jersey City, and continue west across the Hackensack River to the Koppers Coke site.

The key infrastructure elements of THE Project include:

1. A new direct connection at Secaucus between the Main, Bergen County and Pascack Valley lines and the NEC in New Jersey;
2. New track capacity along the NEC between Frank R. Lautenberg Station and the Palisades in New Jersey;
3. Two new single-track tunnels under the Palisades in New Jersey and the Hudson River, with continuation of these two tunnels under the west side of Manhattan;
4. A connection to new station capacity (New York Penn Station Expansion [NYPSE]), under West 34th Street between Eighth and Sixth Avenues, adjacent to Penn Station New York (PSNY);
5. A mid-day storage yard on the Koppers Coke site in Kearny, New Jersey;
6. Five NYPSE station entrances, three Americans with Disabilities Act (ADA) compliant elevator entrances, and one ADA compliant elevator entrance for employee use only; and
7. One fan plant/construction access shaft in New Jersey and four fan plants / construction access shafts in Manhattan.

These infrastructure improvements meet THE project's service goal to double peak hour service to midtown Manhattan. New dual-power locomotives and added tunnel capacity into midtown Manhattan will create the opportunity to provide one-seat-ride service into Midtown on five existing NJ TRANSIT rail lines that currently operate only diesel service to Newark, Secaucus or Hoboken, New Jersey.



1.2 Objective of the Cultural Resources Management Plan

In January 2009, the Federal Transit Administration (FTA) issued a Record of Decision (ROD) on the ARC Final Environmental Impact Statement (FEIS), dated October 2008. The preparation of this Cultural Resources Management Plan (CRMP) was required under the terms of the Section 106 Programmatic Agreement (PA) executed in October 2008 among the FTA, the Advisory Council on Historic Preservation (ACHP), NJ TRANSIT, the New Jersey State Historic Preservation Office (NJSHPO) and the New York State Historic Preservation Office (NYSHPO). The Section 106 PA is contained within **Appendix A**.

This CRMP provides a general framework for the necessary engineering and scientific methods, practices, procedures and resources essential to be employed throughout design and construction of THE Project to assure conformance with federal and state guidelines that provide protection for built historic properties and archaeological resources. These federal and state guidelines include: Section 106 of the National Historic Preservation Act (NHPA) of 1966, (as amended), which is implemented by federal regulations appearing at *36 Code of Federal Regulations (CFR) Part 800*; the *New Jersey Register of Historic Places Act* and the *New York State Historic Preservation Act of 1980*, as set forth in *Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law*.

As this CRMP is a general framework document, resource specific requirements of the PA will be advanced and coordinated with the signatories of the PA as design progress and will be included in contract specification and documents.

1.3 Resources within the Area of Potential Effect for THE Project

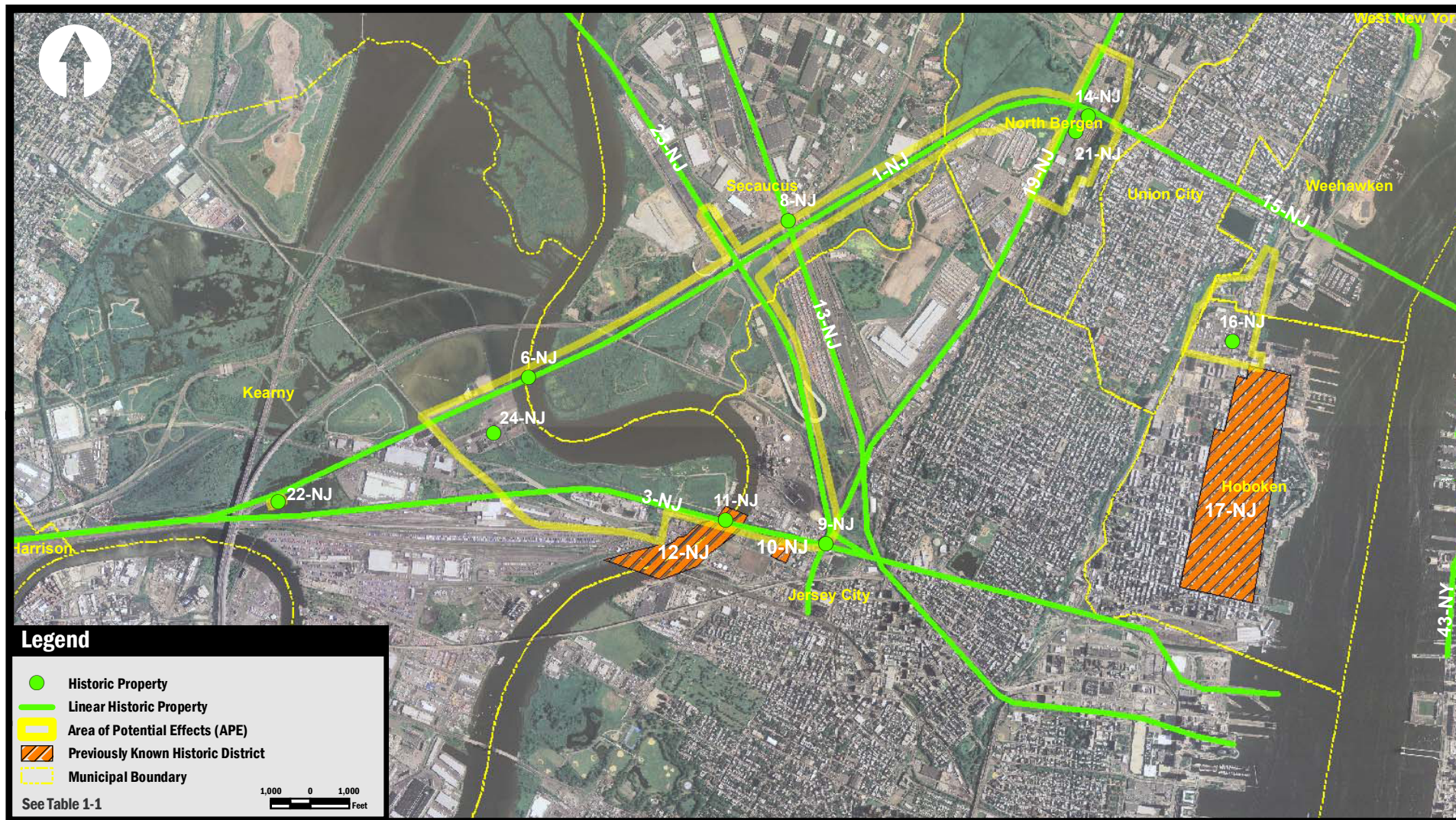
Specific historic properties covered by this CRMP were identified through investigations completed for the ARC FEIS. The findings of these investigations are included a *Historic Architectural Resources Background Study and Effects Assessment (HARBS) (Transit Link Consultants, January 2008 and May 2008 Addendum)*, as well as the *Phase IA Archaeological Report (Transit Link Consultants, January 2008 and May 2008, Addendum)*. These documents present a thorough analysis of the significant Historic Properties located within the project's Area of Potential Effects (APE). The APE for THE Project, defined in consultation with the New Jersey State Historic Preservation Office (NJSHPO) and the New York State Historic Preservation Office (NYSHPO), is described below:

1. In the New Jersey portion of the project area, the APE consists of three discontinuous sections. The western section is located in Kearny, New Jersey in the vicinity of Substation 4 (Amtrak Substation 41). The central section extends approximately 150 to 450 feet from the existing Northeast Corridor (NEC) and proposed tracks in Kearny, Secaucus and North Bergen. It also includes the area of proposed track connections at Frank R. Lautenberg Station and the proposed rail storage and maintenance facility in Kearny. In North Bergen, the APE includes the proposed construction access shaft location along Tonnelles Avenue. The eastern section of the APE, in Hoboken, is located between the base of the Palisades and the proposed fan plant location, construction staging area and access shaft.
2. In the Hudson River portion of the project area, the APE for the Build Alternative extends approximately 200 feet from the proposed tunnels.

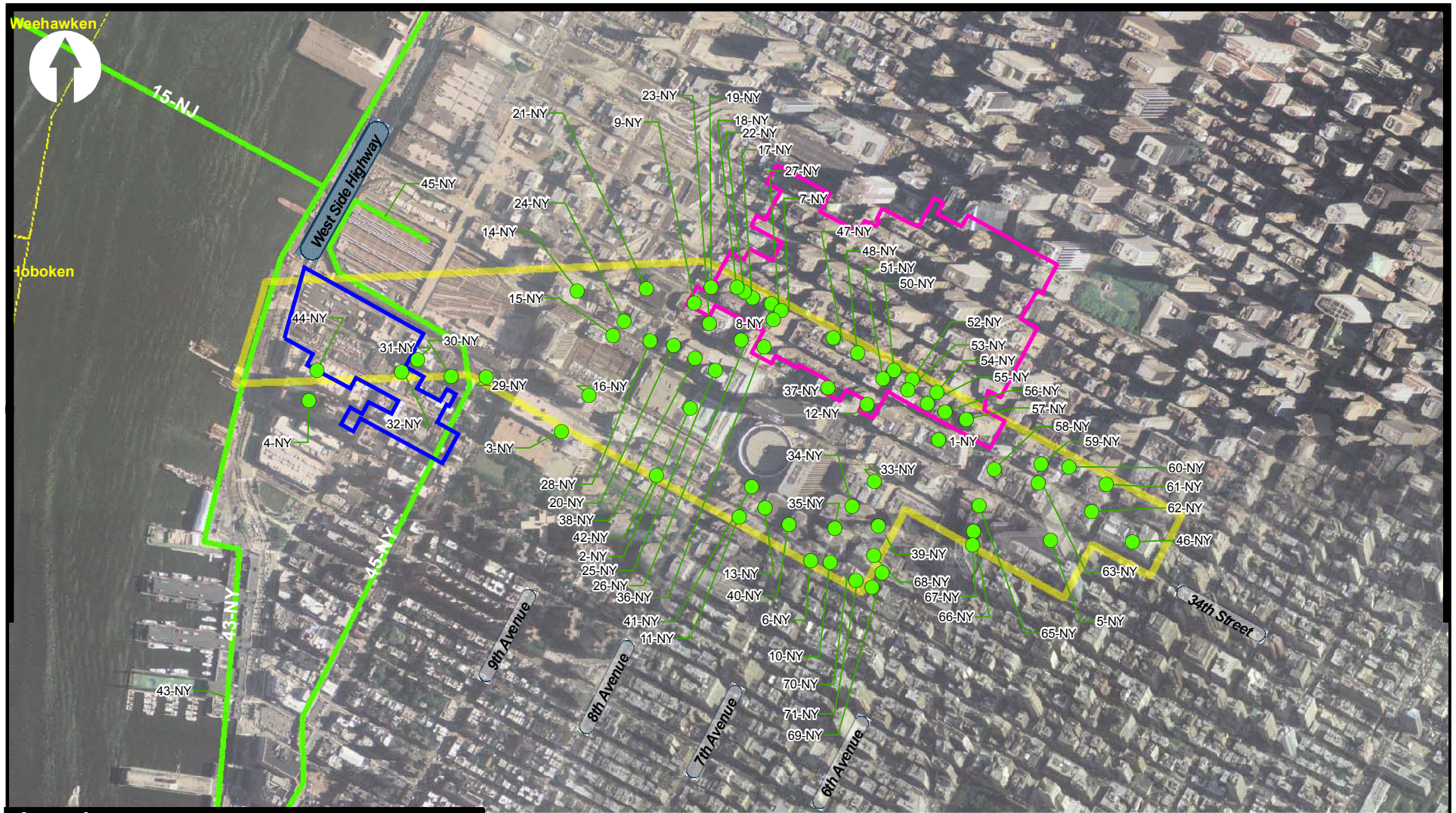
3. In the New York portion of the project area, between the Hudson River shoreline and Fifth Avenue, the APE for the Build Alternative extends between approximately 200 to 1,000 feet from the proposed tracks. The APE includes mainline railroad components, tunnels and proposed station entrances, fan plants/construction access shafts, and other ancillary facilities.

Historic properties located within the APE for New Jersey and New York portion of the project area are shown on **Figures 1-2 and 1-3**, respectively. Individual historic properties and their locations are identified in **Tables 1-1 and 1-2** for New Jersey and New York, respectively, along with the twenty (20) Built Historic Properties that could potentially be impacted by THE Project as identified during the preparation of the EIS.

Areas of archeological sensitivity within the APE are identified on **Figures 1-4 and 1-5** for New Jersey and New York portion of the project area, respectively, as well as identified in **Table 1-3**.



Source: Access to the Region's Core, FEIS 2008



Legend

- Historic Property
- Linear Historic Property
- West Chelsea Historic District
- Garment Center Historic District
- Area of Potential Effects (APE)
- Municipal Boundary

500 0 500 Feet

See Table 1-2

Source: Access to the Region's Core, FEIS 2008

Table 1-1. Potential Effects on Historic Properties in the Project APE – New Jersey

Id No.* (See Figure 1-2)	Property Name	Location	Municipality	County	Potential Effects as Identified in the ARC FEIS
1-NJ	Pennsylvania Railroad New York to Philadelphia Historic District (NEC)	AMTRAK Northeast Corridor, Pennsylvania to New York	Multiple	Multiple	<u>Temporary Direct Effects</u> : direct disturbance during track and infrastructure construction <u>Permanent Direct Effect</u> : track improvements; new retaining walls, embankments, and viaducts; reconstruction of existing drainage pipe and headwall outlet at Upper Penhorn Creek Bridge
3-NJ	Old Main DL&W Railroad Historic District	Morris and Essex Railroad ROW from Hudson, Hoboken City to Warren, Washington Twp., and then along Warren Railroad to the Delaware River	Multiple	Multiple	<u>Temporary Direct Effects</u> : direct disturbance during track and infrastructure construction and temporary support of excavation (SOE) for James Avenue Bridge <u>Permanent Direct Adverse Effect</u> : Koppers Road Bridge demolition and replacement <u>Permanent Direct Effects</u> : demolition of portions of wing walls of existing abutments of James Avenue Bridge track improvements; widened embankments and new retaining walls
6-NJ	Portal Bridge	AMTRAK Northeast Corridor Line, Milepost 6.1 over the Hackensack River	Kearny, Secaucus	Hudson	No effect
8-NJ	Erie Lackawanna Railroad Bridge (HX Drawbridge)	NJ TRANSIT Bergen County Line, Milepost 5.48 over Passaic River	Secaucus	Hudson	No effect
9-NJ	West End Interlocking Tower	NJ TRANSIT Morristown Line, East of West Side Avenue, Milepost 2.10	Jersey City	Hudson	No effect

Table 1-1. Potential Effects on Historic Properties in the ARC APE – New Jersey (continued)

Id No.* (Figure 1-2)	Property Name	Location	Municipality	County	Potential Effects as Identified in the ARC FEIS
10-NJ	PSE&G Marion Office Historic District	444 and 460-468 St. Paul's Avenue	Jersey City	Hudson	No effect
11-NJ	Lower Hack Drawbridge	NJ TRANSIT Morristown Line, Milepost 2.52-2.64 over Hackensack River	Jersey City, Kearny	Hudson	No effect
12-NJ	Hackensack River Lift Bridges Historic District	Hackensack River	Jersey City, Kearny	Hudson	No effect
13-NJ	Erie Railroad Marion [Junction] Mainline Historic District, Bergen County Line	Erie Railroad ROW westward from Hudson, Jersey City at Coles Street to an undetermined location	Multiple	Multiple	No effect
14-NJ	Substation 3 (Amtrak Substation 42)	2308 Tonnelles Avenue	North Bergen	Hudson	<u>Permanent Direct Effect:</u> introduction of electrical equipment within interior of substation building <u>Temporary Indirect Effects:</u> demolition of northern portion of 2001 Tonnelles Avenue and construction of new alignment to the south; noise, vibration and dust
15-NJ	North (Hudson) River Tunnel	AMTRAK Northeast Corridor Line, Milepost 3.0, Bergen Portal to Tenth Avenue Portal	Multiple	Multiple	No effect
16-NJ	Former Elevator Supply & Repair Company	Willow and 15th Streets	Hoboken	Hudson	No effect
17-NJ	Central Hoboken Historic District	Roughly bounded by Hudson Place, 1st Street, Willow and Clinton Streets, and 14th Street	Hoboken	Hudson	No effect

Table 1-1. Potential Effects on Historic Properties in the ARC APE – New Jersey (continued)

Id No. (Figure 1-2)	Property Name	Location	Municipality	County	Potential Effects as Identified in the ARC FEIS
19-NJ	NYS&W Railroad Historic District	Marion Junction (Jersey City) to Hanford (Sussex County) and Delaware Water Gap (Warren County)	Multiple	Multiple	<u>Permanent Direct Effect:</u> introduction of piers within the right-of-way <u>Temporary Direct Effect:</u> closure of tracks during construction
21-NJ	Federal Carton Corporation/G.B Baker Supply/Grand-City Container Corporation Building	2001 Tonnelles Avenue	North Bergen	Hudson	<u>Temporary Indirect Effects:</u> increases in noise, vibration, and dust <u>Permanent Direct Effect:</u> demolition of the northernmost segment of the building; reconstruction of north wall and underpinning of remaining portion of building that conveys architectural detailing or form associated with International and Art Moderne Styles <u>Temporary Indirect Effects:</u> vibration effects to remaining portion of building
22-NJ	Substation 4 (AMTRAK Substation 41)	Approximately 0.75 mile south of NEC bridge spanning the Hackensack river	Kearny	Hudson	<u>Permanent Direct Effect:</u> introduction of electrical equipment within transformer yard <u>Temporary Indirect Effects:</u> vibration effects to transformer yard during construction
23-NJ	Delaware, Lackawanna & Western's Boonton Line (Main Line)	Hoboken Terminal, Hudson County to Paterson Junction, Passaic County	Multiple	Multiple	<u>Temporary Direct Effects:</u> direct disturbance and closure of track and infrastructure during construction <u>Permanent Direct Effect:</u> track improvements; new retaining walls, embankments, and bridges
24-NJ	Edison Battery Company Property	West side of Hackensack River, south of NEC	Kearny	Kearny	No effect

Source: ARC FEIS, 2008

* ID numbers are not consecutive as certain properties identified during preparation of the ARC Draft Environmental Impact Statement (DEIS) were considered not eligible for inclusion in the National Register by NJSHPO.

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York

Id No.* (Figure 1-3)	Property Name	Location	Potential Effects as Identified in the ARC FEIS
1-NY	R.H. Macy & Company Store	151 West 34th St.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location adjacent to Broadway Northwest station entrance and near 33rd Street Fan Plant (137-139 West 33rd Street) construction access shaft <u>Temporary Indirect Effects</u> : access restrictions, noise/vibration, dust, traffic and visual
2-NY	U.S. General Post Office	Eighth Ave. between West 31st and 33rd Sts.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location near Eighth Avenue Southeast Station Entrance <u>Temporary Indirect Effects</u> : noise/vibration, dust, traffic and visual
3-NY	Morgan General Mail Facility	341 Ninth Ave.	No effect
4-NY	Starrett-Lehigh Building	Between Eleventh and Twelfth Aves. And West 26th and 27th Sts.	No effect
5-NY	Empire State Building	350 Fifth Ave.	No effect
6-NY	345-353 Seventh Avenue	345-353 Seventh Ave.	No effect
7-NY**	509-519 Eighth Avenue	509-519 Eighth Ave.	No effect
8-NY**	Hoover Building	501-507 Eighth Ave.	No effect
9-NY**	Harding Building	440-448 Ninth Ave.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location near Employee Only/ Emergency Personnel Access entrance at 323 West 34th Street <u>Temporary Indirect Effects</u> : dust and traffic (Employee Only/Emergency Personnel Access entrance at 323 West 34th Street)
10-NY	144-154 West 30th Street	144-154 West 30th St.	No effect
11-NY	Fur Craft Building	242-246 West 30th St.	No effect

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York (continued)

Id No.* (Figure 1-3)	Property Name	Location	Potential Effects as Identified in the ARC FEIS
12-NY**	Nelson Tower	446-456 Seventh Ave.	<p><u>Permanent Direct Effect</u>: construction of Seventh Avenue Northwest Station Entrance would permanently displace the first floor and basement interiors of Conway's along 34th Street and Seventh Avenue</p> <p>Permanent Indirect Effect: location near Seventh Avenue Northwest station entrance (442 Seventh Avenue) and 35th Street Fan Plant construction access shaft (218-222 West 35th Street)</p> <p><u>Temporary Direct Effect</u>: portion of the 34th Street façade of Gaynes's and Starbucks (both within the Nelson Tower) would be deconstructed, stored, and rebuilt using the original materials and design after construction of the station entrance is complete. No permanent impact to Nelson Tower's façade.</p> <p>Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (Seventh Avenue Northwest Station Entrance)</p>
13-NY	Fairmont Building	239-241 West 30th St.	No effect
14-NY	Master Printers Building	406-416 Tenth Ave.	No effect
15-NY	424 West 33rd Street	424 West 33rd St.	<p><u>Temporary Indirect Effects</u>: access restrictions, noise/vibration, dust, traffic and visual (Dyer Avenue Fan Plant, access shafts, and staging area)</p> <p><u>Permanent Indirect Effect (Contextual – Visual)</u>: location near Dyer Avenue Fan Plant (431 West 33rd Street)</p>
16-NY	406-426 West 31st Street	406-426 West 31st St.	No effect
17-NY**	Former Barbour Dormitory	300 West 36th St.	No effect
18-NY**	346 West 36th Street	346 West 36th St.	No effect
19-NY	367 West 35th Street	367 West 35th St.	No effect

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York (continued)

Id No.* (Figure 1-3)	Property Name	Location	Potential Effects as Identified in the ARC FEIS
20-NY	William F. Sloan Memorial YMCA	360 West 34th St.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location near Employee Only / Emergency Personnel Access entrance at 323 West 34th Street <u>Temporary Indirect Effects</u> : dust, traffic and visual (Employee Only/Emergency Personnel Access entrance at 323 West 34th Street)
21-NY	Webster Apartments	419 West 34th St.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location near fan plant (views to Dyer Avenue fan plant construction access shaft) <u>Temporary Indirect Effects</u> : dust, traffic and visual (Dyer Avenue fan plant, access shaft and staging area)
22-NY**	Christ Church Memorial	334-344 West 36th St.	No effect
23-NY	West Side Jewish Center	347 West 34th St.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location near Employee Only / Emergency Personnel Access entrance at 323 West 34th Street <u>Temporary Indirect Effects</u> : dust and traffic (Employee Only / Emergency Personnel Access entrance at 323 West 34th Street)
24-NY	St. Michael's Roman Catholic Church Complex	414-424 West 34th St.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location near Dyer Avenue fan plant construction access shaft (431 West 34th Street) <u>Temporary Indirect Effects</u> : access restrictions, noise/vibration, dust, traffic and visual (Dyer Avenue Fan plant, access shaft, and staging area)
25-NY	Glad Tidings Tabernacle	325-329 West 33rd St.	No effect
26-NY	Former Manhattan Opera House	311 West 34th St.	<u>Permanent Indirect Effect (Contextual – Visual)</u> : location near Employee Only/ Emergency Personnel Access entrance at 323 West 34th Street <u>Temporary Indirect Effects</u> : access restrictions, noise/vibration, dust, traffic and visual (Employee Only / Emergency Personnel Access entrance at 323 West 34th Street)

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York (continued)

Id No.* (Figure 1-3)	Property Name	Location	Potential Effects as Identified in the ARC FEIS
27-NY**	Former New York Edison Company	308-312 West 36th St.	No Effect
28-NY	Cheyenne Diner	411 Ninth Ave.	No Effect
29-NY	Former Hess Brothers Confectionary	502-504 West 30th St.	No Effect
30-NY	Former Charles P. Rodgers and Co. Building	517-523 West 29th St.	No effect
31-NY	Former W & J Sloane Warehouse	541-561 West 29th St.	No effect
32-NY	550 West 29th Street	550 West 29th St.	No effect
33-NY	Hotel Pennsylvania	401 Seventh Ave.	<p><u>Permanent Indirect Effects (Contextual – Visual)</u>: location near 33rd Street Fan Plant (137-139 West 33rd Street)</p> <p><u>Temporary Indirect Effects</u>: access restrictions, noise/vibration, dust, traffic and visual 33rd Street Fan Plant</p>
34-NY	Equitable Life Assurance	383-399 Seventh Ave.	No effect
35-NY	Governor Clinton Hotel	371-377 Seventh Ave.	No effect
36-NY**	New Yorker Hotel	481-497 Eighth Ave.	<p><u>Permanent Indirect Effects (Contextual – Visual)</u>: location near Employee Only/ Emergency Personnel Access entrance at 323 West 34th Street</p> <p><u>Temporary Indirect Effects</u>: dust and traffic (Employee Only/ Emergency Personnel Access entrance at 323 West 34th Street)</p>
37-NY**	Pennsylvania Building	225 West 34th St.	<p><u>Permanent Indirect Effect (Contextual – Visual)</u>: location near 35th Street Fan plant/ construction access shaft</p> <p><u>Temporary Indirect Effects</u>: dust, traffic and visual (35th Street Fan Plant at 218-222 West 35th Street)</p>

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York (continued)

Id No.* (Figure 1-3)	Property Name	Location	Potential Effects as Identified in the ARC FEIS
38-NY	Former J.C. Penney Building	330 West 34th St.	<p><u>Permanent Indirect Effect (Contextual – Visual)</u>: location near Employee Only/ Emergency Personnel Access entrance at 323 West 34th Street</p> <p><u>Temporary Indirect Effects</u>: dust, traffic and visual (Employee Only / Emergency Personnel Access entrance at 323 West 34th Street)</p>
39-NY	St. Francis Roman Catholic Church Complex	129-143 West 31st St.	No effect
40-NY	St. John the Baptist Roman Catholic Church and Convent	207-215 West 30th St.	No effect
41-NY	Penn Station Service Building	236-248 West 31st St.	No effect
42-NY	Former French Hospital	326-330 West 30th St.	No effect
43-NY	Hudson River Bulkhead	Battery Place to 59th St. along the Hudson River	No effect
44-NY***	New York Terminal Warehouse Company	601 West 27th St./ 600-624 West 28th St.	<p><u>Permanent Indirect Effect (Contextual – Visual)</u>: location near Twelfth Avenue fan plant (281-295 Eleventh Avenue)</p> <p><u>Temporary Indirect Effects</u>: access restrictions, noise/vibration, dust, traffic and visual (Twelfth Avenue Fan Plant, access shafts, and staging area)</p>
	Starrett-Lehigh Building	Between Eleventh and Twelfth Avenues and West 26th and 27th Streets	No effect
45-NY	High Line	Along 30th St. between Tenth and Twelfth Aves., and Twelfth Ave. between 30th and 34th Sts.	No effect

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York (continued)

Id No.* (Figure 1-3)	Property Name	Location	Potential Effects as Identified in the ARC FEIS
46-NY	B. Altman & Company Building	188-198 Madison Ave./ 355-371 Fifth Ave.	No Effect
47-NY**	Loft Building	242 West 36th St.	No effect
48-NY**	New York Telephone Company Building	206-238 West 36th St.	No effect
50-NY**	Loft Building	470-472 Seventh Ave./ 202-204 West 36th St.	No effect
51-NY**	Loft Building	462-468 Seventh Ave.	Permanent Indirect Effect (Contextual – Visual): location near 35th Street fan plant (218-222 West 35th Street)
52-NY**	Loft Building	469-479 Seventh Ave.	No effect
53-NY**	Arsenal Building	463-467 Seventh Ave.	No effect
54-NY**	Loft Building	142-144 West 36th St.	No effect
55-NY**	Loft Building	147 West 35th St.	No effect
56-NY**	Loft Building	131 West 35th St.	No effect
57-NY**	Johnson Building	1331-1349 Broadway	No effect
58-NY	Marbridge Building	1328 Broadway	No Effect
59-NY	The Collingwood	45 West 35th St.	No effect
60-NY	Loft Building	28-30 West 36th St.	No effect
61-NY	Gorham Building/ Russeks Furs Building	390 Fifth Ave.	No effect
62-NY	Acker, Merrall & Condit Building	366-370 Fifth Ave.	No effect
63-NY	The Oakdale	36 West 35th St.	No effect
65-NY	Hotel McAlpin	1282-1300 Broadway	No effect

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York (continued)

Id No.* (Figure 1-3)	Property Name	Location	Potential Effects as Identified in the ARC FEIS
66-NY	Wilson Building	1270-1280 Broadway	No effect
67-NY	Hotel Martinique	1260-1268 Broadway	No effect
68-NY	G.J. Fuerth & Company Building/Greeley Arcade	127 West 30th St.	No effect
69-NY	Loft Building	115-125 West 30th St.	No effect
70-NY	23rd Precinct Police Station	134-138 West 30th St.	No effect
71-NY	Loft Building	130 West 30th St.	No effect
72-NY	Garment Center Historic District	Sixth Avenue to the east, Ninth Avenue to the west, West 35th Street to the south, and West 41st Street on the north	<p><u>Permanent Direct Effect:</u> construction of the Seventh Avenue Northwest Station Entrance would permanently displace the first floor and basement interiors of portions of Nelson Tower, a contributing property.</p> <p><u>Temporary Direct Effect:</u> a portion of the 34th Street façade of Nelson Tower, a contributing property, would be deconstructed, stored, and rebuilt using the original materials and design. No permanent impact to the building's façade.</p> <p><u>Permanent Indirect Effect (Contextual – Visual):</u> location near Employee Only/ Emergency Personnel Access entrance (323 West 34th Street), 35th Street Fan Plant/Construction Access Shaft (218-222 West 35th Street), Seventh Avenue Southwest Station Entrance, and Seventh Avenue Northwest Station Entrance</p> <p><u>Temporary Indirect Effects:</u> access restrictions, noise/vibration, dust, traffic and visual (Employee Only / Emergency Personnel Access entrance at 323 West 34th Street and fan plant at 218-222 West 35th Street)</p>

Table 1-2. Potential Effects on Historic Properties in the ARC APE – New York (continued)

Id No.*	Property Name	Location	Potential Effects as Identified in the ARC FEIS
73-NY	West Chelsea Historic District (added after preparation of the FEIS)	Roughly bounded by Twelfth Avenue to West 25th/26th Streets, Tenth Avenue, and then West 28th Street	<p>Permanent Indirect Effect (Contextual – Visual): location near Twelfth Avenue fan plant (281-295 Eleventh Avenue)</p> <p>Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (Twelfth Avenue Fan Plant, access shafts, and staging area)</p>

Source: ARC FEIS, 2008

Notes:

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NYSHPO.

** Denotes property that contributes to the Garment Center Historic District (72-NY)

*** Denotes property that contributes to the West Chelsea Historic District (73-NY)

NYCL = New York City Landmark.

Additional NYCL-eligible properties that are not considered eligible for listing in the National Register or the State Register (and were therefore excluded from the FEIS include: Combustion Engineering Building, 200 Madison Avenue; Offices for St. Francis of Assisi Church, 144 West 32nd St.; and Lerner Store, 478 Seventh Ave.).

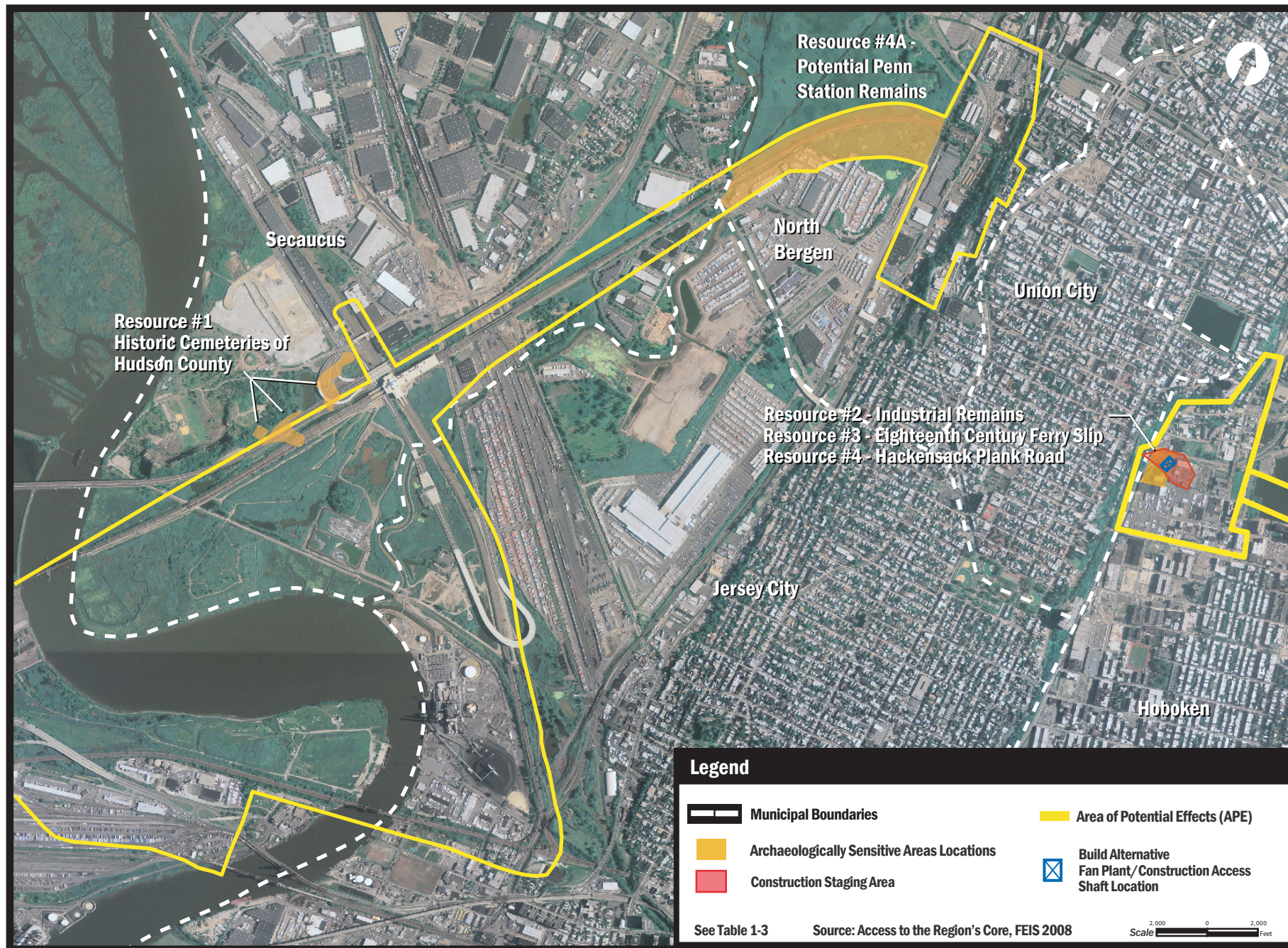




Table 1-3. Areas of Potential Archaeological Sensitivity and Potential Effects within the APE – New Jersey and New York

Resource # (Figures 1-4 and 1-5)	Name and Location of Potential Resource	Type of Potential Resource	Depth of Potential Resource/ Depth of Construction (feet)	Potential Cause of Adverse Effects from Construction
New Jersey APE				
1	Historic Cemeteries of Hudson County in Secaucus, NJ [Secaucus Potter's Field has received an opinion of eligibility for listing on the National Register of Historic Places (NJSHPO April 24, 2008)]	Historic burial ground	6/30	Trestle construction
2	Industrial Remains in Hoboken, NJ: 16th and Jefferson Street, at Hoboken Fan Plant/Construction Access Shaft and staging area	19th century historic industrial remains	45/125	Shaft excavation and laydown/staging area
3	Eighteenth-Century Ferry Slip in Hoboken, NJ: 16th and Jefferson Street, at Hoboken Fan Plant/Construction Access Shaft and staging area	18th century historic transportation facility remains	45/125	Shaft excavation and laydown/staging area
4	Hackensack Plank Road in Hoboken: 16th and Jefferson Street, at Hoboken Fan Plant/Construction Access Shaft and staging area	19th century historic transportation facility remains	45/125	Shaft excavation and laydown/staging area
4A	Potential Remains of Former Pennsylvania Station New York - along NEC alignment between Secaucus Road and Tonnelle Avenue	20th century historic transportation facility	0-15/160	Viaduct/embankment construction
New York APE				
5	Potential Piers and Wharves: at Twelfth Avenue Fan Plant/Construction Access Shaft – (281-295 Eleventh Avenue) (formerly Hudson River Shoreline to Tenth Avenue in Manhattan)	Historic piers, wharves fill retaining devices	10–20/160	Shaft excavation
6	Residentially Related or Domestic Archaeological Resources: 431 West 33rd Street at Dyer Avenue Fan Plant/Construction Access Shaft	Historic 19th century domestic remains	10–20/205	Shaft excavation
7	Residentially Related or Domestic Archaeological Resources: 137–139 West 33rd Street, at 33rd Street Fan Plant / Construction Access Shaft	Historic 19th century domestic remains	10–20/160	Shaft excavation

Table 1-3. Areas of Potential Archaeological Sensitivity and Potential Build Alternative Effects with the APE in New Jersey and New York (continued)

Resource # (Figures 1-4 and 1-5)	Name and Location of Potential Resource	Type of Potential Resource	Depth of Potential Resource/ Depth of Construction (feet)	Potential Cause of Adverse Effects from Construction
New York APE (continued)				
8	Residentially Related or Domestic Archaeological Resources: 218 West 35th Street, at 35th Street Fan Plant/Construction Access Shaft	Historic 19th century domestic remains	10–20/160	Shaft excavation
9	Residentially Related or Domestic Archaeological Resources: Southeast corner of Eighth Avenue and West 34th Street (462–474 Eighth Avenue), at Eighth Avenue Southeast Station Entrance	Historic 19th century domestic remains	10–20/30	Shaft excavation
12	Residentially Related or Domestic Archaeological Resources: Northwest corner of Broadway and West 34th Street (1313 Broadway), at Broadway Northwest Station Entrance	Historic 19th century domestic remains	10–20/16	Shaft excavation
13	Residentially Related or Domestic Archaeological Resources: Southwest corner of Broadway and West 34th Street (1293–1311 Broadway), at Broadway Southwest Station Entrance	Historic 19th century domestic remains	10–20/20	Shaft excavation
14	Residentially Related or Domestic Archaeological Resources: Southwest corner of Seventh Avenue and West 34th Street (East Side One Penn Plaza), at ADA Access/Emergency Entrance	Historic 19th century domestic remains	10–20/120	Shaft excavation
15	Residentially Related or Domestic Archaeological Resources: Southeast corner of Eighth Avenue and West 34th Street (West Side One Penn Plaza), at ADA Access/Emergency Entrance	Historic 19th century domestic remains	10–20/140	Shaft excavation
16	Residentially Related or Domestic Archaeological Resources: Southeast corner of West 34th Street and Broadway (108–110 West 34th Street), at ADA Access/Emergency Entrance	Historic 19th century domestic remains	10–20/155	Shaft excavation
17	Residentially Related or Domestic Archaeological Resources: Midblock on West 34th Street between Eighth and Ninth Avenues (323 West 34th Street) at Employee Only/Emergency Personnel Access entrance	Historic 19th century domestic remains	10–20/160	Shaft excavation

Source: ARC FEIS, 2008

1.4 Section 106 Consulting Parties

During the EIS phase of THE Project, the following organizations expressed an interest and have been designated as consulting parties:

- Amtrak
- New York City Landmarks Preservation Commission
- Township of Kearny
- Hudson River Park Trust
- Pennsylvania Railroad Technical and Historical Society
- Hackensack Riverkeeper

Consultation with consulting parties to investigate further the presence of significant historic properties and to develop appropriate mitigation measures will continue throughout the final design and construction phases, as mandated by Section 106 of the National Historic Preservation Act of 1966.

1.5 Construction Contract Packages

This CRMP describes the protection measures that will be implemented for known and potential Built Historic Properties and known and potential archaeological resources located within areas of excavation and construction activities for THE Project. THE Project has been subdivided into the following 26 construction contracts that are identified on **Figures 1- 6 and 1-7**:

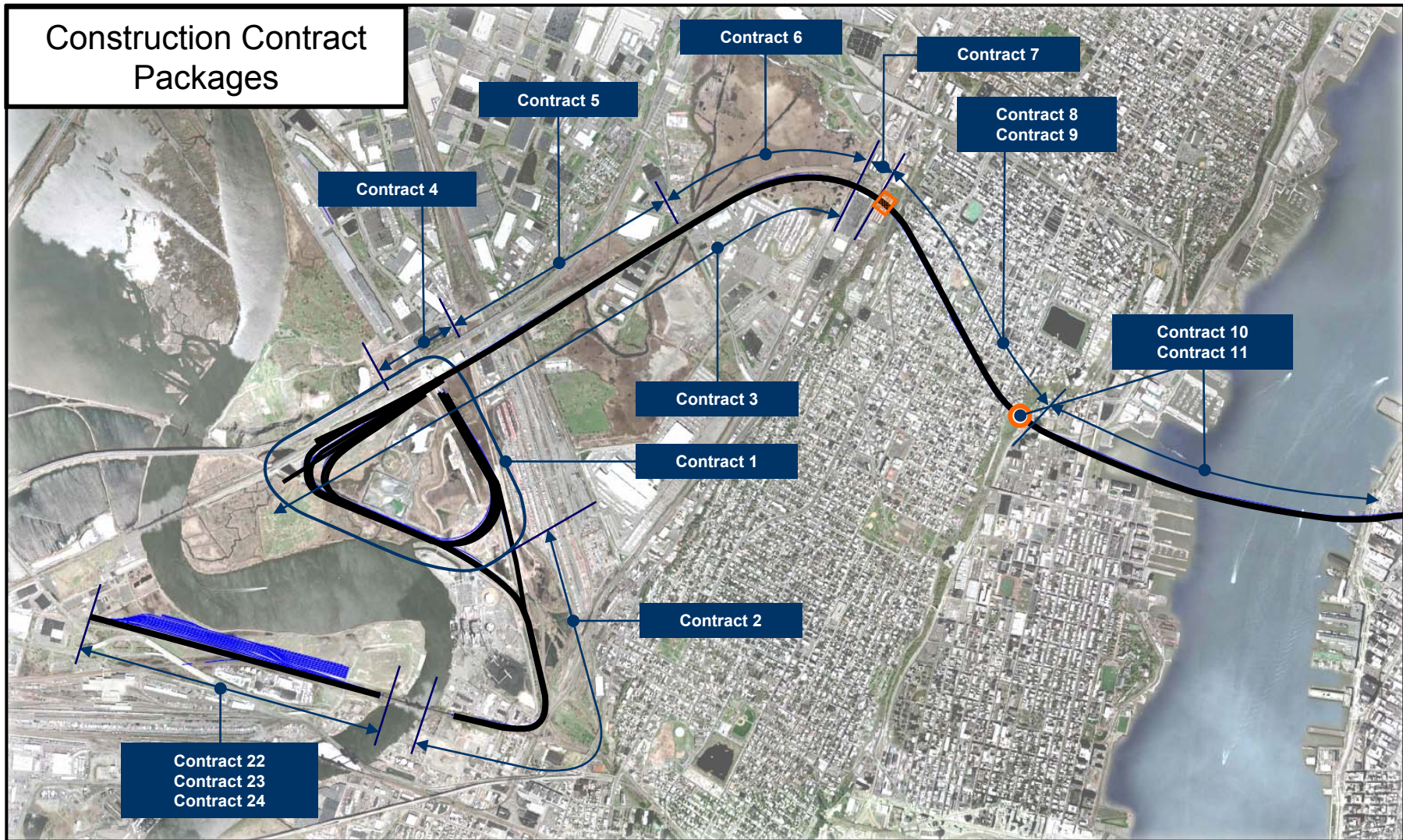
- C1 - Loop Track Mainline and FRL Station Connection
- C2 - West End Wye Track
- C3 - Amtrak Transmission Tower Relocations
- C4 - Frank R. Lautenberg Station Modifications and Viaduct up to West of Croxton Yard Bridge
- C5 - Croxton Yard Bridge to Secaucus Road
- C6 - Secaucus Road to the Vicinity of Tonnelle Ave.
- C7 - Tonnelle Avenue Underpass
- C8 - Palisades Tunnels Design/Build Package
- C9 - Palisades Tunnels Internal Concrete, Portal and Traction Power Substation Control Bldg.
- C10 - Hudson River Tunnels Design/Build Package
- C11 - Hoboken Fan Plant, Internal Concrete, Structure and Fit-out
- C12 - Manhattan Tunnels Design/Build Package
- C13 - Dyer Avenue Shaft and Cavern/NYPSE Ancillary Cavern Excavation and Lining
- C14 – Dyer Avenue Fan Plant Structure & Fit Out

- C15 - Twelfth Ave. Fan Plant, Internal Concrete, Structure and Fit-out
- C16A – 33rd Street Shaft Excavation, NYPSE Cavern East
- C16B - 35th Street Shaft Excavation, NYPSE Cavern West
- C17 - NYPSE - Station Architectural and Station Finishes
- C18 – 33rd & 35th Street Station Fan Plant Structures and Fit Out
- C19 - NYPSE Station Entrances
- C20 - Trackwork - At-grade Ballasted Track, Special Track Work & DF Track
- C21 - Furnish & Install Railroad Systems
- C22 - Kearny Yard Earthwork Management
- C23 - Kearny Yard Civil Work
- C24 – Kearny Yard Buildings
- C25 - Furnish and Install All Fans, Fan Controllers and Other Equipment

As applicable, each construction contract will have individual cultural resources plans specifically tailored to the resources and the construction activities in that contract, following the general parameters specified in this project-wide CRMP. Contractors will be responsible for adhering to the individual plans generated for each construction contract, which will be included in contractor bid specifications.

During construction, coordination will be required among NJ TRANSIT's Cultural Resource Management Team (CRMT), NJ TRANSIT's Construction Manager (CM), the Contractor, as well as the FTA, NJSHPO, NYSHPO, and/or New York City Landmarks Preservation Commission (NYCLPC), for each contract package.

Construction Contract Packages



- Contract 1 Loop Track Mainline Connection and FRL Station Connection
- Contract 2 West End Wye Track
- Contract 3 Amtrak Transmission Tower Relocations
- Contract 4 FRL Station Modification & Viaduct up to West of Croxton Yard Bridge
- Contract 5 Croxton Yard Bridge to Secaucus Rd.
- Contract 6 Secaucus Road to Vicinity of Tonnelle Ave.
- Contract 7 Tonnelle Ave. Underpass

- Contract 8 Palisades Tunnels
- Contract 9 Palisades Tunnels Internal Concrete
- Contract 10 Hudson River Tunnel
- Contract 11 Hoboken Fan Plant
- Contract 22 Kearny Yard Earthwork Management
- Contract 23 Kearny Yard Civil Work
- Contract 24 Kearny Yard Buildings

Construction Contract Packages



Contract 12	Manhattan Tunnels
Contract 13	Dyer Ave. Shaft Excavation / Interlocking Cavern Excavation & Concrete Lining
Contract 14	Dyer Ave. Fan Plant
Contract 15	Twelfth Ave. Fan Plant, Tunnel Internal Concrete
16A & B	33rd & 35th Sts. Shafts and NYPSE Cavern East and West
Contract 17	NYPSE Station Finishes

Contract 18	Fan Plant Structure at 33 rd & 35 th Sts.
Contract 19	Station Entrances
Contract 20	Trackwork – At-grade Ballasted Track, Special Track Work and DF Track
Contract 21	Project Wide RR Systems
Contract 25	Furnish and Install all Fans, Fan Controllers, Fan Plant Substations and other Equipment

1.6 Key Personnel

Cultural Resources Manager. NJ TRANSIT will appoint a Cultural Resource Manager (CRM) who will be responsible for the implementation of this plan across all construction contracts. The CRM will meet the appropriate standards of the National Park Service (36 CFR 61 Appendix A) and will be located in the New Jersey/New York City metropolitan area. The CRM will direct professional architectural historians and archaeologists, as appropriate, depending upon the assignment for the project. In accordance with the Programmatic Agreement (PA), lead staff will meet (36 CFR 61 Appendix A) with appropriate experiences and background in Historic Properties (including History, Architectural History, Historic Architecture, and Archaeology, as appropriate).

The CRM will represent NJ TRANSIT's Cultural Resources Management Team (CRMT) and will ensure that the contractor complies with all elements of this plan. The CRMT will report back to NJ TRANSIT's Construction Manager (CM) Resident Engineer (RE) on a regular basis on the status of the Contractor's activities. The CRM's role is to ensure that all significant cultural resources previously identified during the EIS process, as well as those resources that may be discovered during the course of design and construction that were not previously identified, are appropriately evaluated and protected during construction, in accordance with the requirements in the Programmatic Agreement. The CRM will draw upon the expertise of the CRMT personnel during the project. The CRM will:

- Serve as the point-of-contact between NJ TRANSIT and the Construction Manager's (CM) Resident Engineer (RE);
- Be responsible for tracking the progress of all activities undertaken by the RE and/or the Contractor related to cultural resources;
- Brief the Construction Manager's Resident Engineer as well as the Contractor on all issues involving cultural resources in each specific construction contract package (Built Historic Properties and known and potential archaeological resources and areas of sensitivity).

CRMT Inspector/Principal Investigator – During the construction period for the various construction contracts, a qualified Archaeological Principal Investigator and a licensed engineer (CRMT Inspector) from NJ TRANSIT's CRMT will be assigned to monitor activities in the field, under the direction of the CRM.

For every construction contract with the potential to affect significant Built Historic Properties, a qualified Architectural Historian from the CRMT and/or licensed engineer from NJ TRANSIT's CMC will be assigned to act as CRMT Inspector for the contract. For every construction contract with the potential to impact archaeological resources, a qualified Principal Investigator will be assigned to act as CRMT Inspector for the contract. Each construction contract will be monitored by a qualified CRMT Inspector with specific expertise in either Built Historic Properties or archaeological resources.

The CRMT Inspector will be present, on-site as appropriate, whenever there is the potential for Built Historic Properties and/or archaeological resources to be affected by construction, as per the requirements in the PA. For locations that have not been previously identified as sensitive, or having the potential for archaeological resources, the CRMT Inspector will be available for site inspections should the need arise.

CRMT Inspector/Principal Investigator for Archaeological Resources (PI): NJ TRANSIT's CRMT will include a Principal Investigator (PI), who will meet the requirements of the National Park Service (36 CFR 61 Appendix A). The PI will be the lead representative of the archaeological team and will be their point-of-contact. The PI will be responsible for the quality of any archaeological field testing/monitoring and/or excavation activities associated with specific contract packages, as well as for the quality of all associated reports required as part of each contract.

The PI will be on site at times specified in the monitoring protocol. They will be responsible for implementation of the protocol on site and the quality of work performed by the monitoring team. The PI will be responsible for communicating to the Contractor's Foreman the need for a member of the monitoring team to provide guidance to excavators in areas of high sensitivity or where archaeological remains have already been found. In these circumstances, 'guidance' refers to telling where and how deep an excavator is to dig and when and for how long they are to stop. This level of communication is necessary for creating a safe work environment.

The PI is also responsible for informing team members of any Health and Safety Plan (HASP) that is developed for the work site by the Contractor, will know who the Health and Safety Officer is, and will assure that the monitoring team is in compliance with its rules and regulations included in the HASP. The monitoring team will be equipped and wear all required personal protective equipment (PPE) as specified in the HASP. The monitoring team should also be notified of and included in any on-site meetings or briefings held by the Health and Safety Officer.

CRMT Field Director (FD): The CRMT's Field Director (FD) will be responsible for assisting the PI, as necessary, in directing and managing the field efforts of the CRMT's archaeological team. The work items will include collecting and organizing equipment, paperwork, mapping, field notes, etc. The FD will be competent to review and evaluate the accuracy and adequacy of field notes and drawings produced by the CRMT's Field Technicians. The FD should have a minimum of two years of experience investigating sites of comparable cultural affiliation, date and function.

CRMT Field Technicians (FT): The CRMT's Field Technicians (FT) will work (as necessary) under direct supervision of the CRMT's PI and the CRMT's FD to undertake fieldwork, produce acceptable field notes and scaled drawings or other forms of recordation required for the project.

CRMT Geomorphologist: The Geomorphologist will be responsible for reviewing selected soil boring data and samples recovered from geotechnical borings to be conducted on site by the Contractor. The Geomorphologist will be accompanied on site at by the PI, who will be responsible for selecting the appropriate number of borings to be reviewed, in consultation with the CRMT's Inspector. The Geomorphologist will produce reports detailing the results of all analyses, which shall include an evaluation of the archaeological potential of all soil horizons sampled by the geotechnical borings. The geomorphologist will be on site during the monitoring of borings in the shaft location, and on-call during construction activities.

CRMT Physical Anthropologist: The CRMT will include an on-call professionally qualified Physical Anthropologist in case services involving the identification of human burials are required.

CRMT Monitoring Teams. When necessary, archaeological monitoring will be accomplished through the formation of monitoring teams. Each team will be comprised minimally of three individuals and may involve more, depending upon site conditions and requirements. Although any task assigned to the monitoring team is the responsibility of all team members to complete, one individual will be primarily responsible for monitoring the movement of any mechanical equipment in the area of the team's activities, a second individual will be primarily responsible for any hand-excavation tasks that are assigned to the team, and the third individual will be responsible for assuring that all recordation tasks (e.g., photography, scale drawings, note taking) assigned to the team are completed satisfactorily. All monitoring teams will be directed by and report to the FD and/or PI. The number of teams on site at any one time will be dictated by the pace of excavation and the number and size of finds made during the course of the monitoring project.

Construction Manager's Resident Engineer (RE): NJ TRANSIT's Construction Manager shall appoint at each construction site a Resident Engineer, who will be responsible for the execution of the given construction job and oversee the Contractors. The Resident Engineer, a representative of NJ TRANSIT, will be responsible for coordinating with the CRM, as well as with the CRMT Inspector if present on the construction site. The RE has the authority to stop work.

2 CONSTRUCTION PROTECTION PLAN FOR ARCHAEOLOGICAL RESOURCES

2.1 Introduction

This chapter of the CRMP presents the Construction Protection Plan for Archaeological Resources, which is a broad framework of activities that will be undertaken to avoid or mitigate impacts to areas of archaeological sensitivity located along THE Project alignment during final design and construction. The Programmatic Agreement (PA) developed for THE Project stipulated a wide range of commitments to protect areas of archaeological sensitivities, as described in the following sections.

2.2 Specific Requirements for the Protection of Archaeological Resources

2.2.1 Additional Evaluation of Archaeologically Sensitive Areas (PA Exhibit I)

Prior to archaeological monitoring or excavation activities to be carried out under the individual construction packages, additional historic documentary research will be carried out at each of the archaeologically sensitive areas identified in the PA. The results of these analyses will be produced as a series of Documentary Analysis Reports (DAR), which will be submitted for review and comment to the FTA, NJSHPO, NYSHPO and NYCLPC. These reports will also be given to the Contractors for each contract that possesses areas of archaeological sensitivity as defined in the PA.

2.2.2 Soil Boring Program (PA Exhibit J)

Selected soil borings will be monitored to further refine the assessment of potential for archaeological resources in the APE, particularly in deep stratigraphic settings along the Hudson River shoreline in New Jersey and New York. All borings within potential burial ground sites will be monitored by the CRMT, aided by an on-call physical anthropologist as needed. Qualified archaeological personnel from the CRMT will monitor the borings, prepare reports, and then the data gathered will be incorporated in the planning for monitoring and/or archaeological testing in the different construction contract packages. The results of the soil boring monitoring and the review of soil boring logs will be incorporated into the DARs identified above and provided to FTA and the SHPOs in accordance with the terms of the PA.

2.2.3 Construction and Archaeological Phasing Plan (PA Exhibit P)

A specific construction and archaeological phasing plan will be prepared for each construction contract that will require archaeological field testing and/or monitoring. The construction and archaeological phasing plan will be provided as part of the Contractor's specifications. The plan will identify what specific construction activities are planned that could affect areas of archaeological sensitivity, and how the archaeological work will be scheduled in relation to construction activities.

2.2.4 Identification of Additional Archaeologically Sensitive Areas (PA Exhibit N)

Construction design plans will be reviewed at 60 percent, and 90 percent to determine whether any new areas that may be impacted by construction should be considered archaeologically sensitive and required detailed studies and/or mitigation efforts. These plan sets will be provided to the FTA and SHPO for their review and comment.

Thirty percent (30 percent) plans were previously submitted to NJSHPO and NYSHPO upon the completion of Preliminary Engineering.

2.2.5 Field Testing and/or Monitoring Plan (PA Exhibit K)

Each construction contract that possesses areas of archaeological sensitivity will include an archaeological field testing and/or monitoring plan as part of its specifications and associated plans. These specific plans will be developed to address the particular type of resource that may be anticipated in the specific construction contract. The plans will stipulate methods and procedures that shall be used during the investigation of archaeologically sensitive areas within the specific construction contract.

2.2.6 Protocol for Work in Areas Potentially Sensitive for Human Remains (PA Exhibit L)

This protocol primarily establishes the monitoring and testing procedures that govern work in the area proximate to the Historic Cemeteries of Hudson County (Construction Contract 01 Loop Track) in Secaucus, New Jersey. These guidelines will also be followed if human remains are unexpectedly found during construction activities within other portions of the project area. The methodology for the treatment of human remains will be included in the Unanticipated Discoveries Plan prepared for each construction contract as described below.

2.2.7 Unanticipated Discoveries Plan (PA Exhibit O)

This plan, included in each specific construction contract package's specifications and plans, presents the procedures to be followed in the event of an unexpected archaeological discovery during construction within the APE. The plan includes provisions for the discovery of purely archaeological deposits, as well as the unanticipated discovery of human remains.

2.2.8 Mitigation, Data Recovery, Curation and Public Interpretation (PA Exhibit M)

This plan provides details on the tasks that would be performed if a National Register (NR) eligible archaeological property was encountered during construction activities and could not be avoided. This plan is elaborated upon in Exhibit M of the PA. For each construction contract, if the CRMT uncovers a significant archaeological site that can not be avoided, the CRMT would be required to prepare a specific Mitigation, Data Recovery, Curation, and Public Interpretation Plan for that site, in consultation with the CRMT. The plan would be presented to NJ TRANSIT, as well as to FTA, and the SHPO, for review and approval.

3 CONSTRUCTION PROTECTION PLAN FOR BUILT HISTORIC PROPERTIES

3.1 Introduction

This chapter of the CRMP presents the general protocols and stipulations to avoid construction-related adverse impacts on Built Historic Properties located within the Project's Area of Potential Effects (APE), as per Exhibit G of the ARC Programmatic Agreement (PA). Contract-specific Construction Protection Plans (CPP) will be developed to protect resources from potentially harmful ground-borne vibrations and air-overpressure, as well as potentially adverse ground movements causing excessive settlement and/or angular distortion of building structural elements from adjacent construction, excavation, and demolition activities.

The contract specific CPPs will be developed in consultation with the FTA, NJSHPO, NYSHPO, NYCLPC, and all other relevant city and state agencies, including the New York City Department of Buildings (NYCDOB). The CPPs will be based on the requirements stipulated in SHPO and NYCLPC documents concerning blasting and vibration and other relevant guidance, such as the NYCDOB's *Technical Policy and Procedures Notice #10/88* regarding historic buildings. It should be noted that in the Programmatic Agreement, it was stated that all resources within 90 feet of construction would be monitored. All historical resources within the noise and vibration zone will be monitored during construction and subject to the conditions specified in this chapter of the CRMP, as well as in the contract specifications.

The Contractor will be responsible for complying with all of the required elements in the contract specific Construction Protection Plans, under the direction of NJ TRANSIT's Construction Manager's Resident Engineer, and in consultation with NJ TRANSIT's Cultural Resources Manager (CRM) and Inspector whose roles are defined in Chapter 1 of this CRMP.

3.2 Protection Methodology for Built Historic Properties

This general methodology to be used for the protection of Built Historic Properties from adverse impacts of construction activities within an area of potentially adverse construction impacts associated with THE Project includes the following items:

1. Prior to construction, a general plan will be prepared by the Contractor for the protection of Historic Properties from heavy machinery, including the installation of construction barriers, sensitive Historic Property signage, and development of machinery operating protocols. This plan will be submitted to the CRMT for review and approval prior to construction activities within the pre-construction condition inspection zone.
2. A pre-construction condition inspection of all previously identified Built Historic Properties will be undertaken by professional engineers (the "Inspecting Engineer") licensed to practice in the State of New Jersey or New York, to ascertain any pre-existing damage, existing structural distress, and any potential weakness of the Built Historic Properties' foundations or structures. This work activity will be undertaken by the Construction Manager (CM) and provided to the Contractor. Where access permits, both the interior and exterior condition of the structures will be examined prior to any excavation or construction works commencing.

3. A written report will be prepared documenting any potential weakness or structural stress, which will include assessing the stability of any applied ornament. The report will also include a protocol addressing any recommended remediation to secure problem areas prior to the commencement of any construction activities that may affect the Built Historic Properties. The written report will be supplemented with photographic documentation to provide a clear record of existing conditions and any problem areas.
4. During construction, the Built Historic Properties could potentially be impacted by construction activities and will be monitored for settlement, rotation and construction-induced vibrations. Monitoring criteria and limits will adhere to the appropriate New Jersey and New York standards, and the appropriate NYCLPC standards, which limit construction vibration to a maximum peak particle velocity of 0.5 inches per second for historic structures. More stringent vibration criteria may be adopted for specific historic structures, based upon the findings of the preconstruction surveys. These limits will be adhered to and monitored for the preservation of the Built Historic Properties by NJ TRANSIT's Construction Manager in consultation with the CRMT.
5. The Contractor will ensure that the appropriate vibration limits and any other criteria deemed appropriate by the Construction Manager are incorporated into the construction plan to protect Built Historic Properties from impacts during construction. These controls will be monitored and inspected by the CMC on a regular basis to ensure compliance.
6. The CM will install crack monitoring equipment on surfaces of the Built Historic Properties. The Contractor will install additional geotechnical and structural instrumentation on surfaces of, or nearby to, the Built Historic Properties. The CM will provide continuous vibration monitoring inside the Built Historic Properties during demolition, excavation, and construction operations, pursuant to the design protocol. Seismographs will be installed in the basement and/or the first floor of the Built Historic Properties. These units will be located so that they would be away from the general public but accessible to the technicians who must monitor them. The seismographs would measure vibration levels during demolition, excavation, and construction. Prior to the commencement of demolition and excavation operations, the seismographs would be installed and tested to ensure that they are in working order and to enable taking baseline readings. Daily logs of the seismic monitoring would be maintained and submitted to the NJSHPO, NYSHPO, and NYCLPC upon request.
7. If any data exceeds certain threshold values, an immediate review of the construction work methods will be implemented and specific measures identified to mitigate any future potential for increased impacts.
8. Any damage caused to Built Historic Properties during construction activities will be remediated and the structures repaired to the satisfaction of the owner. All repair and mitigation of impacts will be coordinated with the appropriate SHPO depending upon the location of the resource.
9. All repairs and mitigation of impacts will be coordinated with NJSHPO, NYSHPO and NYCLPC.

3.3 Pre-Construction Condition Surveys

The CM will perform pre-construction condition surveys of all Historic Properties within the Pre-construction inspection zone. This work will be done by an engineering firm licensed to practice in the State of New Jersey, or New York State, as appropriate. The pre-construction condition survey will document visually evident pre-existing damage. No structural testing or evaluation will be performed. The survey shall include both the first floor and basement(s) interior and exterior facade of the structure as appropriate. Installation of exterior crack monitors shall be required on readily accessible existing exterior cracks greater than 2 mm (0.08 inch) in width aperture with the consent of the property owner. The results of the survey will be provided to the Contractor for acceptance. Crack monitoring by the CM shall be performed in accordance with the details in the appropriate contract specific specifications.

3.4 Video and Photographic Documentation

The CM will document visually evident damage or distress during pre-construction condition survey of Built Historic Properties. The report will include digital photographic documentation by means of 8 by 10-inch color photographs keyed to a map or plan to provide a verifiable and traceable record of existing of the condition structures and any potential problems that are evident. All photographs shall contain the project record identification number and date and time of exposure, printed integrally during processing. Detailed notes of existing conditions will be recorded and, where applicable, sketches will be made to document the conditions of the structures. These surveys will be provided to the Contractor for acceptance.

The CM will make a preliminary determination of the buildings classification which will be provided to the "engineer of record" to establish additional requirements for protection and/or instrumentation and/or ground treatment/stabilization work prior to any excavation.

If the Engineer of record determines that repairs should be performed prior to construction, NJ TRANSIT in consultation with SHPO and the building owner will perform an assessment of the stability of any applied decorative ornaments or features, together with a procedure for addressing any remediation work required to secure or mitigate potential problems prior to the commencement of any construction activities. Once remedial work has been completed, the Construction Manager will provide updated reports to the Contractor for acceptance.

For the Built Historic Properties, video photography will also be used for documentation purposes. Video equipment shall be high-resolution broadcast quality (with a resolution of National Television System Committee (NTSC) 500 horizontal lines or better) with low light capabilities although additional lighting may also be required.

3.4.1 Individual Property Reports

For historical properties, the Construction Manager shall prepare pre-construction condition surveys for Built Historic Properties. These reports will provide a concise record of visually evident existing damage. No destructive structural testing or evaluation will be performed. Technical reports shall be written outlining the history, occupancy, type of construction, materials and other pertinent details of the structures. The reports shall adequately and logically detail the timeline of construction activities of the structure, covering framing, exteriors, interiors, roof, basement interiors, details

and ornaments/features, sidewalks and curbs and other elements surveyed. Sketches shall be included as necessary. The reports shall include any repairs made to the structure by NJ TRANSIT and/or the property owner prior to construction. The reports should make use of any previous documentation that has been prepared for the Historic Properties.

The CM prepared reports will be retained by NJ TRANSIT. Upon request, the reports will also be given to the owners of the Built Historic Properties. The pre-construction survey reports and Individual Property Reports will also be submitted to the FTA, NYSHPO, NJSHPO, and NYCLPC.

3.5 Monitoring Prior to and During Construction

In accordance with the contract specifications, the CM will install crack monitoring equipment on surfaces of the Built Historic Properties. The Contractor will install additional geotechnical and structural instrumentation on the surfaces of, or nearby to, the Built Historic Properties. If necessary, instrumentation may be installed within the properties as well as on the external surfaces with the property owners' consent. Monitoring will be conducted by the CM.

It is anticipated that some instrumentation will be portable for specific event monitoring, such as seismographs used to monitor any blast induced vibrations.

The purpose of this instrumentation will be to measure any movement, settlement, tilt, strain and induced vibration that may result from excavation and construction works, which may have the potential to cause adverse effects to the Built Historic Properties. The instrumentation will be installed prior to starting the construction work. This will allow a period where initial baseline monitoring readings may be obtained to provide a reference (or ambient) data set (as in the case of vibration monitoring).

The CM (crack monitoring equipment, structural monitoring points and surface movement monitoring points) and the Contractor (all other geotechnical and structural instrumentation) shall install all instrumentation required to monitor the Built Historic Properties which may be affected by project construction works and methods.

NJ TRANSIT's CRMT will provide on-site field representatives (CRMT Inspector) who meet the appropriate qualifications as specified in the PA. The CRMT Inspector will be on-site at times when there is a potential for Built Historic Properties to be affected by construction and will monitor all construction activities, in coordination with the CM.

3.5.1 Instrumentation Monitoring Locations

The Contractor will install geotechnical and structural instrumentation on Built Historic Properties in accordance with the contract specifications and plans. The Contractor may install additional geotechnical and structural instrumentation on the Built Historic Properties (in consultation with the CM and the CRMT Inspector) based upon the results of the pre-construction survey.

3.5.2 Routine Monitoring Frequency and Monitoring Duration

The routine monitoring frequency and duration will depend upon the location of the excavation and/or construction works at any time. As the construction work advances toward the Built Historic Properties, the monitoring frequency will increase. Likewise, the duration of monitoring will also be determined by distance between the buildings and the construction work. Coordination meetings among the Contractor, the CM, and

the CRMT Inspector will track the progress of the construction activities and assess relative distances of construction activities to Built Historic Properties. The CM will then recommend changes in the frequency of monitoring activities, if required.

Built Historic Properties located within the noise and vibration zone, adjacent to construction activities, will all be monitored for noise and vibration impacts. The minimum required monitoring frequency and duration is presented below in **Table 3-1**, and for blasting activities in **Table 3-2**. Photographs of the affected historic buildings of sufficient clarity to view the “telltales” shall be taken by the contractor weekly during construction in accordance with *New York City Department of Buildings Technical Policy and Procedure Notice #10/88* and provided to the CM.

Table 3-1. Monitoring Frequency and Duration

Instrumentation Type	Monitoring Frequency and Duration of Monitoring for Geotechnical and Structural Instrumentation	
	While Construction is within 100 feet of the Resources	Until End of Construction of Specific Contract Package
For Settlement	Once Per Day/Shift	Once Per Month
For Angular Distortion	Once Per Day/Shift	Once Per Month
For Crack Monitoring	Once Per Day/Shift	Once Per Month

Table 3-2. Monitoring of Blasting Activities

	While Construction is within 50 feet of Built Historic Properties	While Construction is within 51 to 200 feet of Built Historic Properties
For Change of Blast Induced Dynamic Strain	Once Per Day/Shift	Once per Month
For Change of Load	Once Per Day/Shift	Once per Month
For Vibration Monitoring	Monitor Every Blast	Monitor Every Blast

It should be noted however, that the monitoring frequency will be adjusted accordingly in the event that the stability of any of the Built Historic Properties becomes a concern. A contingency monitoring frequency and duration plan is defined in **Table 3-3** below.

Table 3-3. Contingency Monitoring Frequency and Duration

Instrumentation Type	Monitoring Frequency and Duration of Monitoring for Geotechnical and Structural Instrumentation if Stability of the Resources is a Concern*				
	Immediately After Ground Movement or Settlement	In Affected Zone After Ground has Stabilized	After Review of Settlement Data and Agreement among Concerned Parties	4 Weeks After All Data Shows Stable Condition	Until End of Construction for Each Specific Contract Package
For Settlement	Every 4 hrs	Twice per Week for 1 Month or more frequently as required	Once per 2 weeks for 6 Months	Once per Month	Once per Month
*Concerned Parties refers to the CM, the property owners, FTA, NYSHPO, NJSHPO, and NYCLPC.					

In addition, should instrumentation monitoring results reach 'Threshold Level' or 'Limiting Level' criteria, the monitoring frequency and duration shall be increased and/or excavation/construction operations altered or stopped/secured.

3.6 Threshold and Limiting Level Procedures

Detailed review and interpretation of all geotechnical and structural monitoring data will be made to determine whether movements, settlements, tilt and vibrations have reached critical levels. These critical levels (known as 'Response Levels') are defined as **Threshold Levels** and **Limiting Levels**. It is anticipated that the CM will undertake monitoring activities during construction within the noise and vibration zone, and as specified in the contract-specific specifications and CPPs. The CRMT Inspector will review the results of the daily monitoring being undertaken by the CM, and will relate the findings (with their daily reports) back to the CRM. If any issues arise involving potential impacts to Built Historic Properties, the CRM will immediately meet with the CRMT Inspector and the CM on-site to evaluate the situation and discuss approaches to mitigate the issue.

The definition of the required action that must be taken should any geotechnical or structural instrument achieve such a level is defined in **Table 3-4** below:

Table 3-4. Required Action for Threshold Level or Limiting Level

Response Level	Required Action
Threshold Level	<p>The value of the geotechnical or structural instrumentation reading at which the Construction Manager (CM), CRMT Inspector, and Contractor jointly assess the necessity of either or all of the following:</p> <ul style="list-style-type: none">▪ Altering the method of excavation or construction▪ Altering the rate of excavation or construction▪ Altering the sequence of excavation or construction▪ Increasing the number of instruments▪ Increase frequency of monitoring of affected instrument
Limiting Level	<p>The value of the geotechnical or structural instrumentation reading at which the CM's RE, in consultation with the CRMT Inspector, can order the Contractor to:</p> <ul style="list-style-type: none">▪ Cease excavation or construction operations▪ Make site and affected properties secure▪ Take necessary predetermined measures to mitigate movements and secure the impacted resource to protect the safety of the public as well as public and private properties and businesses. <p>The Limiting Level for each instrument represents the absolute maximum permissible reading (maximum ground or structure movement and the maximum permissible vibration, etc.).</p>

Prior to the execution of major component aspects of the works, the Contractor will prepare an **Action Level Plan** for each significant aspect or component of work. This document will outline measures to be taken to arrest ground or structure movements in the event that **Threshold/Limiting Levels** are reached or exceeded. The **Plan of Action** will be reviewed and approved by the CM, in consultation with the CRMT Inspector and the CRM.

Table 3-5 identifies procedures to be followed in the event a Threshold Level or Limiting Level is reached.

Table 3-5. Procedures to Be Followed in the Event of a Threshold Level or Limiting Level

Response Level	Procedure to be Followed
If a Threshold Level is reached	The Contractor must meet with the CM, CRMT Inspector, and the CRM to discuss the need for response actions. NYSHPO, NYCLPC, and/or NJSHPO will be notified by NJ TRANSIT.
	The Contractor may be required to provide a response to the CM and the CRMT Inspector. If so, within 24 hours of receiving the instrumentation data, the Contractor must submit a detailed specific plan of action. The CM, in consultation with the CRMT Inspector and the CRM, will review and approve the plan of action.
	If directed by the CM, the Contractor must implement the response actions within 24 hours of submitting a detailed specific plan of action so that the Limiting Level is not reached. NYSHPO, NYCLPC, and/or NJSHPO will be consulted upon the decision made by the CM and their agreement must be obtained before the Contractor may continue the construction.
	As soon as Threshold Level is reached, the CM and/or Contractor shall increase monitoring frequency of affected geotechnical instruments and install additional instruments as appropriate.
If a Limiting Level is reached	The Contractor must meet with the CM, CRMT Inspector, and the CRM to discuss the need for response actions. NYSHPO, NYCLPC, and/or NJSHPO will be notified by NJ TRANSIT.
	The Contractor may be required to provide a response to the CM and the CRMT Inspector. If so, within 12 hours of receiving the instrumentation data, the Contractor must submit a detailed specific plan of action. The CM, in consultation with the CRMT Inspector and the CRM, will review and approve the plan of action.
	If directed by the CM, the Contractor must implement the response actions within 12 hours of submitting a detailed specific plan of action so that the Limiting Level is not exceeded further. NYSHPO, NJSHPO, and NYCLPC (as appropriate) will be consulted upon the decision made by the CM and their agreement must be obtained before the Contractor may continue the construction.
	As soon as Limiting Level is reached, the CM and/or the Contractor shall install additional instruments as appropriate, and shall secure the affected Resource to protect the safety of the public, as well as public and private properties and businesses.

Table 3-6 below defines examples of criteria for the protection of Built Historic Properties. Specific criteria will be identified as appropriate in contract documents and Construction Protection Plans.

Table 3-6. Threshold and Limiting Levels for the Various Criteria

Criteria	Response Level	Limiting Criteria
Movement	Threshold	0.125"
	Limiting	0.25"
Angular Distortion	Threshold	1/2,500
	Limiting	1/1,250
Vibration (PPV)*	Threshold	0.50 in/sec
	Limiting	0.50 in/sec
Blast Induced Dynamic Strain	Threshold	150 microstrains
	Limiting	500 microstrains

Notes: * Or limits as specified in any Fragile Building Report

3.7 Remediation and Repair of Damage to Built Historic Properties

In case of damage to any Built Historic Property, such damage will be repaired and reasonable steps will be undertaken to restore the structure to its condition prior to being damaged. Before undertaking such work, the NJSHPO or NYSHPO will be consulted, as appropriate, regarding the proposed method(s) of repair work and materials to be used. The CM, in consultation with the CRMT Inspector, will prepare a Work Plan, Repair Methodology, Work Schedule, and technical material specifications and submit that package for the property owner's and SHPO's approvals. After the approval is obtained, any damage caused to the Built Historic Property by construction activities will be remediated and the building repaired to the satisfaction of SHPO and the owner. All repairs will be documented in the final report which will include photographs.

Similarly, for any impacts that occur to any NYCLPC individual landmark, interior landmark, scenic landmark, or a Built Historic Property within a landmark historic district, the NYCLPC will be consulted. If any work is to be performed on a Built Historic Property that is an NYCLPC individual landmark, interior landmark, scenic landmark or in an NYCLPC historic district, NYCLPC shall review and approve such work prior to work beginning and the work shall be performed in compliance with NYCLPC standards and requirements.

3.8 Reporting

The CM shall submit, on a daily basis, raw movement data, settlement data, and vibration monitoring data to the Contractor as well as to the CRMT Inspector. The CRMT Inspector shall include the monitoring data in his/her daily report submitted to the CRM. Formal monitoring reports, prepared by the CM (and copied to the CRMT Inspector and the CRM) will be submitted weekly and will be issued to NYSHPO, NJSHPO and NYCLPC upon their request with a covering summary containing a review and interpretation of the data contained within the report. Should any 'Threshold Levels' or 'Limiting Levels' be reached, the CM will prepare a daily instrumentation monitoring data summary sheet which will also contain their interpretation of the data. The CM will review this with the CRMT Inspector, and then issue it to the NYSHPO, NJSHPO and NYLPC. The weekly monitoring reports will then

be submitted to NYSHPO, NJSHPO, and NYCLPC, with a covering summary of the CM's review and interpretation of the data contained in the report.

3.9 Wrap-Up and Close Out Documentation

During construction, the CM, in consultation with the CRM, will prepare interim reports on a periodic (yearly) basis which will be submitted to the FTA, NYSHPO, NJSHPO, and NYCLPC. The reports will contain information pertinent to the construction activities and the impact that the activities have had on the Built Historic Properties within the pre-construction condition inspection zone. Any incidences or occurrences over the period of the report will be discussed.

Each report will be supplemented with plans, cross-sections and summary instrumentation monitoring data relevant to the period of the report. Photographic plates of changes in condition of Built Historic Properties will be included in the report. These overall project-wide reports will be comprised of specific contract package yearly reports, which will be integrated into the overall report.

At the completion of all construction activities across all of the contract packages, a final report will be produced containing a summary of all instrumentation monitoring results as well as key plans and cross sections showing key stages, the advancement of the work throughout the duration of the project, and the executed repairs, as applicable. A general discussion will be included which summarizes the works, progress, problems encountered and all incidences and occurrences recorded over the duration of the contract. Photographic plates of changes in condition of any of the Built Historic Properties will be included in the project-wide report.

4 ARCHAEOLOGICAL MONITORING AND FIELD TESTING

4.1 Introduction

This chapter of the CRMP provides a general approach to archaeological monitoring and field testing that will be required for construction contracts that contain areas of archaeological sensitivity. The CRMT will conduct the required monitoring and field testing. Contractors involved with individual contract packages with areas of archaeological sensitivity as noted in the contract documents, will be required to comply with the guidelines in the contract-specific monitoring and/or testing plans, and coordinate with the CRMT as specified.

In those areas where existing infrastructure or buildings prohibit archaeological testing, or where the depth at which archaeological deposits or features may be encountered cause it to be impractical or impossible to excavate, archaeological monitoring is the recommended option. In those sensitive areas where existing conditions permit excavation and where potential archaeological resources are within practical limits of standard archaeological methods, archaeological testing prior to construction is the recommended option. The application of these approaches is presented in **Table 4-1**. Each methodology for addressing archaeological concerns will be described separately below.

4.1.1 Monitoring and Field Testing Team Personnel

The implementation of Archaeological Monitoring and Field Testing Plans requires the active participation of a number of parties, each with varying roles and responsibilities. Personnel who will be involved in these efforts are identified in Chapter 1 of this CRMP. The Contractor will be responsible for complying with all of the required elements in the contract-specific plan, under the direction of NJ TRANSIT's Construction Manager's Resident Engineer, and in consultation with NJ TRANSIT's Cultural Resources Manager (CRM). Archaeological monitoring and testing will be undertaken by NJ TRANSIT's CRMT.

Table 4-1. Approach to Archaeologically Sensitive Areas

Construction Package(s)	Resource Name	Resource Type/Sensitivity	Recommended Approach
C01 – Loop Track Mainline and Frank R. Lautenberg Station Connection	Historic Cemeteries of Hudson County (HCHC)	Potential Human Remains	Archaeological Monitoring/Field Testing
C06 – Secaucus Road to West of Tonnelles Avenue	Remains of Penn Station New York	Potential Building Demolition Debris	Archaeological Monitoring/Field Testing
C08 – Palisades Tunnels	Hoboken Fan Plant/Construction Access Shaft	Industrial Remains 18th Century Ferry Slip Hackensack Plank Road	Archaeological Monitoring/Field Testing
C10 - Hudson River Tunnels			
C12 – Manhattan Tunnels	Twelfth Avenue Fan Plant/Construction Access Shaft Site	Wharves and Piers/Historic early 20th century industrial remains	Archaeological Monitoring
C13 – Dyer Avenue Shaft	Dyer Avenue Fan Plant/Construction Access Shaft Site and Employee-Only Entrance	Historic 19th century domestic remains	Archaeological Monitoring
C16A – West 33rd Street Shaft/Fan Plant	West 33rd Street Shaft/Fan Plant	Historic 19th century domestic remains	Archaeological Monitoring
C16B – West 35th Street Shaft/Fan Plant	West 35th Street Shaft/Fan Plant		
C19 – NYPSE Station Entrances	NYPSE Station Entrances		

4.2 Archaeological Monitoring

4.2.1 Monitoring Goals

The overall goals of archaeological monitoring are the same in all areas: to ensure that any potential archaeological resources that are encountered during construction are identified before they are removed, to assess their significance and eligibility for listing in the National Register of Historic Places (NR) and, if required, mitigate any adverse impacts to significant resources in coordination with the construction project.

Beyond those broad goals, the specific monitoring tasks at a specific location are geared to what types of resources are anticipated at that location.

4.2.1.1 Site Work Conditions

Occupational Safety and Health Administration (OSHA) 40-hour safety training may be required at certain sites and all monitoring team personnel and any subcontractors will be so trained. The CM's Resident Engineer, is responsible for ensuring that all employees and subcontractors are informed of and follow all requirements and regulations that may be stipulated in the Health and Safety Plan (HASP) that the Contractor will be responsible for developing the HASP and that the excavation will be secured by the Contractor according to OSHA standards for safe entry into a confined space. The CRMT will provide all personnel protective equipment (PPE) to its employees or subcontractors that may be required under the HASP.

The HASP will be made available to the CRMT and the Contractor's Health and Safety Officer will be made known to the monitoring team. Points of ingress/egress to the excavation and the necessary equipment (e.g., ladders, etc.) for personnel and equipment will be established and maintained by the Contractor. This includes dewatering the site, if necessary.

4.2.1.2 Monitoring Task Start

It will be the responsibility of the CM's Resident Engineer to inform the CRM of the date that excavations are set to begin with at least one month's notice. NJ TRANSIT will be responsible for notifying the NJSHPO, NYSHPO and, as appropriate, NYCLPC of the project start date. During that month-long period, one on-site meeting should be held among the CM's Resident Engineer, CRM, CRMT Inspector, and the Contractor's Foreman to review the monitoring plan and the procedures for its implementation.

4.2.1.3 Excavation Monitoring

The archaeological monitoring team will be on-site whenever excavation is underway in areas that have not been cleared (areas of sensitivity noted above in **Table 4-1**). It will be the responsibility of the CRMT to determine the nature of any discovery during construction that may warrant construction to cease for a certain period of time to evaluate the potential extent and significance of the find. Elements of the monitoring protocol are as follows:

- **Stop Work.** When features or potential features are observed being uncovered during a construction activity, the CRMT monitoring team will notify either the CRMT Inspector, who will notify the CM's Resident Engineer. The CM's Resident Engineer will issue a Stop Work Order to the excavator, and excavations will be halted for inspection. Immediate removal of the potential archaeological feature by the excavator will be prohibited. The monitoring team will then inspect the potential feature to determine its nature and need for recordation.

The CRMT Inspector is responsible for investigating the artifacts and/or features and to determine their cultural provenience. Hand excavations by the archaeological monitoring team to the extent necessary to identify and assess the objects or features may be required. If the objects and/or features are determined by the CRMT not to be significant, the CM's Resident Engineer will contact the Contractor's Foreman to resume work. It is anticipated that work stoppages will be variable, and may last from 20 minutes up to eight (8) hours.

- **Determination of Significance.** If the artifacts and/or features are determined by the CRMT to be potentially significant archaeological remains or features, the CM's

Resident Engineer and the appropriate SHPO will be notified. No work by the Contractor will be allowed to continue within that area until it has been cleared by the CRMT, NJ TRANSIT and the respective SHPO. The extent of the area to be protected will be defined by the CRMT and will include sufficient space to adequately sample the cultural deposits and stage the work space for the archaeological recordation. The CM's Resident Engineer, in addition to the CRMT Inspector, and representatives of NJ TRANSIT, FTA, the SHPO will be responsible for attending all necessary field views, meetings or phone conferences in order to make timely decisions.

The CRMT, will make recommendations as to the level of effort required to definitively assess the research potential and significance of the archaeological deposits. Consultation among NJ TRANSIT, the SHPO, and the CRMT will make the final determination as to the level of effort required to definitively assess the research potential and significance of the archaeological deposits.

The archaeological recordation protocol described below, for potentially significant archaeological resources, is anticipated to be the minimum level of recordation that will be required for any archaeological feature or deposit that is encountered during construction. Any other archaeological feature or deposit will be considered an "unanticipated discovery" and covered under that provision of the work plan, as further described in Chapter 5 of this CRMP.

- **Archaeological Recordation Protocol.** If it is determined to be a potentially significant archaeological feature, the Contractor may be requested to provide assistance with the use of mechanical equipment, etc., under the direction of the CRMT. The CM's RE will be notified of any such requests. The Contractor's excavator will be requested to leave the feature in situ (in place) and clear one face or side of the feature for archaeological recordation. The decision as to what side to expose will be made by the CRMT and the CM's RE (as necessary), who will communicate the decision to the excavator. For safety reasons, excavations adjacent to the feature will not exceed five (5) feet in depth.

Once all or a segment of the feature has been exposed, use of mechanical equipment will stop and the monitoring team will then be allowed sufficient time to enter the excavation and record all appropriate features. The minimum elements of feature recordation are the following:

- Digital photographs of plan, profile, construction detail shots and overview;
- Plan view scale drawings of feature;
- Profile view scale drawing of feature;
- Soil profile of adjacent excavation wall; and
- Complete sample of any artifacts encountered in direct association with the feature;
- Representative grab-sample of any artifacts encountered in soil horizons associated with the feature.

It is desirable, but not required to fully expose the feature either horizontally or vertically all at the same time. As segments (either horizontally or vertically) are exposed and recorded, they may be removed by the Contractor at the direction of the CRMT. Newly exposed segments of the feature shall be recorded using the

same standards and methods used to record segments of the feature exposed earlier. The CRMT will inform the CM's RE and the Site Foreman when recordation of any given segment of the feature has been completed and it may be removed. The CRMT Inspector will evaluate the adequacy of the recordation and after approval, it may be removed.

In some locations, it may be necessary to remove samples of wood used in the construction of the piers/wharves or bulkhead structures. This need will be communicated by the CRMT to the CM's Resident Engineer. If required, provisions will be made for the Contractor to stockpile the wooden elements of the feature after they have been removed from the excavation but before being removed from the site for disposal. The CRMT will be responsible for extracting and removing the necessary samples from the site. When this is completed, the CRMT will notify the CM's RE and the remaining materials may then be disposed of. It is anticipated that the disarticulated elements of these types of features may be stockpiled for no more than two days while the samples are being removed.

- **Meetings and Progress Reports.** During the course of archaeological monitoring, weekly progress reports will be produced by the CRMT's Inspector and provided to the CRM for review. The CRM will then distribute the progress reports to the CM's Resident Engineer, NJ TRANSIT, FTA, and then to the appropriate SHPO. The reports will be brief, and outline the activities carried out during that week and describe discoveries made, and the general status of the archaeological project. These reports will be submitted by the end of the week.

At the discretion of the FTA and SHPO, weekly on-site meetings may be held with the CM's RE and the CRMT to review procedures, progress and results of the project. Additionally, the CRM in consultation with the CM's Resident Engineer may request emergency meetings with the FTA and the appropriate SHPO (and/or NYCLPC) to review an evolving situation, such as the discovery of unanticipated remains, as further described in Chapter 5.

Cleared Site. Once the excavation has progressed below a depth at which archaeological remains may be anticipated, the CRMT Inspector will recommend that this portion of the Area of Potential Effect (APE) be declared a **Cleared Site** (location where there is no potential to impact potential archaeological resources and no further archaeological monitoring will be required. This recommendation will be forwarded to the CM's RE, and then to the Contractor, the FTA, SHPO and NYCLPC (as appropriate). Once all parties have agreed to this recommendation, the CM's Resident Engineer will notify the Contractor and work may proceed on site without the presence of archaeological monitors.

4.2.2 Reporting

The CRMT will produce an Archaeological Monitoring Report for the studies conducted in the APE within the specific contract package. This document that will be submitted to the CM's Resident Engineer, and then will be reviewed by the CRM, NJ TRANSIT, FTA, and the SHPO. Full results of the background research, field investigation, and laboratory analysis will be included in the report, together with a site interpretation, evaluation of eligibility for listing in the National Register, a catalog of all artifacts, and maps and photographs as appropriate.

Full results of the background research, field investigation, and laboratory analysis will be included in the report, together with a site interpretation, evaluation of eligibility for

listing in the National Register, a catalog of all artifacts, and maps and photographs, as appropriate. Any artifacts that require curation will be submitted at the direction of NJ TRANSIT to the appropriate repository.

4.3 Archaeological Field Testing Protocol

In certain project locations, archaeological testing prior to construction, where conditions allow, is recommended in the PA. The methodologies that may be employed during archaeological testing include:

- remote sensing;
- mechanical stripping of overburden; and
- hand cleaning of the strip blocks and recordation of archaeological features.

Each of these tasks is described in greater detail below and would be applicable to construction contracts in which field testing is recommended, as shown in **Table 4-1**.

4.3.1 Remote Sensing Survey

At specific locations, Ground-Penetrating Radar (GPR) and/or Geo-Probe may be employed to conduct non-invasive survey of the APE. The purpose of surveying with either of these devices is to provide as precise information as possible on the location of subsurface anomalies. These may indicate the presence and depth of architectural features such as walls or floors of earlier buildings, historic road surfaces (e.g., the Hackensack Plank Road in Hoboken, New Jersey) or burial shafts (e.g., Historic Cemeteries of Hudson County (HCHC) in Secaucus, New Jersey). GPR surveys will be conducted in 5-meter wide transects and a report of that survey with maps illustrating the location of any potentially significant subsurface features will be provided to the CRMT for use in further planning the location of archaeological excavations.

If it is determined by the CRMT, in consultation with the CRMT Inspector, necessary to recover more precise information on subsurface soil conditions prior to archaeological testing, continuous soils cores may be taken using Geo-Probe technology at sensitive areas defined by the CRMT. The soil cores will be analyzed by the CRMT's Geomorphologist for evaluation of the archaeological sensitivity of the soil strata documented in the cores. A brief report prepared by the Geomorphologist documenting the findings will be delivered to the CRMT.

4.3.2 Mechanical Excavation of Strip Blocks

It is anticipated that archaeological field investigations will require the use of mechanical equipment to strip overburden. The depth of mechanical stripping necessary will vary according to the review of existing geotechnical borings, or Remote Sensing Surveys conducted as part of the Archaeological Testing task. It can be anticipated, however, that in many locations, mechanical trenching may extend as deep as (10) feet below the current ground surface.

The location of archaeological test excavations will depend on the results of historic map analysis and the remote sensing survey(s), if conducted. Historic map analyses and an evaluation of specific site sensitivities will be presented in the Documentary Analyses Reports (DARs) (described in Chapter 2), documents prepared for each contract with areas of archaeological sensitivity, by NJ TRANSIT and available for

review. The information in this report will help the CRMT understand each site location, and the potential for archaeological materials in those areas. It will also help to develop site specific monitoring and/or excavation plans that will be supplied to the contractor as part of the construction contract bid documents.

If and where deep trenches are necessary, the Contractor will ensure that all OSHA requirements for confined space entry are observed. It may also be required that the Contractor provide trench boxes in these types of situations, to shore these excavations, or the contractor will expand and step areas excavated if possible to conform with OSHA regulations.. The trenches will be placed so as to maximize the information return on the resources under investigation. Specifically, they will be situated so as to expose exterior foundation walls, interior partition walls, flooring and any other cultural features and/or artifacts related to the function of the site under investigation. Mechanical excavations in the strip blocks will be limited to the removal of overburden and to exposing features and/or culturally-sterile subsoil. All mechanical excavations will be performed under the guidance and direct supervision of the CRMT. All work will be coordinated, prior to the work starting, with the CM's Resident Engineer and the CRMT.

4.3.3 Hand Excavations

Once fill has been removed from each strip block, all cultural features exposed within the trench will be cleaned by the excavation team using hand tools. All artifacts found *in situ* will have their provenience recorded and will be removed to the laboratory for processing. The minimum level of recordation will be the following:

- Digital photographs of plan, profile, construction detail shots and overview;
- Plan view scale drawings of feature;
- Profile view scale drawing of feature;
- Soil profile of adjacent excavation wall;

These data will be integrated into GIS mapping for the project, and will become part of the report to be produced documenting the archaeological studies in the location tested.

4.4 Laboratory Processing

The CRMT will undertake laboratory processing (discussed in more detail in Chapter 8) of all artifacts recovered. Laboratory processing consists of cleaning and cataloging all artifacts. The catalog will contain a complete description of each artifact and its known cultural affiliation and dating. Artifacts prone to degradation will be stabilized, and lithic artifacts will be treated with appropriate care to guard against damage to use-surfaces. The artifact assemblage will be culled of redundant and repetitive artifacts according to either New Jersey State Museum or New York Archaeological Council (NYAC) guidelines. Analysis of the field findings includes the use of numerical techniques and qualitative assessment of the artifacts to evaluate the nature of the artifact deposits identified during testing and their depositional contexts. The goal of the analysis is to determine the integrity of the deposits and their potential to provide new and significant information on the history or prehistory of the locale and region. Any recommendation for further archaeological investigations and/or mitigation efforts within the APE will be based on the results of this analysis.

If the artifacts are associated with a National Register-eligible archaeological site, a Deed of Gift agreement with the landowner(s) will be sought for the artifacts. If the landowner deeds the assemblage to the State, the artifacts will be curated and later transmitted to either the New Jersey State Museum or to a repository in New York State to be identified at a future date at the time of Final Report submission. If the landowner does not agree to relinquish ownership, the artifacts will be returned to the landowner.

4.5 Reporting

The CRMT will prepare all required reports. Specific reporting requirements will be specified in each contract specific package. In general, a Phase IB/II Archaeological Investigation Report will be produced at the conclusion of archaeological testing and laboratory analyses. The typical report will include full results of the background research, field investigation, and laboratory analysis, together with a site interpretation, evaluation of eligibility for listing in the National Register, a catalog of all artifacts, and maps and photographs, as appropriate. A draft report will be prepared and submitted to the CRM and the CM's RE for review. Once comments have been received, and the report revised by the CRMT, it will be submitted to FTA and the appropriate SHPO and/or NYCLPC for review. Comments from the review agencies must be addressed by the CRMT in a final report.

4.6 Mitigation

The mitigation commitments and Data Recovery guidelines for this task are presented in Chapter 7 of this document. Any public involvement, interpretation, and/or education elements required as part of the mitigation efforts are presented in Chapter 9.

5 UNANTICIPATED DISCOVERIES PLAN

5.1 Objective of the Unanticipated Discoveries Plan

The general requirements for Unanticipated Discoveries for Archaeological Properties including Human Remains procedures are summarized in Exhibit O of the Programmatic Agreement. This chapter of CRMP provides the protocols that will be followed in the event that new archaeological resources, including human remains, are discovered during the construction activities. These protocols will be in accordance with the following New York and New Jersey standards and guidelines:

- New York Archaeological Council Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State (1994);
- New York State Historic Preservation Office (NYSHPO) Phase I Archaeological Report Format Requirements (2005);
- New York City Landmarks Preservation Commission (LYCLPC) Guidelines for Archaeological Work in New York City (2002);
- New Jersey State Historic Preservation Office (NJSHPO) Guidelines for Phase I Archaeological Investigations: Identification of Archaeological Resources (2003);
- New Jersey State Historic Preservation Office Guidelines for Preparing Cultural Resources Management Archaeological Reports (2000);
- New Jersey Cemetery Act of the New Jersey Statutes, Title 8A (Cemeteries); and,
- Title 26, Title 8A:5-20 of the New Jersey Statutes Annotated (N.J.S.A.) and Chapter 5 of the New Jersey State Sanitary Code for disinterment, reinterment and cremations.

5.2 Personnel

The personnel who will be involved in the event an unanticipated discovery is found during construction activities are identified in Chapter 1 of this CRMP. The Contractor will be responsible for complying with all of the required elements in the contract specific Unanticipated Discoveries Plan, under the direction of NJ TRANSIT's Construction Manager's Resident Engineer, and in consultation with NJ TRANSIT's Cultural Resources Manager (CRM).

5.3 Archaeological Resource Identification/Training

The identification of archaeological resources requires basic training to recognize potential sites that may be unearthed during excavation. The CRMT will provide training to the CRMT, CM's Resident Engineers, construction supervisor and other appropriate construction staff prior to the initiation of construction excavation activities. The purpose of this training will be to:

- Review NJ TRANSIT's commitments regarding archaeological resource compliance;
- Provide an overview of the project specific resources within the APE, so that both the construction contractor and project personnel will be aware of the kinds of unanticipated archaeological resources that may be encountered in the field;

- Emphasize the exact procedures to be followed if an unanticipated discovery is identified; and,
- Make notifications required if an unanticipated discovery is identified during construction.

The training will be designed to ensure that project personnel and construction contractors understand the extent of the archaeological research and/or field activities that have been performed at the contract site and are fully aware of the distinction between sites that have been cleared (i.e. have already undergone data recovery and have previously been cleared for construction by SHPO) and new discoveries encountered during the construction process.

5.4 Archaeological Feature Discoveries

Archaeological features may be discovered by project or contractor personnel. The following protocols will be adhered to in the event of a discovery of features during construction.

A. Stop Activities

When an unanticipated archaeological discovery is uncovered by any project personnel (Contractor's, CM's RE, NJ TRANSIT, CRMT), they shall immediately notify the Resident Engineer who will issue a "Stop Work" order. The contractor's construction supervisor will stop all activity within the immediate vicinity of the discovery, unless safety concerns are an issue. Specifically, the construction crew will stop at the spot where the find was uncovered and not resume construction until cleared to proceed by the CM's Resident Engineer. This is necessary to provide the opportunity to determine if the feature requires archaeological investigation. The Contractor's Site Foreman will fence off the archaeological discovery location to ensure the site is secure. Any discovery made on a weekend will be protected until all appropriate parties are notified of the discovery.

B. Make Notifications

After construction activity has stopped the Resident Engineer will immediately notify the CRM and NJ TRANSIT. The CRM will visit the site or otherwise coordinate an on-site archaeological consultation. The RE will indicate the location and date of the discovery on the project plans. The site will be flagged and fenced as off-limits for work, but will not be identified as an archaeological site per se to protect the resource. In addition, the site will be secured to protect the potential significant resource.

NJ TRANSIT will immediately notify the appropriate SHPO (and other appropriate parties) of the find.

C. Initial Determinations

1. NJ TRANSIT will direct the CRMT to begin a more detailed assessment of the find's significance and the potential project affects. The CRMT will determine the nature and extent of the archaeological deposits.
2. The CRMT will conduct a physical review and will test the site area as necessary. Since the area may have already been partially disturbed by construction activities, the objective of any archaeological resource

investigations will be to recover data quickly for an evaluation of the site's significance to be made.

The CRMT will determine based on the features found, the unanticipated discoveries research potential whether the site is significant or not. The recommendation of significance will be presented to the CRM, and a coordination/consultation meeting will be held, either via telephone or on site.

3. The CRM will notify NJ TRANSIT of their findings and recommendations, whether the remains are assessed not be significant and request approval for construction to proceed or describe a proposed scope of work for evaluating the significance of the find and evaluating the project effects.
4. NJ TRANSIT will then convey this information to the SHPO and a meeting may be held at the discretion of NJ TRANSIT to discuss the options and recommendations.
5. If the resource is determined to be significant, the CRM in consultation with the appropriate SHPO (and other appropriate parties) will develop a site specific data recovery plan.
6. Upon direction by NJ TRANSIT, the CRM and the CRMT will then implement the site specific data recovery plan.
7. Once field investigation activities are complete, a meeting or site visit will be held with NJ TRANSIT, the appropriate SHPO and other appropriate parties to review the work accomplished.
8. SHPO will notify NJ TRANSIT that the terms of the fieldwork portion of the mitigation plan has been satisfactorily completed. NJ TRANSIT will notify the Contractor that the site has been cleared and excavation and/or construction may resume.

5.5 Human Remains Discoveries

- A. The treatment of any human remains encountered during construction will be guided by the policy statement adopted by the Advisory Council on Historic Preservation ([*Advisory Council*]; see *Treatment of Burial Sites, Human Remains and Funerary Objects, Advisory Council 2007*), and by the relevant state laws and guidelines. The Advisory Council policy statement recommends that, to the extent allowed by law, treatment of human remains should adhere to the following principles:
 1. All burial sites, human remains, and funerary objects would be treated with respect and dignity;
 2. Consultation should be conducted early to allow the federal agency to make informed and defensible decisions regarding the treatment of burial sites, human remains, and funerary objects;
 3. Native American tribes Native Hawaiian organizations should be consulted in the treatment of their ancestors;
 4. Human remains and grave goods should not be removed or otherwise disinterred unless absolutely necessary, and only following consultation;

5. Disinterment, when necessary, should be done carefully, respectfully, and completely, in accordance with proper archaeological methods;
 6. In making decisions regarding the treatment of burial sites, human remains, or funerary objects the federal agency must comply with applicable federal, tribal, state, or local laws;
 7. Federal agencies should develop plans for inadvertent discovery of burial sites, human remains, and funerary objects through consultation;
 8. If the disposition of human remains, and funerary objects is not legally prescribed, federal agencies should proceed following the rights of lineal descendants and, if none, the descendant community.
- B. The procedures that will be followed in the event that potential skeletal material is discovered during construction are as follows:
1. Stop Activities

If any personnel on the construction site identify potential skeletal remains or indicators of potential skeletal remains such as mortuary monuments such as gravestones, the contractor's on-site construction supervisor will stop all construction work that could affect the integrity of the remains. The remains will not be touched, moved, or further disturbed until assessed by the Cultural Resource Manager. The CRM will immediately notify the Resident Engineer of an unanticipated discovery. The Resident Engineer will direct a *Stop Work* order to the Contractor's Site Foreman to flag or fence off the discovery location and direct the Contractor to take measures to ensure site security. Any discovery made on a weekend will be protected until all appropriate parties are notified of the discovery. The Contractor will not restart work in the area of the find until the Resident Engineer has granted clearance.
 2. Make Notifications

The Resident Engineer will indicate the location and date of the discovery on the project plans. NJ TRANSIT will immediately notify the FTA and NJSHPO or NYSHPO of the find, the Municipal Police Department, and the Northern Regional Medical Examiners Office.
 3. Initial Determinations

The Cultural CRMT will determine if the skeletal remains are human; this may require consultation with an on-call, local physical anthropologist (part of the CRMT). If the CRMT determines the skeletal remains to be non-human and no other archaeological features that require evaluation are present, the Resident Engineer will notify the contractor's construction supervisor that construction may proceed.

If the human remains, after examination by county medical staff and law enforcement personnel, are determined to be related to a criminal matter, the project activities in this location will cease and the matter addressed by the local authorities. If the find is determined not to be a criminal matter, a site specific disinterment/reinterment plan will be developed in consultation with the lineal descendants or descendant community (based upon Exhibit

L of the PA). FTA, NJSHPO or NYSHPO, and other relevant agencies will review and approve the plan prior to implementation.

4. Site Protection/Exhumation and Treatment of Human Remains

In consultation with FTA and NJSHPO or NYSHPO, reasonable efforts will be made to avoid adversely affecting the remains. However, where it is not practicable, exhumation activities will require consultation with the descendant community and compliance with the New Jersey Cemetery Act.

Consultation with the New Jersey Cemetery Board (Board), the descendant community, and the New Jersey State Attorney General's office will be conducted prior to initiating exhumation, and will include:

- Prepare and publish advertisements in local newspapers, in order to notify any descendants, descendant groups, or interested parties;
- Attend meetings with descendants, descendant groups, or interested parties.
- Attend meetings with the Cemetery Board;
- Attend hearings with the New Jersey State Attorney General;
- Prepare draft documentation of the proposed work for NJ TRANSIT to submit to the Board regarding the proposed work;

If avoidance is not possible any human remains will be carefully exhumed, following the general procedures specified in the PA, but modified to specifically address the needs at the particular location, as noted above. Exhibits L and O of the PA establish the appropriate exhumation process and subsequent treatment of skeletal material. In all cases, due care will be taken in the excavation and subsequent transport and storage of the remains.

Construction in the area will not recommence until all exhumation work is complete. A management summary will subsequently be prepared by the CRMT for review by the CRM, NJ TRANSIT and then NJSHPO or NYSHPO. A final technical report, to be prepared by the CRMT, will be filed within one year of the completion of fieldwork. The CRMT will be responsible for addressing all of the comments and concerns expressed by FTA and NJSHPO during their review process.

5.6 Examples of Potentially Significant Archaeological Features That May Be Encountered During Construction Activities

Pre-Contact Features and Artifacts

- Large stone implements (e.g., axes, gouges)
- Fire pits/hearths—reddened/burnt stone clusters with charcoal and blackened soil
- Shell middens—dense layers of oyster, clam, scallop, etc.
- Lithic workshops—dense layers of chipping debris
- Burial pits (darkened soil, textile, shell-lined) and/or human remains
- Post molds and post holes, indicative of dwellings

- Dugout canoes

Historic Features and Artifacts

- Wooden pilings, planking, flooring with and without nails, hinges, etc.
- Timber cribbing
- Waterfront features – piers, retaining walls, bulkheads, docks, ship wrecks
- Stone (fieldstone, cut granite, rubble) walls and flooring - with and without mortar or other adhesive materials
- Brick walls and flooring - with and without mortar or other adhesive materials
- Concrete walls and flooring—verify aggregate and reinforcement materials for age
- Privies, Cisterns, Wells, Trash Pits—dense layers of bottles, dishes, animal bones, and other household items in soil, with or without stone/brick/concrete lining
- Large iron or other metal objects, including farm implements (e.g., hoes, rakes, plows, sleigh parts).
- Transportation-related objects—wheels, tracks, trolley supports
- Gravestones, marked granite, slate pieces, coffin remnants and hardware
- Non-human Skeletal Features – discrete deposits/concentrations of non-human skeletal material that is indicative of human occupation, i.e., trash deposits of food waste, etc.
- Human Remains
- Shipwrecks

6 CONSTRUCTION AND ARCHAEOLOGICAL PHASING PLAN

6.1 Introduction

A Construction and Archaeology Phasing Plan will be prepared for each construction contract that requires archaeological monitoring and field testing, in accordance with obligations included in Exhibit P of the Programmatic Agreement (PA). It will include mapping/Geographic Information System (GIS) data on the locations of known archaeologically sensitive areas, areas that contained archaeological resources or were sensitive for archaeological sites and have been cleared (only human remains will be assumed to be of value in “cleared” areas), archaeological sites that have been evaluated and found not to meet Historic Properties criteria, cemeteries, and Archaeological Properties (archeological resources that meet Historic Properties Criteria).

The phasing plan will be designed to correlate construction activities with the anticipated activities associated with the archaeological investigations required in the particular contract. The plan may be reviewed and amended (as appropriate) as individual construction contract packages and their respective schedules are refined or modified.

The implementation of this Construction and Archaeological Phasing Plan requires the active participation of a number of parties, each with varying roles and responsibilities. The Contractor will be responsible for complying with all the required elements in the contract-specific phasing plan, under the direction of NJ TRANSIT’s Construction Manager’s Resident Engineer, and in consultation with NJ TRANSIT’s Cultural Resources Management Team (CRMT).

As described below, common to each specific Construction and Archaeological Phasing Plan will be an explicit set of guidelines and protocols to assure timely and accurate coordination among NJ TRANSIT, the appropriate state and/or federal review agencies, the Contractor and the CRMT.

6.2 Generalized Phasing Plan Timeline

6.2.1 Project Initiation Meeting

- A project Initiation Meeting will be held at the offices of NJ TRANSIT within one month after the award of contract for each construction package;
- The CM’s Resident Engineer, the CRM, the Contractor and the CRMT will be present;
- Contractual agreements, methodologies, mileposts and deadlines will be presented and discussed as necessary.

6.2.2 30-Day Notice of Initiation of Work

- Minimally, 30-days’ notice will be provided by the Contractor to the CM’s Resident Engineer and the CRM of when construction work will commence;
- Key cultural resources personnel have 30 days for all necessary preparations for their respective tasks (site set up, Health & Safety training, etc.).

6.2.3 Start Work

- Cultural resources field investigation crews (comprised of the CRMT) will be on site on the day construction work is scheduled to begin;
- The CRMT will produce weekly progress reports for the duration of the field investigations, as may be required under the specific construction contract phasing plans. These reports will be submitted to the CRMT Inspector and the CM's Resident Engineer;
- The CRMT will be available for all on-site meetings that may be required during the course of the field investigations.

6.2.4 Stop Work

- As may be stipulated in specific construction contract phasing plans, the CRMT will be available for on-site or off-site meetings with the CM's Resident Engineer, the CRMT Inspector, the CRM and appropriate state or federal agencies at the end of the respective field investigations;
- All of the CRMT personnel and equipment will be removed from the construction site within 10 working days of written receipt that review agencies are in agreement that all cultural resources concerns identified in the PA have been adequately addressed.

6.2.5 Resumption of Construction

- Construction will resume once the CRMT notifies the CM's Resident Engineer that archaeological documentation of any features identified is completed and once SHPO concurs that no significant archaeological resources will be impacted.
- In the event of unanticipated discoveries or requirements by the SHPO for data recovery excavations exceeding the methods specified in the archaeological monitoring plan, extended work stoppage may be necessary prior to resuming construction. The length of time required to complete archaeological investigations will be determined once the FTA and SHPO have detailed the scope of work required.

6.2.6 Reporting

- Unless specified otherwise in specific construction contract phasing plans, the CRMT will have six months starting from the last day of the field investigation to complete a draft report on the findings and interpretations of their respective field investigations. Copies of this draft report will be prepared and submitted to the CRM who will distribute it for internal review.
- The CRMT will submit the the report NJ TRANSIT, FTA and SHPO for their review and comment.
- The CRMT will be responsible for responding to agency comments and providing a Final Report. Final copies will be provided to NJ TRANSIT, as well as one digital copy.

7 DATA RECOVERY PLAN

7.1 Introduction

If any Archaeological Property is going to be impacted as a result of construction activities, means to avoid, minimize, or mitigate the impacts must be considered. If the impacts cannot be avoided, a data recovery plan to mitigate the adverse effect to the Archaeological Property will be developed. The following sections detail the protocol that will be followed in the event that a Data Recovery investigation is determined to be necessary as per the requirements of Exhibit M of the Programmatic Agreement.

7.2 Steps in the Data Recovery Planning Process

Data Recovery investigations may be required at any of the locations identified in this document as sensitive to archaeological resources. In addition, Data Recovery investigations may be required at areas where there was no known sensitivity, but where an unanticipated discovery revealed a significant archaeological site that could not be avoided.

However, it cannot be known whether a Data Recovery investigation will be necessary at any particular location until archaeological investigations have been initiated at that location. If any significant archaeological sites are discovered within contract package impact areas, and these cannot be avoided, consultation must begin among the CRMT and the review agencies to mitigate the impacts resulting from construction activities. Involved parties will include: NJ TRANSIT, the Construction Manager (CM), Federal Transit Administration (FTA), New Jersey State Historic Preservation Office (NJSHPO) if the site is in New Jersey; New York State Historic Preservation Office (NYSHPO) if the site is in New York; and the New York City Landmarks Preservation Commission (NYCLPC) as appropriate. In addition, the Advisory Council on Historic Preservation (ACHP) may need to be notified if the parties cannot agree on an approach to the Data Recovery program.

It is assumed that when any archaeological materials are uncovered within the construction limits of any contract package, all construction work will stop immediately in that location (upon a formal **Stop Work** order from the CM's Resident Engineer). No work will resume in that location until all archaeological documentation and investigation efforts have been completed, and the Contractor is formally notified by the CM's Resident Engineer that work can resume.

The required steps in the consultation process towards determining the need for a Data Recovery program and the completion of a Data Recovery effort are as follows:

1. CRMT identifies archaeological deposits believed to be eligible for listing in the National Register of Historic Places (NR) during the course of Phase IB/II archaeological investigations or during archaeological monitoring;
2. CRMT notifies the Construction Manager (CM) that a NR-eligible archaeological resource is present on site;
3. The limits of the significant deposits are marked through consultation between the CRMT and the CM. The CM will then notify the Contractor that no further construction activities are to take place within the significant site limits until notified otherwise;

4. The appropriate agency, NJSHPO or NYSHPO, and/or NYCLPC is notified of the finding;
5. Consultation between the SHPO, CM, and the CRMT begins, with an inspection of the site by all parties;
6. The SHPO makes NR eligibility recommendation;
7. The CM determines whether avoidance of the significant resource is feasible;
8. If avoidance is not an option, the CRMT develops a Data Recovery Plan;
9. The Data Recovery Plan is submitted to CM for review and submission to FTA, then to the appropriate SHPO for concurrence;
10. The Data Recovery Plan is initiated once concurrence from SHPO is obtained. The work will be undertaken by the CRMT. The work will be overseen by the CRMT Inspector who will be on-site at times during excavation. Periodic site visits by the CM and SHPO may be scheduled during the course of the investigation;
11. A site visit will be scheduled for the SHPO to view the completed Data Recovery, and to meet on-site with the PI, CRMT, and the CM. The purpose of this site visit and field meeting will be to ensure that all parties are in agreement that the fieldwork has been completed in accordance with the appropriate agency requirements.
12. The Contractor will be notified by the CM that construction may resume in the former site area once SHPO concurs that the terms of the Data Recovery Plan were met and that adverse effects to the site were successfully mitigated;
13. A Data Recovery Report will be prepared by the CRMT for submission to the CRM, NJ TRANSIT, FTA, and the appropriate SHPO for review and concurrence.

7.3 Developing the Data Recovery Plan

The Data Recovery Plan developed by the CRMT will provide a brief summary of the findings made during the Phase IB/II investigation or archaeological monitoring and the research potential of the materials uncovered. This will be followed by a detailed discussion of the site-specific research issues that the Data Recovery effort will address, the types of data that will be collected to address these questions, strategies and testing methodology for the recovery of the necessary data, methods of analyses and interpretation, and any other necessary information deemed appropriate by the NJSHPO and/or the NYSHPO and other involved state and federal agencies. A public education program will also be included in the Data Recovery investigation to disseminate the recovered information to the archaeological community and the public (see Chapter 9 for more information).

7.4 Guidelines for Plan Preparation and Execution of Data Recovery Investigations

All Data Recovery investigations in New Jersey will follow the guidelines established in the *Guidelines for Preparing Cultural Resources Management Archaeological Reports* (NJSHPO 2000). For New York, all Data Recovery investigations and activities will follow the *Standards for Cultural Resource Investigations and the Curation of*

Archaeological Collections in New York State (New York Archaeological Council 1994) as well as the NYSHPO's (2005) guidance for Data Recovery reports found in: *New York State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements*.

Whether located in New Jersey or New York, Data Recovery plans and investigations will follow the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48 CFR 44716) and the Advisory Council on Historic Preservation's 1980 *Treatment of Archaeological Properties*. The plan(s) will be developed and implemented by a Principal Investigator (member of the CRMT) who meets the Secretary of the Interior's Professional Qualifications Standards (48 CFR 44738-44739). The Data Recovery report will also follow the Secretary of the Interior's Format Standards for Final Reports of Data Recovery Programs (42 CFR 5377-79).

7.5 Review of the Plan and Reporting

In light of the fact that the Data Recovery may be required within the context of an on-going construction/excavation site, the appropriate SHPO will be requested to respond to the submission of the Data Recovery Plan within three (3) working days of receipt of that plan. The Data Recovery field investigation will include all pertinent information available from the archaeological site to address the research questions established in the plan. Detailed laboratory analysis will be performed on recovered cultural materials, followed by cataloguing and preparation for curation. A complete draft Data Recovery Report will be submitted to NJ TRANSIT within twelve months of completion of the field investigation. This report will be reviewed by the CRM and the CM and returned to the CRMT for revisions. Once revisions have been made, the draft report will be submitted to FTA and either the NJSHPO or NYSHPO (depending upon the location of the site) for review. The CRMT is responsible for responding to the review agencies comments and producing a final document that meets all requirements noted above.

8 ANALYSIS AND CURATION OF MATERIALS AND RECORDS PLAN

8.1 Introduction

This chapter of the CRMP provides guidance on how to treat archaeological materials if they are recovered during archaeological monitoring or testing, and how to handle the records associated with those activities.

Specific Analysis and Curation of Materials and Records Plan will be developed by NJ TRANSIT's Cultural Resources Manager (CRM) and reviewed and approved by the Federal Transit Administration (FTA), as well as by the appropriate State Historic Preservation Office (SHPO).

8.2 Overview of the Analysis and Curation of Materials and Records Plan

All archaeological materials and records resulting from archaeological survey, evaluation, and data recovery investigations will be subjected to laboratory analysis, conservation, and curation (in accordance with the appropriate SHPO guidelines). Laboratory processing and analysis will include cleaning, identification, and cataloging of any recovered artifacts and ecofacts, including but not limited to cataloging and processing of select soil control and feature flotation samples, specialized analyses and interpretation of organic remains (including but not limited to radiocarbon dating) and in-depth analysis of the spatial distributions of archaeological materials and features. Appropriate conservation measures for artifacts will be undertaken as necessary.

The disposition of archaeological remains and records will be completed following the completion of all laboratory analyses and conservation measures. NJ TRANSIT will identify an appropriate repository for curated archaeological collections in consultation with either the NJSHPO and/or NYSHPO. For collections recovered from archaeological sites in New Jersey, the New Jersey State Museum's 2005 draft guidelines, *Curation Guidelines: Preparing Compliance Archaeological Collections for Submission to the NJ State Museum*, will be followed. For sites in New York State, artifacts and records will be curated according to the Standards for the Curation of Archaeological Collections, found in Section 7 of the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (NYAC 1994).

9 PUBLIC INTERPRETATION PLAN

9.1 Introduction

The CRMT, must prepare a specific Public Interpretation plan following these guidelines if they undertake Data Recovery archaeological investigations as part of THE Project. Specific plans developed by NJ TRANSIT's Cultural Resources Manager (CRM) will be reviewed and approved by the Federal Transit Administration (FTA), as well as by the appropriate State Historic Preservation Office (SHPO).

9.2 Overview of the Public Interpretation Plan

Archaeological investigations associated with public construction projects typically draw substantial interest from the local community, and it is important to involve the public in these studies, if at all possible. The purpose of public outreach/public interpretation is to provide information on the archaeological investigations and data recovery efforts to those interested. The intention in the PA is that if a Contractor has uncovered a significant archaeological site (one that has been determined to be eligible for listing in the National Register of Historic Places (NR)), and that site is subject to a full Data Recovery investigation (Chapter 7), then a Public Interpretation Plan should be developed in association with that effort.

Public outreach may take the form of publication of a brochure or non-technical report, public lectures, information kiosks, or web page, but is not limited to those formats. The specific form that public information and interpretation takes will depend on the nature of the resource and the design of the Data Recovery operation.

Coordination will be required in the development of a Public Interpretation plan. If a Contractor uncovers a significant site, then a meeting should be held among the Contractor and the CRM, as well as the Construction Manager. The purpose of this meeting would be to discuss options available for Public Interpretation. A plan for the proposed Public Interpretation approach should be included in the Data Recovery Plan and the Analysis of Materials and Curation Plan (Chapter 8 of this CRMP), which will be submitted to the appropriate SHPO, and agencies, for review and comment. The development of a full Data Recovery Plan and program, if necessary, will require extensive coordination and cooperation between the project team and the review agencies.

10 DESIGN REVIEW

10.1 Introduction

During Final Design, NJ TRANSIT, in consultation with NJSHPO and NYSHPO, will develop ARC component designs and specifications that will be visually and contextually compatible with these Historic Properties, as to not impair their integrity or alter their character-defining features, or cause Adverse Effects. Work will be in keeping with the intent of *The Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68)*. As the ARC project design advances, proposed plans will be submitted to NJSHPO and NYSHPO for review at 60 percent and 90 percent completion stages. Thirty percent (30 percent) plans were previously submitted to NJSHPO and NYSHPO upon the completion of Preliminary Engineering.

10.2 Objective of Design Review

Built Properties, which may consist of individual structures and sites, as well as historic districts, can be affected by visual impacts as well as physical impacts. Design specifications will be developed to ensure the following:

- Project elements that physically affect Built Properties are designed in a manner to minimize damage, removal, and loss of view of significant architectural features and to complement the existing historic built fabric; and
- Above-ground visible project elements are designed in a manner consistent with the Built Properties near them. This will include an assessment of the viewshed to and from Built Properties and new project elements to determine any potential contextual issues associated with new construction and enable project planners to prepare design specifications accordingly. Above-ground facilities for the project will consist of the following types of structures, which may have the potential to affect the visual context or historic setting of a Built Property:
 - Entrances to subway stations (including elevators, stairs, and escalators)
 - Emergency egress to subway stations
 - Ventilating structures for stations and/or tunnels
 - Cooling Towers
 - Other ancillary structures to be constructed above ground

The development of the project's design specifications will occur during the final engineering phase, once the locations of project facilities are exactly defined and their relationship with nearby Built Properties assessed. The design specifications will address not only how such facilities would be designed, but also the process by which their design is to be coordinated with the signatories to the Programmatic Agreement. Close coordination and consultation will be undertaken with NJSHPO, NYSHPO, and NYLPC, as appropriate.

The specifications will be prepared pursuant to *the Secretary of the Interior's Standards for the Treatment of Historic Properties (37 CFR Part 68)*. They are expected to consist of the following guidelines for design as specified in the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for

Rehabilitation, which pertain to the modification of Built Properties and new construction:

- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the historic property or district. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, and proportion, and massing to protect the integrity of the property and its environment.
- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Based on these standards, new construction will be planned to reflect the design trend and concepts of contemporary architectures so as to distinguish historic building fabric from new. New construction will also be designed to reflect the architectural characteristics, visual context, and historic setting of the Built Property including:

1. Orientation on the site
2. Setback from the street
3. Building envelope
4. Size, scale and massing
5. Roof shape
6. Façade rhythm
7. Building proportions
8. Architectural details
9. Interior treatments
10. Ornamentation
11. Structural system
12. Exterior and roof cladding
13. Texture and color of materials

APPENDIX A

SECTION 106 PROGRAMMATIC AGREEMENT

PROGRAMMATIC AGREEMENT

Among

**The Federal Transit Administration (FTA)
The Advisory Council On Historic Preservation (ACHP)
The New Jersey Transit Corporation (NJ TRANSIT)
The New Jersey State Historic Preservation Officer (NJSHPO)
and
The New York State Historic Preservation Officer (NYSHPO)**

Regarding The

**Access to the Region's Core Project (ARC) in
Hudson County, New Jersey and New York County, New York**

WHEREAS, NJ TRANSIT is proposing to construct ARC, a project that will improve commuter rail service between the states of New Jersey and New York;

WHEREAS, NJ TRANSIT is the ARC sponsor and FTA is serving as the ARC lead federal agency pursuant to the National Environmental Policy Act (NEPA, codified as 42 USC 4321 *et seq.*), and is the federal agency responsible for compliance with Section 106 of the National Historic Preservation Act (codified at 16 USC § 470f, and herein "Section 106");

WHEREAS, FTA, NJ TRANSIT, along with NJSHPO and NYSHPO, as the result of a consultative process in accordance with Section 106, have determined that it is appropriate to enter into this Programmatic Agreement (PA), pursuant to Section 800.14(b) of the regulations implementing Section 106 (codified at 36 CFR Part 800, and herein the "Section 106 Regulations"), which will govern the implementation of ARC and satisfy FTA compliance with Section 106 as all historic properties and effects of the undertaking cannot be fully evaluated in advance of FTA's approval of funding for ARC;

WHEREAS, FTA has invited the Advisory Council on Historic Preservation (ACHP) to participate in the Section 106 process for ARC; and the ACHP has accepted;

WHEREAS, FTA has demonstrated compliance with Section 106 and NEPA, pursuant to 36 CFR § 800.8, through the preparation of a Final Environmental Impact Statement (FEIS), for ARC; and consultation with NJSHPO, NYSHPO and other consulting parties (Amtrak, New York City Landmarks Preservation Commission, Township of Kearny, Hudson River Park Trust, Pennsylvania Railroad Technical and Historic Society and Hackensack Riverkeeper) relative to the latter parties' participation in the Section 106 process;

WHEREAS, through the process conducted in preparing the FEIS, FTA has determined that ARC may have an effect on historic properties under Section 106. Historic properties may include any prehistoric or historic district, site, building, structure, or any object included in or eligible for inclusion in the National Register of Historic Places (Historic Properties or Historic Properties Criteria);

WHEREAS, pursuant to Section 106 regulations, FTA and NJ TRANSIT, in conjunction with NJSHPO and NYSHPO, identified an Area of Potential Effects (APE) for the ARC project, and determined that the APE will be the areas where potential effects on Historic Properties caused by ARC may occur (see **Exhibits A - D**);

WHEREAS, generally, Historic Properties can be categorized as archaeological resources or built historic properties (see 36 CFR § 800.16(1)); and this PA specifies the appropriate approaches for archaeological resources and built historic properties in the ARC APE separately, due to the different issues presented by each category;

WHEREAS, Historic Properties within the historic APE were identified and evaluated by NJ TRANSIT in consultation with FTA, NJSHPO and NYSHPO, as documented in the FEIS. As part of this process, FTA and NJ TRANSIT identified properties that appear to meet the criteria for listing on the New Jersey State, New York State and National Registers of Historic Places provided in the 36 CFR Part 60.4 (herein "Historic Properties Criteria"), and for which NJSHPO and NYSHPO have rendered determinations of eligibility and, therefore, qualify for Section 106 protection. FTA, in consultation with NJSHPO and NYSHPO, has determined that these properties are Historic Properties to be considered under Section 106;

WHEREAS, as documented in the FEIS, FTA and NJ TRANSIT, in consultation with NJSHPO and NYSHPO, identified 88 Built Historic Properties in the ARC APE that qualify for Section 106 protection. These properties are described in FEIS Chapter 7 (**see Exhibits A and B**);

WHEREAS, as documented in the FEIS, FTA and NJ TRANSIT, in consultation with NJSHPO and NYSHPO, identified areas with the potential to contain Archaeological Resources in the ARC APE, and identified archaeologically sensitive areas and archaeological resources in which construction might occur. These properties are described in FEIS Chapter 6 (**see Exhibits C and D**);

WHEREAS, the Secaucus Potter's Field was determined to be eligible for listing on the National Register of Historic Places on April 24, 2008. Historic documentation shows that three cemeteries, including the Secaucus Potter's Field, were present on the Hudson County institutional complex, Laurel (Snake) Hill, and that these cemeteries are collectively referred to as the Historic Cemeteries of Hudson County;

WHEREAS, this PA sets forth measures that shall be implemented for identified or any other Built Historic Properties or archaeologically sensitive areas within the current or future-modified APE;

WHEREAS, FTA has completed a reasonable and good faith effort to identify and contact by letter the appropriate Native American tribes and groups (the "Tribes") that could attach religious or cultural significance to sites within the ARC APE, and upon which ARC could have an effect (**see Exhibit E**).

WHEREAS, the Eastern Shawnee Tribe of Oklahoma does not wish to participate as a consulting party but does wish to be notified and further consulted if items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) are found during construction;

WHEREAS, FTA and NJ TRANSIT shall complete a reasonable and good faith effort to identify, contact, and seek the involvement of any descendant groups or communities associated with the areas potentially sensitive for human remains that may be affected by ARC;

WHEREAS, this PA was developed with appropriate public participation during the NEPA public comment period pursuant to Subpart A of Section 106 Regulations, and a copy of this agreement was included in and distributed with the FEIS. The public shall be duly notified as to the execution and effective dates of this PA through the issuance of the FEIS and FTA Record of Decision for ARC;

NOW, THEREFORE, FTA, ACHP, NJ TRANSIT, NJSHPO and NYSHPO agree that ARC shall be implemented in accordance with the following stipulations to ensure that potential effects on Historic Properties shall be taken into account.

STIPULATIONS

FTA WILL INCLUDE THE OBLIGATIONS SET FORTH IN THIS AGREEMENT AS PART OF THEIR RECORD OF DECISION AND A CONDITION OF FTA APPROVAL OF ANY GRANT ISSUED FOR CONSTRUCTION OF ARC TO ENSURE THAT THESE MEASURES WILL BE IMPLEMENTED AS PART OF THE COMPLIANCE WITH THE SECTION 106 PROCESS AND THE SUBSEQUENT PLANNING, DESIGN, AND CONSTRUCTION OF ANY APPROVED ARC ALTERNATIVE.

I. CULTURAL RESOURCE MANAGEMENT TEAM

NJ TRANSIT's design team will include a qualified Cultural Resources Management Team (CRMT) for the project. The CRMT shall be comprised of a team of personnel meeting *The Secretary of the Interior's Professional Qualifications Standards* (36 CFR 61 Appendix A) (hereinafter cited as "qualifications") with appropriate experiences and background in Historic Properties (including History, Architectural History, Historic Architecture, and Archaeology, as appropriate). CRMT members must meet qualifications pertaining to Historic Built Properties and Archaeological Resources depending upon their assignment (i.e., CRMT members advising or consulting on archaeology must meet the qualifications pertaining to archaeological resources). NJ TRANSIT will retain a CRMT throughout the period of design and active construction that might impact historic or archaeological resources or as otherwise agreed to by NJ TRANSIT and the NJSHPO/NYSHPO. The CRMT will establish a single point of contact for Historic Built Properties and Archaeological Resources, respectively.

The CRMT will include on-site field representative(s) (hereinafter cited as "inspector"), as a member(s) of the team. The inspector will also meet the appropriate qualifications (dependent on his/her assignment, i.e., built property or archaeology) as noted above. The inspector will be on-site at all times when there is a potential for Historic Properties (including Built Properties and Archaeological Resources) to be affected by the construction and will undertake responsibility to monitor all construction activities that may affect historic resources. For archaeological resources, the inspector will be on-site, for all ground intrusive activities throughout the entire project corridor. In addition, a NJ TRANSIT Engineer will be assigned to inspect the same location concurrently with the CRMT's inspector. The inspector will obtain, review and hold on site, any documents, including historic survey reports, for historic properties that may be affected by the project. The inspector will have on file at the project site clear maps that indicate areas of potential archaeological sensitivity. The inspector will brief the on-site contractor of the stipulations outlined in this PA and any documents that pertain to the protection of historic resources. A requirement to cooperate with the CRMT will be included in all design and construction contracts for the Project. In case of multiple inspectors, a chain of command will be established by the CRMT for all field activities.

The Consultant Contractor for the project shall develop and implement a Cultural Resources Management Plan (CRMP), written by a professional meeting the qualifications cited above, that identifies the necessary engineering and scientific methods, practices, procedures, and resources essential to be employed throughout the design and construction to assure conformance with the applicable requirements of federal and state guidelines that provide protection for built historic properties and archaeological resources. The CRMP shall incorporate any plans and/or agreements already developed by NJ TRANSIT. The CRMP shall be subject to review and comment by FTA, ACHP, NJSHPO and NYSHPO.

The Contractor and CRMT are under contract with NJ TRANSIT. The CRMT will be retained under a consultant contract to advise and consult on issues relating to Built Historic Properties that may be affected by the Project. The Contractor will be retained under a construction contract to build the project. All directives to the contractor or consultant will be given by NJ TRANSIT's Chief Engineer (e.g., any recommendation made by the CRMT must be made first to the NJ TRANSIT Engineer, who then directs the Contractor to proceed accordingly). All project activities and plans are subject to approval by NJ TRANSIT under the terms of the respective contract. All project activities and plans affecting Built Historic Properties are subject to consultation with ACHP, NJSHPO, NYSHPO and NYCLPC according to the stipulations of this agreement.

II. BUILT HISTORIC PROPERTIES

ARC could have potential direct physical effects on certain Built Historic Properties. The resources listed in II.B. below, could also experience indirect effects, primarily due to location of these resources too near to proposed ARC construction activities and operations.

A. Treatment To Avoid Adverse Effects

Treatment for these nine built historic properties to avoid and/or minimize adverse effects are listed below. NJ TRANSIT will continue consultation with NJSHPO or NYSHPO to avoid adverse effects (see FEIS Chapter 7).

1. New Jersey

1. New York Susquehanna & Western (NYS&W) Railroad Historic District: Two single-track bridges carrying the Build Alternative alignment will be constructed to cross above the NYS&W railroad, each supported mid-span by a pier with two columns protected by crash walls. The piers of the Build Alternative bridges will be designed to complement the color, texture and overall appearance of other piers along the line and will be developed in consultation with NJSHPO. The improvements in the vicinity of the railroad bridge will be designed to complement the materials, texture, and color of the adjacent Northeast Corridor (NEC) bridge over the NYS&W and Conrail tracks.

2. Old Main DL&W Railroad (Morris and Essex Line) Historic District: The Build Alternative will add two West End Wye connecting tracks on widened embankments or widened viaducts, a parallel siding track in the area of the proposed Kearny Rail Yard in New Jersey, and demolish portions of wing walls of the existing abutments of the James Avenue Bridge (Milepost 2.30), a contributing element to the historic district.

The retaining walls associated with Build Alternative track improvements will be constructed of precast concrete, cast-in-place concrete or mechanically stabilized earth walls (MSE). All types of walls will be designed to complement the color, texture and overall appearance of other retaining walls along the Old Main DL&W Railroad Historic District, to support, rather than detract from, the character-defining features of this historic rail line.

A state-level recordation of the Koppers Road Bridge within the district, including archival black-and-white photography of the structure, copies of as-

built drawings (if available), and a written narrative on the development and use of the bridge within the local community, will be prepared.

3. Federal Carton Corporation/G&B Baker's Supply/Grand-City Container Corporation Building, North Bergen, New Jersey: The construction of the new Build Alternative alignment would require the demolition of an appendage at the northwest corner, which is approximately 200 to 250 feet wide. Efforts will be made to stabilize the remaining building and replace the end walls with materials compatible to the appearance and design of the rest of the building, the project does not have the potential to detract from the integrity of the resource.

Mitigation for the effects to this historic property will include the documentation of the building to state-level recordation standards, including archival black-and-white photographs, copies of as-built drawings (if available), copies of historic mapping, and a written narrative on the design, development, and use of the building.

4. Substation 3 Building (Amtrak Substation 42), North Bergen, New Jersey: Build Alternative electrical upgrades will be made in a manner that will be sympathetic to the internal character-defining features (brick walls, arched openings, etc.) of the resource. The appearance of the interior will be recorded through archival black-and-white photography prior to the replacement of the electrical equipment.

5. Pennsylvania Railroad New York to Pennsylvania Historic District (NEC): Additional Build Alternative track and related rail infrastructure (signals, catenary, switches) will be placed on widened existing embankments and on new viaducts parallel to and south of the existing NEC tracks, from west of Frank R. Lautenberg Station to just west of the proposed Palisades Tunnels portal. The retaining walls associated with the track improvements will be constructed of precast concrete, cast-in-place concrete or mechanically stabilized earth walls (MSE). All types of walls will be designed to complement the color, texture, and overall appearance of other retaining walls along the NEC, to support, rather than detract from, the character-defining features of this historic rail line.

In addition, the face of the proposed Palisades Tunnels portal within the district, approaches, and associated structures will be designed to complement the existing tunnels portal. NJ TRANSIT, in consultation with NJSHPO, will develop a plan to provide consulting and interested parties, as appropriate the opportunity to review and comment on the conceptual and preliminary alternative designs developed for the tunnels portal and associated structures, including the technical, structural, aesthetic, historic-cultural and environmental criteria that was considered in the design of the tunnels portals. This process will include continued consulting party review of final design plans and specifications to be implemented during construction.

6. Substation 4 (Amtrak Substation 41), Kearny, New Jersey: Build Alternative electrical upgrades will be made in a manner that will be sympathetic to the character-defining features of the resource and will result in no adverse

effect. The appearance of Substation 4 will be recorded through archival black-and-white photography prior to the replacement of the electrical equipment.

7. Delaware, Lackawanna & Western's Boonton Line (Main Line): Build Alternative track improvements will introduce minimal changes to the character-defining features (track, signals, and structures) of the railroad. The retaining walls associated with the track improvements will be constructed of precast concrete, cast-in-place concrete, or mechanically stabilized earth walls (MSE). All types of walls will be designed to match the color, texture, and overall appearance of other retaining walls along the Main Line, to support, rather than detract from, the character-defining features of this historic rail line.

2. New York

8. Nelson Tower: Impacts to this resource would be limited to 1,300 square feet of first floor interiors of two storefronts on West 34th Street during construction. Once the station entrance excavation is completed, this space will be restored for retail/commercial use. The facades of the storefronts will be returned to their original appearance following the construction of the Build Alternative using materials that will be sympathetic to the historic architectural characteristics of the Nelson Tower.

9. Garment Center Historic District: Nelson Tower (Resource 8) discussed above, is the only contributing resource of the district affected by the Build Alternative.

B. Design Specifications Governing Potential Temporary/Permanent Indirect (Contextual) Effects

The siting of a new substation on the east side of Tonnelle Avenue, fan plants in New Jersey and station entrances for the New York Penn Station Expansion (NYPSE) will create permanent indirect visual/scale (contextual) effects on the following 19 resources:

New Jersey:

- Substation 3 (Amtrak Substation 42)
- Federal Carton Corporation/G&B Baker's Supply/Grand-City Container Corporation Building

New York:

- R. H. Macy's & Company Store
- U.S. Post Office
- Harding Building
- Nelson Tower
- 424 West 33rd Street
- William F. Sloan Memorial YMCA
- Webster Apartments
- West Side Jewish Center
- St. Michael's Roman Catholic Church Complex
- Former Manhattan Opera House
- Hotel Pennsylvania

- New Yorker Hotel
- Pennsylvania Building
- Former J.C. Penny Building
- New York Terminal Warehouse Company Building
- Loft Building at 462-468 Seventh Avenue
- Garment Center Historic District

During Final Design, NJ TRANSIT, in consultation with NJSHPO and NYSHPO, will develop ARC component designs and specifications that will be visually and contextually compatible with these Historic Properties, as to not impair their integrity or alter their character-defining features, or cause Adverse Effects (**Exhibit F**). Work will be in keeping with the intent of The Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68). As the ARC project design advances, proposed plans will be submitted to NJSHPO and NYSHPO for review.

C. Consultation with SHPO Regarding Built Historic Properties

NJ TRANSIT will submit any plans developed pursuant to potential physical and contextual effects on Built Historic Properties described above to FTA, and, as applicable, to NJSHPO and/or NYSHPO, at 30 percent, 60 percent and 90 percent completion stages, in advance of any construction that may result in any such effects. FTA, NJSHPO and NYSHPO will review and comment on such submissions within 30 days or it will be presumed that they have no comments, as governed by the process set forth in IV.A that follows.

D. Construction Protection Plan for Historic Properties

Prior to construction, NJ TRANSIT will develop a Construction Protection Plan (CPP) for Built Historic Properties (**Exhibit G**) located within 90 feet of construction in consultation with FTA, NJSHPO and NYSHPO, NYCLPC and other appropriate New Jersey and New York agencies. NJ TRANSIT will include this PA, as well as relevant CPPs within specific contract packages to inform contractors of their responsibilities relative historic properties. The CPP will consist of the following:

- Inspection and documentation of existing conditions at the historic resources adjacent to the Build Alternative construction activities
- Establishment of protection measures and procedures
- Development of a monitoring program to measure vibration impacts and ground movements during construction
- Existing foundation and structural condition information and documentation for the historic property; and
- Formulation of maximum vibration tolerances based on impact and duration and considerations using accepted engineering standards for historic buildings.

E. Identification of Additional Built Historic Properties and Assessments of Project Effects

1. Additional Built Historic Properties not referenced in this PA may be identified by NJ TRANSIT with FTA, NJSHPO and NYSHPO, NYCLPC and other

consulting parties as project engineering proceeds and if new project elements are added to Build Alternative. If additional historic properties or additional effects are identified within the existing APE, the stipulations of this PA will apply. If additional effects necessitate the expansion of the APE, these stipulations will apply to any Built Historic Properties identified within the expanded APE. Any previously unevaluated Built Historic Properties identified in newly affected areas will be identified and evaluated by NJ TRANSIT for listing in the National Register of Historic Places in consultation with NJSHPO and NYSHPO. The associated documentation will be comprised of an inventory form, a physical description, a statement of significance, and photographs of the resources in question. The potential effects on those additional Built Historic Properties will be assessed prior to construction by FTA and NJ TRANSIT, in consultation with NJSHPO and/or NYSHPO, in accordance with 36 CFR Part 800.

2. NJ TRANSIT will consult with FTA, NJSHPO, NYSHPO and NYCLPC annually to ensure that FTA and NJ TRANSIT maintain up-to-date lists of properties that will be determined to be Historic Properties as construction of ARC proceeds, and to assess effects on any such properties in ARC APE.

III. ARCHAEOLOGICAL RESOURCES

ARC could have potential adverse effects on Archaeological Resources. It is possible that additional, previously unidentified, Archaeological Resources may be identified within the ARC APE in the future or in the area of any new ARC elements, and that these previously unidentified properties may be affected by ARC. Accordingly, this PA sets forth the following measures that will be implemented for Archaeological Resources within the ARC APE.

A. Mitigation of Unavoidable Adverse Effects

The FEIS has demonstrated that ARC could have potential direct adverse effects on 17 Archaeological Resources (see **Exhibits C and D**) as a result of construction. Treatment for these 17 resources to avoid and/or minimize adverse effects will be developed by NJ TRANSIT as part of continuing consultation with NJSHPO or NYSHPO to avoid adverse effects (see FEIS Chapter 6).

1. New Jersey

1. Historic Cemeteries of Hudson County in Secaucus, NJ: Portions of the known limits of the Historic Cemeteries of Hudson County, a set of three nineteenth- and twentieth-century cemeteries in Secaucus, lie within the APE. (**Exhibit C**). One of the three cemeteries, Secaucus Potter's Field, is eligible for listing on the National Register of Historic Places.

Archaeological field testing of the area south of the NEC to determine the presence of resources associated with the cemetery will be undertaken by NJ TRANSIT within the Malanka Landfill in accordance with the work plan included as **Exhibit L** of the PA, "Protocol for Work in Areas with the Potential for Human Remains".

Archaeological monitors who satisfy the Secretary of the Interior's Professional Qualifications Standards for archaeology will be on site during construction to assure that the approach specified in **Exhibit L** is followed, if and when any such burials are encountered.

Historic Cemeteries of Hudson County (with its undefined southern boundary, which is within the APE for the ARC project) falls within the jurisdiction of the New Jersey Cemetery Act, Title 8A (Cemeteries) for the New Jersey Statutes (N.J.S.) (State of New Jersey 2002). The New Jersey Cemetery Board administers the Act and regulates cemetery companies and their property, as well as property rights, equipment, and facilities as required under the provisions of Title 8A. The New Jersey Attorney General oversees actions and proceedings of the Cemetery Board. A Disinterment/Re-interment Plan will be required, containing detailed explanations of Build Alternative construction and proposed treatment of human remains. Development of this plan will be based on consultation with FTA, NJ TRANSIT, NJSHPO, and interested lineal descendants of the deceased buried in the Historic Cemeteries of Hudson County (**Exhibit L**).

B. Construction and Archaeological Phasing Plan

NJ TRANSIT will take practical steps to initiate and complete archaeological field analysis and data recovery (depending on site access and testing feasibility) prior to ARC construction activities. NJ TRANSIT, in consultation with NJSHPO and/or NYSHPO, will develop a plan to appropriately phase the archaeological field analysis and data recovery with construction activities (**Exhibit P**). NJSHPO and/or NYSHPO review and comment on such plan will be governed by the process set forth in IV.A that follows.

C. Additional Evaluation for Archaeologically Sensitive Areas

The following stipulations describe the processes that will be followed in conducting further research to determine the potential for Archaeological Resources to be affected by ARC (**Exhibit I**).

1. Additional Documentary Study(s) and Further Impact Analyses

Additional documentary research and impact analyses will be undertaken by NJ TRANSIT and their Cultural Resources Manager, as indicated in the FEIS and set forth below:

- a. NJ TRANSIT will submit any plans developed pursuant to potential physical and contextual effects described above to FTA, and, as applicable, to NJSHPO and NYSHPO at 30 percent, 60 percent and 90 percent completion stages, in advance of any construction that may result in any such effects. FTA, NJSHPO and NYSHPO review and comment on such submissions within 30 days or it will be presumed that they have no comments as governed by the process set forth in IV.A that follows.
- b. Further archaeological evaluation for any area within the APE identified as potentially sensitive for human remains will be undertaken by NJ TRANSIT as discussed in **Exhibit L**.

- c. For any areas that may be identified as sensitive for industrial archaeological remains and eighteenth-century transportation facilities, including near the proposed fan plant and construction access shaft sites in Hoboken, additional investigations, including further research, and field testing will be undertaken by NJ TRANSIT.
- d. If a review of future geotechnical data on the substrate beneath the structures on the four sites of proposed fan plants/construction access shafts and nine station entrances in Manhattan reveals the potential for intact, artifact-bearing deposits, coordination/consultation with NYSHPO and New York City Landmarks Preservation Commission (LPC) will take place to agree on an appropriate protocol for archaeological monitoring of construction. The monitoring protocol will stipulate the methodologies to be employed to identify any potentially significant archaeological features (e.g., privies, wells, building foundations), assess their significance, and identify mitigation measures. Mitigation could entail document research into the history of the properties under investigation, the identity of the individuals and families that occupied the sites, their occupations, and the communities of which they were a part. It could also include archaeological sampling of the site or sites through hand excavation, analysis and curation of artifacts and report preparation. The New York State Museum in Albany or any other approved repository will curate and store the artifacts.

2. Soil Boring Program

During the Preliminary Engineering phase of ARC, NJ TRANSIT established a soil-boring program to identify geotechnical and environmental subsurface conditions along the project corridor. Additional soil borings are anticipated as the project moves through the Final Design. A process has been developed to ensure that potential cultural resources impacts are considered prior to any ground disturbance tied to the soil boring program. Future soil boring efforts and their potential involvement with cultural resources are elaborated in **Exhibit J**. The key elements of the Soil Borings Program are as follows:

- Retention of Professional Archaeologist
- Review of Borings Logs by the Professional Archaeologist
- Potential Additional Soil Borings upon Request by Professional Archaeologist
- Soil Boring Procedures in Potential Burial Ground Sites
- Reporting Procedures to NJSHPO, NYSHPO, NYLPC, FTA

3. Field Testing Plan

At each site where the potential for archaeological resources has been identified and ARC may affect such resources, NJ TRANSIT and their Cultural Resources Manager, in consultation with NJSHPO and/or NYSHPO will prioritize the sites for testing, and then undertake field testing to identify the presence or absence of potential Archaeological Resources (**Exhibit K**):

- a. Prior to commencing any field testing, NJ TRANSIT will submit a Field Testing Plan outlining the proposed methodology for NJSHPO and/or NYSHPO concurrence that the field evaluation and testing program will be conducted at a level sufficient to determine if the potential resource meets the Historic Properties Criteria. NJSHPO and/or NYSHPO review and comment on such submissions will be governed by the process set forth in IV.A that follows.
- b. In the areas identified as potentially sensitive for human remains field testing by NJ TRANSIT will proceed in accordance with the requirements for testing in areas potentially sensitive for human remains, in accordance with the Field Testing Plan (**Exhibit L**).
- c. In areas identified as potentially sensitive for industrial archaeological resources in Hoboken, New Jersey, based on research undertaken, as outlined in III.C.1.c above, field testing will be conducted by NJ TRANSIT, as determined appropriate, in consultation with NJSHPO.
- d. For each field-tested site, NJ TRANSIT will provide a report to FTA, NJSHPO and/or NYSHPO in which the Historic Properties Criteria have been applied to reach one of the following conclusions:
 - (i) The site does not meet the Historic Properties Criteria, in which case, no further action is required.
 - (ii) The site meets the Historic Properties Criteria, in which case the site will be treated in accordance with III.C.5 below.
- e. NJSHPO and/or NYSHPO review and comment on such plans will be governed by the process set forth in IV.A that follows.
- f. FTA and NJ TRANSIT, along with NJSHPO and NYSHPO, will develop and implement a field testing and/or monitoring plan within 24 months of execution of this PA for that part of the New Jersey Meadowlands in North Bergen, New Jersey, that lies primarily between Tonnelle Avenue and the existing NEC railroad right-of-way embankment and will be affected by construction activities associated with ARC.
 - (i) FTA and NJ TRANSIT will develop the plan to identify any artifacts, architectural elements, and remnants, of the former New York Pennsylvania Railroad Station (constructed in 1910)

that may have been disposed in the area following the demolition of that structure in 1964.

- (ii) The plan to address the disposition of any such remains found will include steps set forth in III.C.3.a, III.C.3.d, and III.C.5.a-d.

4. Protocol for Work in Areas Potentially Sensitive for Human Remains

A detailed workplan has been developed by NJ TRANSIT for work in areas potentially sensitive for human remains (**Exhibit L**). It is anticipated that any proposed work in areas potentially sensitive for human remains will require compliance with the New Jersey Cemetery Act. The New Jersey Cemetery Act (Act), Title 8A (Cemeteries) governs all cemeteries in the State of the New Jersey and the New Jersey Cemetery Board (Cemetery Board) administers the Act. The Cemetery Board falls under the purview of the New Jersey State Attorney General's office, which oversees all actions and proceedings of the Cemetery Board. NJ TRANSIT will comply with all legal responsibilities required of the agency under the applicable regulations, noted above. Steps in this process include:

a. Consultation with Descendent Community(s)

Based on the conclusions of the Documentary Analysis Report, described in III.C.1.b., and where subsurface work is required for field testing, as described in III.C.3.b., NJ TRANSIT will complete a reasonable and good faith effort, prior to any excavation, to locate and contact the appropriate descendent community(s). In the event that NJ TRANSIT can identify and locate the appropriate descendent community(s), NJ TRANSIT will seek their involvement to establish a protocol outlining appropriate notification procedures and treatment of human remains, in the event the discovery of human remains during construction. Such protocol will be in place prior to any excavation.

b. Notification Procedures and Treatment of Human Remains

If any human remains will be encountered during subsurface work for field testing or Build Alternative construction, and in accordance with the New Jersey Cemetery Act noted above, the following steps will occur:

- (i) NJ TRANSIT will stop work and secure the site.
- (ii) NJ TRANSIT will notify the State Medical Examiner, local Police Department and NJSHPO and/or NYSHPO.
- (iii) The appropriate descendent community(s) will be notified, so that the remains may be treated in an appropriate manner, as previously agreed upon by the descendent community(s) and NJ TRANSIT.

- (iv) Once NJ TRANSIT, in conjunction with NJSHPO and/or NYSHPO, indicates that the remains have been properly treated, construction may proceed.

5. Mitigation, Data Recovery, Curation, and Public Interpretation

- a. For each site identified as meeting the Historic Properties Criteria, FTA and NJ TRANSIT, in consultation with NJSHPO and/or NYSHPO, will consider measures, such as design modification, for avoidance of Archaeological Resources (**Exhibit M**).
- b. For those sites identified as meeting the Historic Properties Criteria where FTA and NJ TRANSIT determine, in consultation with NJSHPO and/or NYSHPO, that avoidance is not practicable, NJ TRANSIT, in consultation with NJSHPO and/or NYSHPO, will develop and implement a Data Recovery Plan. The Data Recovery Plan will be designed to recover data sufficient to address significant research issues and test assumptions, and, thus, substantially preserve the archaeological value of Section 106-protected sites. The Data Recovery Plan will be consistent with: the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (1994), the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716); and the Advisory Council on Historic Preservation handbook *Treatment of Archaeological Resources* (1980). NJSHPO and NYSHPO review and comment on such plan will be governed by the process set forth in IV.A that follows. NJ TRANSIT will be responsible for the implementation of such a plan, as appropriate.
- c. In advance of any mitigation or data recovery efforts undertaken pursuant to III.C.5.a and b above, NJ TRANSIT, in consultation with NJSHPO or NYSHPO, will develop, in accordance with 36 CFR Part 79, an Analysis and Curation of Material and Records Plan for any archaeological excavations. NJSHPO and NYSHPO review and comment on such plans will be governed by the process set forth in IV.A that follows. NJ TRANSIT will be responsible for the implementation of such a plan, as appropriate.
- d. In advance of data recovery or mitigation efforts, NJ TRANSIT will develop a plan to provide interpretive materials to the public in consultation with NJSHPO and/or NYSHPO (**Exhibit M**). This activity will follow the document review process identified in Section IV. Upon the development of an acceptable public outreach plan, NJ TRANSIT will ensure the plan is implemented.

D. Construction Protection Plan for Archaeological Resources

NJ TRANSIT will develop a Construction Protection Plan (CPP) for Archaeological Properties (**Exhibit H**) located within 90 feet of construction in consultation with FTA, NJSHPO and NYSHPO, NYCLPC and other appropriate New Jersey and New York agencies.

If any additional Archaeological Resources of special concern are encountered, a Construction Protection Plan for these resources will also be prepared by NJ TRANSIT.

The CPPs will be developed prior to construction of ARC and updated as necessary. NJ TRANSIT will ensure that any Archaeological Property that could be adversely affected by ARC construction will be included in a CPP, and NJ TRANSIT will implement such plans, as appropriate. The CPP for Archaeological Resources incorporates all activities related to the protection of archaeological resources included in the PA and further elaborated in **Exhibits I, J, K, L, M, N, O and P**.

E. Identification of Additional Archaeologically Sensitive Areas and Assessment of Potential Project Effects

1. Any new ARC elements that involve subsurface construction where the effects of such construction were not part of the FEIS analysis of potential effects on archaeologically sensitive areas within the ARC APE (adjusted, as appropriate, in light of such new ARC elements) will be assessed by NJ TRANSIT, following the consultation requirements set forth in 36 CFR Part 800.
2. FTA and NJ TRANSIT will consult with NJSHPO and NYSHPO to identify archaeologically sensitive areas not previously identified, and to assess potential ARC effects not previously assessed.
3. If any archaeologically sensitive areas are identified as a result, as described in Sections III.E.1 and III.E.2, NJ TRANSIT will follow the procedure set forth in Stipulation III.C of this Agreement.

F. Unanticipated Discoveries Plan

1. NJ TRANSIT, in conjunction with FTA, along with NJSHPO and/or NYSHPO, will develop and implement an Unanticipated Discoveries Plan for non-human archaeological resources and human remains, in the event that any unanticipated archaeological resources and/or human remains are encountered during construction of ARC (**Exhibit O**).
2. NJSHPO and NYSHPO review and comment on such plan will be governed by the process set forth in IV.A that follows.
3. FTA and NJ TRANSIT, along with NJSHPO and/or NYSHPO, acknowledge that extraordinary costs will be incurred if construction were to be halted or delayed once underway. Accordingly, the parties will implement the approved Unanticipated Discoveries Plan expeditiously in circumstances requiring its use.

G. Professional Standards

NJ TRANSIT will ensure that archaeological research, testing, analysis, and plans conducted pursuant to this PA will be carried out by or under the direct supervision of a person or persons meeting, at a minimum, the Secretary of Interior's Professional Qualifications Standards. NJ TRANSIT will ensure that final archaeological reports are consistent with the following: NJSHPO's *Guidelines for Phase I Archaeological Investigations: Identifications of Archaeological Resources*, NJSHPO's *Guidelines for*

Preparing Cultural Resources Management Archaeological Reports Submitted to the Historic Preservation Office, the New York Archaeological Council's Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State, and adhere to the Department of Interior's Standards and Guidelines for Archaeological and Historic Preservation.

IV. DOCUMENT REVIEW

- A.** NJSHPO and NYSHPO will provide comments on documents for their review, as set forth below:
1. NJSHPO and/or NYSHPO will provide comments to NJ TRANSIT regarding any plan submitted pursuant to this agreement, as promptly as possible, but not to exceed 30 calendar days of the receipt of such revisions.
 2. If NJSHPO and/or NYSHPO do not submit comments in writing within 30 calendar days of the receipt of any such submissions, it is understood that NJSHPO and/or NYSHPO have concurred with the proposed plans.
 3. If NJSHPO and/or NYSHPO objects within 30 calendar days of the receipt of any submissions, then FTA, NJ TRANSIT, NJSHPO and/or NYSHPO will consult expeditiously in an effort to resolve the objection.
 4. If FTA and NJ TRANSIT cannot resolve NJSHPO and/or NYSHPO objection, and if further consultation with NJSHPO and/or NYSHPO is deemed unproductive by any party, then the parties will adhere to the dispute resolution procedures detailed under VII. below.

FTA, NJ TRANSIT, NJSHPO and/or NYSHPO acknowledge that the timeframes set forth in IV.A., above, will be the maximum allowable under normal circumstances. In exigent circumstances (such as when construction activities have been suspended or delayed pending resolution of the matter), each party agrees to expedite their respective document review and dispute resolution obligations.

V. DURATION

This PA will be voided if Final Design and/or construction has not commenced within five (5) years from the date of execution. Prior to such time, NJ TRANSIT may consult with the other signatories to reconsider the terms of the PA and amend it in accordance with Stipulation IX below.

VI. REPORTING AND OVERSIGHT

- A. Final Reports.** NJ TRANSIT will provide to NJSHPO, NYSHPO, and FTA final historic reports and final archaeological resources reports resulting from this PA.
- B. Annual Reports.** Commencing one year from the date that this Agreement is fully executed, and every year thereafter until ARC is completed or terminated by NJ TRANSIT, NJ TRANSIT will submit annual reports to ACHP, NJSHPO, NYSHPO, and FTA, providing information concerning implementation of this Agreement. These

reports will be provided to other consulting parties via the project web site or another agreed-upon method of distribution.

- C. Annual Review of the Programmatic Agreement.** NJ TRANSIT, NJSHPO and NYSHPO will review the effectiveness of this PA to determine whether to revise the PA during each annual reporting period. NJ TRANSIT will recommend any PA revisions to FTA, ACHP, NJSHPO and NYSHPO amend it in accordance with Stipulation IX below.
- D. Revisions to the Programmatic Agreement.** After review of the annual reports, if FTA, ACHP, NJ TRANSIT, NJSHPO and/or NYSHPO agree that revisions to this PA are necessary, such revisions will be considered and implemented, pursuant to Stipulation VIII ("Amendment") below.

VII. DISPUTE RESOLUTION

- A.** In the event any signatory objects to any plan or report proposed pursuant to this PA within 30 calendar days of its receipt of such plan or report, or objects at any time to the manner in which the terms of this PA are implemented, FTA and NJ TRANSIT will consult with the NJSHPO and/or NYSHPO to resolve the objection.
- B.** Following such further consultation, FTA will determine, as promptly as possible, whether such objection has been satisfactorily resolved. If FTA determines that the objection has not been satisfactorily resolved, within 15 calendar days of their determination in this regard, FTA will forward documentation relevant to the dispute, including FTA's proposed resolution of the dispute, to ACHP.
- C.** Except in exigent circumstances, as provided in VII.E., when a dispute occurs, ACHP will provide FTA with recommendations or formal ACHP comments (per 36 CFR §800.7) within 30 calendar days after receipt of pertinent documentation. Prior to reaching a final decision on the dispute, FTA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories, and provide them with a copy of this written response. FTA will then proceed according to its final decision. .
- D.** Except in exigent circumstances, as provided in VII.E., in the event ACHP fails to respond to FTA's request for recommendations or comments within 30 calendar days of receiving pertinent documents, FTA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FTA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories to the PA, and provide them and the ACHP with a copy of such written response.
- E.** In the case of disputes arising under exigent circumstances (such as when construction activities have been suspended or delayed pending resolution of the matter), relevant parties will endeavor to resolve any dispute within seven calendar days. In particular, ACHP agrees to respond to FTA's request for recommendations or comments within five business days of its receipt thereof.
- F.** If NJ TRANSIT receives timely and substantive written public objections regarding the treatment of historic properties or measures taken to implement the terms of this PA, NJ TRANSIT will consult with the objector regarding such objections.

1. NJ TRANSIT shall respond to the objector within 30 calendar days. If NJ TRANSIT and the objector cannot resolve the matter, or the matter is such that NJ TRANSIT believes involvement of NJSHPO and/or NYSHPO is appropriate, NJ TRANSIT shall notify NJSHPO and/or NYSHPO, and provide copies of the objection, and NJSHPO and/or NYSHPO, as appropriate, shall advise NJ TRANSIT of measures, if any, that could resolve the matter.
2. If NJ TRANSIT and NJSHPO and/or NYSHPO cannot resolve the matter and NJSHPO and/or NYSHPO determine that, in the absence of such resolution, there would be an adverse effect on the historic property, NJSHPO and/or NYSHPO shall consult with FTA and ACHP, as appropriate.

VIII. OTHER

- A. NJSHPO and/or NYSHPO may monitor activities carried out pursuant to this PA, and will review such activities as requested. NJ TRANSIT will cooperate with FTA, NJSHPO and NYSHPO in carrying out NJSHPO and/or NYSHPO monitoring and reviewing responsibilities.
- B. Notwithstanding any other provision in this PA, any party may propose an amendment hereto, whereupon the parties will consult to consider such amendments.
- C. For purposes of notices and consulting pursuant to this PA, the following addresses and contact information should be used for the following agencies:

NJ TRANSIT

Thomas Schulze
Project Director
NJ TRANSIT
One Penn Plaza East
Newark, NJ 07105-2246
Tel: (973) 491-8912
Fax: (973) 491-7837

FTA

Donald C. Burns
Federal Transit Administration
1 Bowling Green, Room 429
New York, NY 10004-1415
Tel: (212) 668-2203
Fax: (212) 668-2136

NJSHPO

Charles Scott
Principal Historic Preservation Specialist
State of New Jersey Department of Environmental Protection
Historic Preservation Office
P.O. Box 404
Trenton, NJ 08625-0404
Tel: (609) 633-2396
Fax: (609) 984-0578

NYSHPO

Beth Cumming
Historic Preservation Specialist
Technical Service Unit
New York State Office of Parks, Recreation, and Historic Preservation
Peebles Island State Park
P.O. Box 189
Waterford, NY 12188-0189
Tel: (518) 237-8643, Ext. 3282
Fax: (518) 233-9049

ACHP

Blythe Semmer
Advisory Council on Historic Preservation
Old Post Office Building
1100 Pennsylvania Avenue NW, Suite 803
Washington, DC 20004
Tel: (202) 606-8552
Fax: (202) 606-5072

NYC LANDMARKS PRESERVATION COMMISSION

Gina Santucci
Director of Environmental Review
New York City Landmarks Preservation Commission
1 Centre Street, 9N
New York, NY 10007
Tel: (212) 669-7822
Fax: (212) 669-7818

- D.** In the event that during construction of the ARC Project, an emergency situation should occur (such as a natural disaster), which represents an immediate threat to public health, safety, life or property creating a hazardous condition in relation to an Historic Property, NJ TRANSIT shall notify the FTA, Advisory Council, NJSHPO and NYSHPO of the condition which has initiated the situation and the measures to be taken to respond to the emergency or hazardous condition. The FTA and SHPO may submit additional measures to resolve Adverse Effects within seven days of the notification. Should the nature of the emergency warrant immediate attention, NJ TRANSIT shall consult with the FTA and NJSHPO and NYSHPO via telephone/e-mail/facsimile/etc. Should the NJSHPO, NYSHPO or the FTA desire to provide technical assistance to NJ TRANSIT in responding to such condition, they shall submit comments within five days from

notification, if the nature of the emergency or hazardous condition allows for such coordination.

IX. AMENDMENTS

This PA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

X. TERMINATION

If any signatory of this PA determines that its terms will not or cannot be carried out, that party will immediately consult with the other parties to attempt to develop an amendment per Stipulation IX above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the PA upon written notification to the other signatories. Once the PA is terminated, and prior to work continuing on the undertaking, NJ TRANSIT and FTA must either (a) execute a PA pursuant to 36CFR Section 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR Section 800.7. NJ TRANSIT and FTA will notify the signatories as to the course of action it will pursue.

This agreement will terminate five years after completion of construction (closeout of ARC), and the obligation set forth in this document governing construction, reporting, and curation, for five years after FTA notifies the other parties in writing that this Programmatic Agreement has been terminated.

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

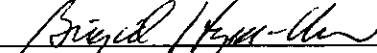
**The Federal Transit Administration (FTA)
The Advisory Council On Historic Preservation (ACHP)
The New Jersey Transit Corporation (NJ TRANSIT)
The New Jersey State Historic Preservation Officer (NJSHPO)
and
The New York State Historic Preservation Officer (NYSHPO)**

Regarding The

**Access to the Region's Core Project (ARC) in
Hudson County, New Jersey and New York County, New York**

**Execution and Implementation of this Programmatic Agreement Evidences that FTA has Satisfied
its Section 106 Responsibilities for Individual Undertakings of ARC.**

FEDERAL TRANSIT ADMINISTRATION

By: 

Date 10/7/08

Name Brigid Hynes-Cherin

Title Regional Administrator, Region II

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

**The Federal Transit Administration (FTA)
The Advisory Council On Historic Preservation (ACHP)
The New Jersey Transit Corporation (NJ TRANSIT)
The New Jersey State Historic Preservation Officer (NJSHPO)
and
The New York State Historic Preservation Officer (NYSHPO)**


Regarding The

**Access to the Region's Core Project (ARC) in
Hudson County, New Jersey and New York County, New York**

**Execution and Implementation of this Programmatic Agreement Evidences that FTA has Satisfied
its Section 106 Responsibilities for Individual Undertakings of ARC.**

ADVISORY COUNCIL ON HISTORIC PRESERVATION

By:



Date



Name John M. Fowler

Title Executive Director

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

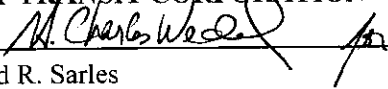
**The Federal Transit Administration (FTA)
The Advisory Council On Historic Preservation (ACHP)
The New Jersey Transit Corporation (NJ TRANSIT)
The New Jersey State Historic Preservation Officer (NJSHPO)
and
The New York State Historic Preservation Officer (NYSHPO)**

Regarding The

**Access to the Region's Core Project (ARC) in
Hudson County, New Jersey and New York County, New York**

**Execution and Implementation of this Programmatic Agreement Evidences that FTA has Satisfied
its Section 106 Responsibilities for Individual Undertakings of ARC.**

NEW JERSEY TRANSIT CORPORATION

By: 
Name Richard R. Sarles
Title Executive Director

Date 10/7/08

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

**The Federal Transit Administration (FTA)
The Advisory Council On Historic Preservation (ACHP)
The New Jersey Transit Corporation (NJ TRANSIT)
The New Jersey State Historic Preservation Officer (NJSHPO)
and
The New York State Historic Preservation Officer (NYSHPO)**

Regarding The

**Access to the Region's Core Project (ARC) in
Hudson County, New Jersey and New York County, New York**

**Execution and Implementation of this Programmatic Agreement Evidences that FTA has Satisfied
its Section 106 Responsibilities for Individual Undertakings of ARC.**

NEW JERSEY STATE HISTORIC PRESERVATION OFFICER

By:  _____

Date

10/2/2008

Name Daniel Saunders

Title Deputy State Historic Preservation Officer

APPROVAL AND SIGNATURE PAGE FOR PROGRAMMATIC AGREEMENT

Among

**The Federal Transit Administration (FTA)
The Advisory Council On Historic Preservation (ACHP)
The New Jersey Transit Corporation (NJ TRANSIT)
The New Jersey State Historic Preservation Officer (NJSHPO)
and
The New York State Historic Preservation Officer (NYSHPO)**

Regarding The

**Access to the Region's Core Project (ARC) in
Hudson County, New Jersey and New York County, New York**

**Execution and Implementation of this Programmatic Agreement Evidences that FTA has Satisfied
its Section 106 Responsibilities for Individual Undertakings of ARC.**

NEW YORK STATE HISTORIC PRESERVATION OFFICER

By: Ruth Pierpont DSHPO

Date 10/6/08

Name Ruth Pierpont

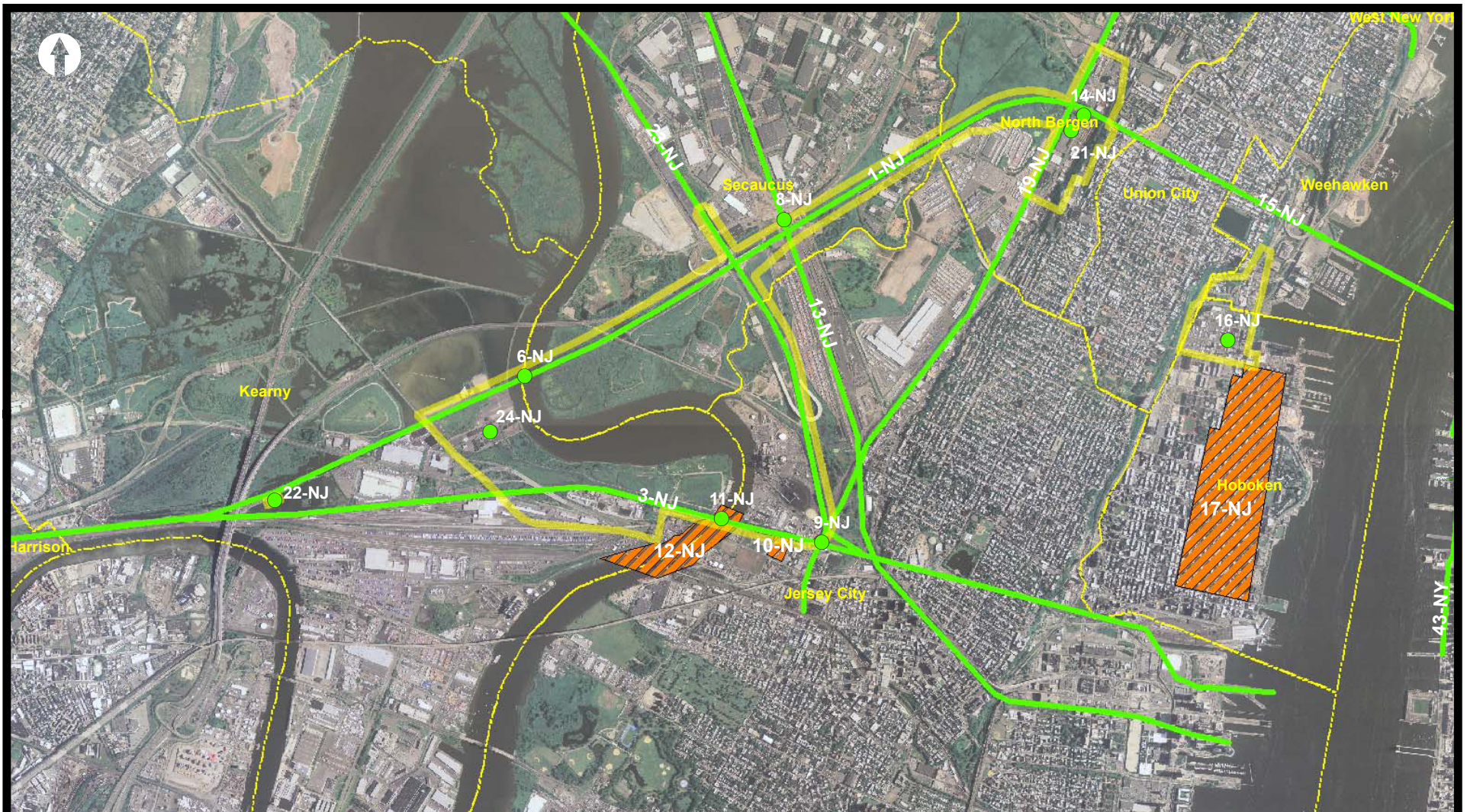
Title Director of Field Services

List of Exhibits

- A LOCATION OF KNOWN HISTORIC RESOURCES WITHIN THE ARC AREA OF POTENTIAL EFFECTS (APE) – NEW JERSEY AND NEW YORK**
- B LISTING OF KNOWN HISTORIC RESOURCES WITHIN THE ARC APE**
- C LOCATION OF ARCHAEOLOGICALLY SENSITIVE AREAS WITHIN THE AREA OF POTENTIAL EFFECTS (APE) – NEW JERSEY AND NEW YORK**
- D LISTING OF AREAS OF POTENTIAL ARCHAEOLOGICAL SENSITIVITY WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS**
- E TRIBAL CONSULTATION**
- F DESIGN SPECIFICATIONS FOR CONTEXTUAL EFFECTS**
- G CONSTRUCTION PROTECTION PLAN FOR HISTORIC PROPERTIES**
- H CONSTRUCTION PROTECTION PLANS FOR ARCHAEOLOGICAL RESOURCES**
- I ADDITIONAL EVALUATION FOR ARCHAEOLOGICALLY SENSITIVE AREAS**
- J ARC PROJECT SOIL BORINGS PROGRAM AND ARCHAEOLOGICAL RESOURCES PROTOCOL**
- K FIELD TESTING PLAN FOR ARCHAEOLOGICALLY SENSITIVE AREAS**
- L PROTOCOL FOR WORK IN AREAS WITH THE POTENTIAL FOR HUMAN REMAINS**
- M MITIGATION, DATA RECOVERY, CURATION AND PUBLIC INTERPRETATION**
- N IDENTIFICATION OF ADDITIONAL SENSITIVE AREAS**
- O UNANTICIPATED DISCOVERIES FOR ARCHAEOLOGICAL PROPERTIES INCLUDING HUMAN REMAINS**
- P CONSTRUCTION AND ARCHAEOLOGICAL PHASING PLAN**

EXHIBIT A

LOCATION OF KNOWN HISTORIC RESOURCES WITHIN THE ARC AREA OF POTENTIAL EFFECTS (APE) – NEW JERSEY AND NEW YORK



Legend

- Historic Property
- Linear Historic Property
- Area of Potential Effects (APE)
- Previously Known Historic District
- Municipal Boundary

Source: Transit Link Consultants, 2008

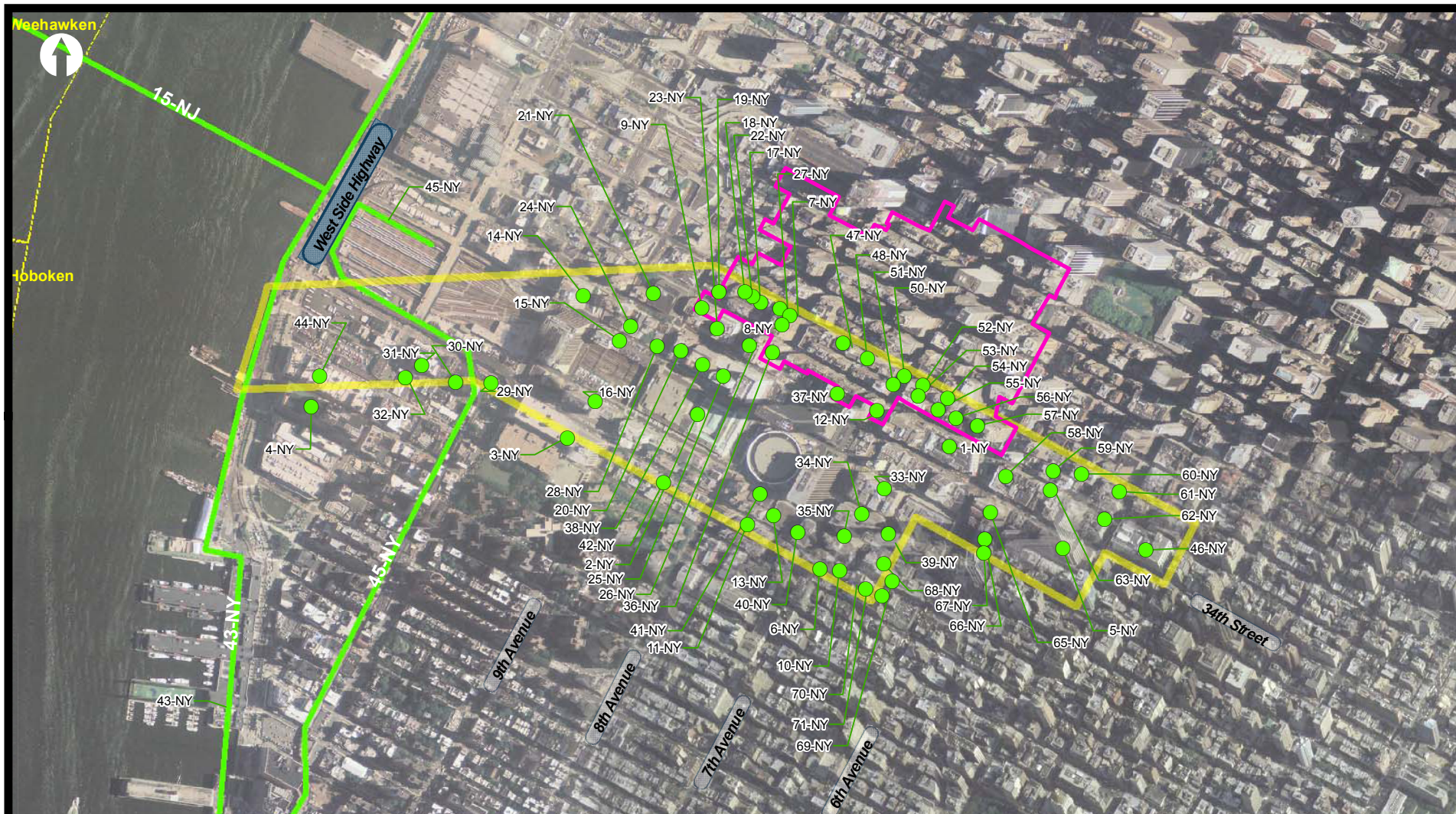


Access to the Region's Core
Programmatic Agreement

Figure A
APE and Historic Properties
in the Project Area - New Jersey



1,000 0 1,000
Feet



Legend

- Historic Property
- Linear Historic Property
- Garment Center Historic District
- Area of Potential Effects (APE)
- Municipal Boundary

Source: Transit Link Consultants, 2008



Access to the Region's Core
Programmatic Agreement

Figure B
APE and Historic Properties
in the Project Area - New York



500 0 500
Feet

EXHIBIT B

LISTING OF KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW JERSEY

Id No.*	Resource Name	Location	Municipality	County	Potential Build Alternative Effects
1-NJ	Pennsylvania Railroad New York to Philadelphia Historic District (NEC)	AMTRAK Northeast Corridor, Pennsylvania to New York	Multiple	Multiple	Temporary Direct Effects: direct disturbance during track and infrastructure construction Permanent Direct Effect: track improvements; new retaining walls, embankments, and viaducts; reconstruction of existing drainage pipe and headwall outlet at Upper Penhorn Creek Bridge.
3-NJ	Old Main DL&W Railroad Historic District	Morris and Essex Railroad ROW from Hudson, Hoboken City to Warren, Washington Twp., and then along Warren Railroad to the Delaware River	Multiple	Multiple	Temporary Direct Effects: direct disturbance during track and infrastructure construction temporary support of excavation (SOE) for James Avenue Bridge Permanent Direct Adverse Effect: Koppers Road Bridge demolition and replacement Permanent Direct Effects: demolition of portions of wing walls of existing abutments of James Avenue Bridge track improvements; widened embankments and new retaining walls
6-NJ	Portal Bridge	AMTRAK Northeast Corridor Line, Milepost 6.1 over the Hackensack River	Kearny, Secaucus	Hudson	No effect
8-NJ	Erie Lackawanna Railroad Bridge (HX Drawbridge)	NJ TRANSIT Bergen County Line, Milepost 5.48 over Passaic River	Secaucus	Hudson	No effect
9-NJ	West End Interlocking Tower	NJ TRANSIT Morristown Line, East of West End Avenue, Milepost 2.10	Jersey City	Hudson	No effect
10-NJ	PSE&G Marion Office Historic District	444 and 460-468 St. Paul's Avenue	Jersey City	Hudson	No effect
11-NJ	Lower Hack Drawbridge	NJ TRANSIT Morristown Line, Milepost 2.52-2.64 over Hackensack River	Jersey City, Kearny	Hudson	No effect

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NJSHPO.

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW JERSEY (CONTINUED)

Id No.*	Resource Name	Location	Municipality	County	Potential Build Alternative Effects
12-NJ	Hackensack River Lift Bridges Historic District	Hackensack River	Jersey City, Kearny	Hudson	No effect
13-NJ	Erie Railroad Marion [Junction] Mainline Historic District, Bergen County Line	Erie Railroad ROW westward from Hudson, Jersey City at Coles Street to an undetermined location	Multiple	Multiple	No effect
14-NJ	Substation 3 (Amtrak Substation 42)	2308 Tonnelle Avenue	North Bergen	Hudson	Permanent Direct Effect: Introduction of electrical equipment within interior of substation building Temporary Indirect Effects: Demolition of northern portion of 2001 Tonnelle Avenue and construction of new alignment to the south; noise, vibration and dust
15-NJ	North (Hudson) River Tunnel	AMTRAK Northeast Corridor Line, Milepost 3.0, Bergen Portal to Tenth Avenue Portal	Multiple	Multiple	No effect
16-NJ	Former Elevator Supply & Repair Company	Willow and 15 th Streets	Hoboken	Hudson	No effect
17-NJ	Central Hoboken Historic District	Roughly bounded by Hudson Place, 1 st Street, Willow and Clinton Streets, and 14 th Street	Hoboken	Hudson	No effect
19-NJ	NYS&W Railroad Historic District	Marion Junction (Jersey City) to Hanford (Sussex County) and Delaware Water Gap (Warren County)	Multiple	Multiple	Permanent Direct Effect: introduction of piers within the ROW Temporary Direct Effect: Closure of tracks during construction
21-NJ	Federal Carton Corporation/G.B Baker Supply/Grand-City Container Corporation Building	2001 Tonnelle Avenue	North Bergen	Hudson	Temporary Indirect Effects: Increases in noise, vibration, and dust Permanent Direct Effect: demolition of the northernmost segment of the building

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NJSHPO.

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW JERSEY (CONTINUED)

Id No.*	Resource Name	Location	Municipality	County	Potential Build Alternative Effects
22-NJ	Substation 4 (AMTRAK Substation 41)	Approximately 0.75 mile south of NEC bridge spanning the Hackensack river	Kearny	Hudson	Permanent Direct Effect: Introduction of electrical equipment within transformer yard Temporary Indirect Effects: vibration effects to transformer yard during construction
23-NJ	Delaware, Lackawanna & Western's Boonton Line (Main Line)	Hoboken Terminal, Hudson County to Paterson Junction, Passaic County	Multiple	Multiple	Temporary Direct Effects: direct disturbance and closure of track and infrastructure during construction Permanent Direct Effect: track improvements; new retaining walls, embankments, and bridges
24-NJ	Edison Battery Company Property	West side of Hackensack River, south of NEC	Kearny	Kearny	No effect

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NJSHPO.

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW YORK

Id No.*	Resource Name	Location	Potential Build Alternative Effects
1-NY	R.H. Macy & Company Store	151 West 34 th St.	Permanent Indirect Effect: location adjacent to Broadway Northwest station entrance and near 33 rd Street Fan Plant (137-139 West 33 rd Street) construction access shaft Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual
2-NY	U.S. General Post Office	Eighth Ave. between West 31 st and 33 rd Sts.	Permanent Indirect Effect: location near Eighth Avenue Southeast Station Entrance Temporary Indirect Effects: noise/vibration, dust, traffic and visual
3-NY	Morgan General Mail Facility	341 Ninth Ave.	No effect
4-NY	Starrett-Lehigh Building	Between Eleventh and Twelfth Aves. and West 26 th and 27 th Sts.	No effect
5-NY	Empire State Building	350 Fifth Ave.	No effect
6-NY	345-353 Seventh Avenue	345-353 Seventh Ave.	No effect
**7-NY	509-519 Eighth Avenue	509-519 Eighth Ave.	No effect
**8-NY	Hoover Building	501-507 Eighth Ave.	No effect
**9-NY	Harding Building	440-448 Ninth Ave.	Permanent Indirect Effect: location near fan plant (views to ADA Access/Emergency Personnel Access elevator entrance at 323 West 34th Street) Temporary Indirect Effects: noise/vibration, dust, traffic and visual (ADA Access/Emergency Personnel Access elevator entrance at 323 West 34th Street)
10-NY	144-154 West 30 th Street	144-154 West 30 th St.	No effect
11-NY	Fur Craft Building	242-246 West 30 th St.	No effect

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NYSHPO.

** Denotes resource that contributes to the Garment Center Historic District (72-NY),

NYCL = New York City Landmark.

Note: Additional NYCL-eligible properties that are not considered eligible for listing in the National Register or the State Register (and were therefore excluded from Table 7-2) include: Combustion Engineering Building, 200 Madison Avenue; Offices for St. Francis of Assisi Church, 144 West 32nd St.; and Lerner Store, 478 Seventh Ave.).

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW YORK (CONTINUED)

Id No.*	Resource Name	Location	Potential Build Alternative Effects
**12-NY	Nelson Tower	446-456 Seventh Ave.	<p>Permanent Direct Effect: Construction of Seventh Avenue Northwest Station Entrance would permanently displace the first floor and basement interiors of Conway's along 34th Street and Seventh Avenue</p> <p>Permanent Indirect Effect: location near Seventh Avenue Northwest station entrance (442 Seventh Avenue) and 35th Street Fan Plant construction access shaft (218-222 West 35th Street)</p> <p>Temporary Direct Effect: portion of the 34th Street façade of Gaynes's and Starbucks (both within the Nelson Tower) would be deconstructed, stored, and rebuilt using the original materials and design after construction of the station entrance is complete. No permanent impact to Nelson Tower's façade.</p> <p>Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (Seventh Avenue Northwest Station Entrance)</p>
13-NY	Fairmont Building	239-241 West 30 th St.	No effect
14-NY	Master Printers Building	406-416 Tenth Ave.	No effect
15-NY	424 West 33 rd Street	424 West 33 rd St.	<p>Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (Dyer Avenue Fan Plant, access shafts, and staging area)</p> <p>Permanent Indirect Effect: location near Dyer Avenue Fan Plant (431 West 33rd Street)</p>
16-NY	406-426 West 31 st Street	406-426 West 31 st St.	No effect
**17-NY	Former Barbour Dormitory	300 West 36 th St.	No effect
**18-NY	346 West 36 th Street	346 West 36 th St.	No effect
19-NY	367 West 35 th Street	367 West 35 th St.	No effect

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NYSHPO.

** Denotes resource that contributes to the Garment Center Historic District (72-NY),

NYCL = New York City Landmark.

Note: Additional NYCL-eligible properties that are not considered eligible for listing in the National Register or the State Register (and were therefore excluded from Table 7-2) include: Combustion Engineering Building, 200 Madison Avenue; Offices for St. Francis of Assisi Church, 144 West 32nd St.; and Lerner Store, 478 Seventh Ave.).

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW YORK (CONTINUED)

Id No.*	Resource Name	Location	Potential Build Alternative Effects
20-NY	William F. Sloan Memorial YMCA	360 West 34th St.	Permanent Indirect Effect: location near ADA Access/Emergency Personnel Access elevator entrance (323 West 34th Street) Temporary Indirect Effects: noise/vibration, dust, traffic and visual (ADA Access/Emergency Personnel Access elevator entrance at 323 West 34th Street)
21-NY	Webster Apartments	419 West 34th St.	Permanent Indirect Effect: location near fan plant (views to Dyer Avenue fan plant)construction access shaft
**22-NY	Christ Church Memorial	334-344 West 36 th St.	No effect
23-NY	West Side Jewish Center	347 West 34 th St.	Permanent Indirect Effect: location near ADA Access/Emergency Personnel Access elevator entrance (323 West 34th Street) Temporary Indirect Effects: noise/vibration, dust, traffic and visual (ADA Access/Emergency Personnel Access elevator entrance at 323 West 34th Street)
24-NY	St. Michael's Roman Catholic Church Complex	414-424 West 34th St.	Permanent Indirect Effect: location near Dyer Avenue fan plant construction access shaft (431 West 34 th Street) Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (Dyer Avenue Fan plant, access shafts, and staging area)
25-NY	Glad Tidings Tabernacle	325-329 West 33rd St.	No effect
26-NY	Former Manhattan Opera House	311 West 34th St.	Permanent Indirect Effect: location near ADA Access/Emergency Personnel Access elevator entrance (323 West 34th Street) Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (ADA Access/Emergency Personnel Access elevator entrance at 323 West 34th Street)
**27-NY	Former New York Edison Company	308-312 West 36th St.	No Effect
28-NY	Cheyenne Diner	411 Ninth Ave.	No Effect
29-NY	Former Hess Brothers Confectionary	502-504 West 30th St.	No Effect

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NYSHPO.

** Denotes resource that contributes to the Garment Center Historic District (72-NY),

NYCL = New York City Landmark.

Note: Additional NYCL-eligible properties that are not considered eligible for listing in the National Register or the State Register (and were therefore excluded from Table 7-2) include: Combustion Engineering Building, 200 Madison Avenue; Offices for St. Francis of Assisi Church, 144 West 32nd St.; and Lerner Store, 478 Seventh Ave.).

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW YORK (CONTINUED)

Id No.*	Resource Name	Location	Potential Build Alternative Effects
30-NY	Former Charles P. Rodgers and Co. Building	517-523 West 29th St.	No effect
31-NY	Former W & J Sloane Warehouse	541-561 West 29th St.	No effect
32-NY	550 West 29th Street	550 West 29th St.	No effect
33-NY	Hotel Pennsylvania	401 Seventh Ave.	Permanent Indirect Effects: location near 33 rd Street Fan Plant (137-139 West 33 rd Street) Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual 33 rd Street Fan Plant
34-NY	Equitable Life Assurance	383-399 Seventh Ave.	No effect
35-NY	Governor Clinton Hotel	371-377 Seventh Ave.	No effect
**36-NY	New Yorker Hotel	481-497 Eighth Ave.	Temporary Indirect Effects: noise/vibration, dust, traffic and visual (ADA Access/Emergency Personnel Access elevator entrance at 323 West 34 th)
**37-NY	Pennsylvania Building	225 West 34th St.	Permanent Indirect Effect: location near 35 th Street Fan plant/construction access shaft
38-NY	Former J.C. Penney Building	330 West 34th St.	Permanent Indirect Effect: location near ADA Access/Emergency Personnel Access elevator entrance (323 West 34th Street) Temporary Indirect Effects: noise/vibration, dust, traffic and visual (ADA Access/Emergency Personnel Access elevator entrance at 323 West 34 th)
39-NY	St. Francis Roman Catholic Church Complex	129-143 West 31st St.	No effect
40-NY	St. John the Baptist Roman Catholic Church and Convent	207-215 West 30th St.	No effect
41-NY	Penn Station Service Building	236-248 West 31st St.	No effect
42-NY	Former French Hospital	326-330 West 30th St.	No effect
43-NY	Hudson River Bulkhead	Battery Place to 59 th St. along the Hudson River	No effect

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NYSHPO.

** Denotes resource that contributes to the Garment Center Historic District (72-NY),

NYCL = New York City Landmark.

Note: Additional NYCL-eligible properties that are not considered eligible for listing in the National Register or the State Register (and were therefore excluded from Table 7-2) include: Combustion Engineering Building, 200 Madison Avenue; Offices for St. Francis of Assisi Church, 144 West 32nd St.; and Lerner Store, 478 Seventh Ave.).

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW YORK (CONTINUED)

Id No.*	Resource Name	Location	Potential Build Alternative Effects
44-NY	New York Terminal Warehouse Company	601 West 27 th St./ 600-624 West 28 th St.	Permanent Indirect Effect: Location near Twelfth Avenue fan plant (281-295 Eleventh Avenue) Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (Twelfth Avenue Fan Plant, access shafts, and staging area)
45-NY	High Line	Along 30 th St. between Tenth and Twelfth Aves., and Twelfth Ave. between 30 th and 34 th Sts.	No effect
46-NY	B. Altman & Company Building	188-198 Madison Ave./ 355-371 Fifth Ave.	No Effect
**47-NY	Loft Building	242 West 36 th St.	No effect
**48-NY	New York Telephone Company Building	206-238 West 36 th St.	No effect
**50-NY	Loft Building	470-472 Seventh Ave./ 202-204 West 36 th St.	No effect
**51-NY	Loft Building	462-468 Seventh Ave.	Permanent Indirect Effect: location near 35 th Street fan plant (218-222 West 35 th Street)
**52-NY	Loft Building	469-479 Seventh Ave.	No effect
**53-NY	Arsenal Building	463-467 Seventh Ave.	No effect
**54-NY	Loft Building	142-144 West 36 th St.	No effect
**55-NY	Loft Building	147 West 35 th St.	No effect
**56-NY	Loft Building	131 West 35 th St.	No effect
**57-NY	Johnson Building	1331-1349 Broadway	No effect
58-NY	Marbridge Building	1328 Broadway	No Effect
59-NY	The Collingwood	45 West 35 th St.	No effect
60-NY	Loft Building	28-30 West 36 th St.	No effect

Source: *Transit Link Consultants, 2008*

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NYSHPO.

** Denotes resource that contributes to the Garment Center Historic District (72-NY),

NYCL = New York City Landmark.

Note: Additional NYCL-eligible properties that are not considered eligible for listing in the National Register or the State Register (and were therefore excluded from Table 7-2) include: Combustion Engineering Building, 200 Madison Avenue; Offices for St. Francis of Assisi Church, 144 West 32nd St.; and Lerner Store, 478 Seventh Ave.).

KNOWN HISTORIC PROPERTIES WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS – NEW YORK (CONTINUED)

Id No.*	Resource Name	Location	Potential Build Alternative Effects
61-NY	Gorham Building/ Russeks Furs Building	390 Fifth Ave.	No effect
62-NY	Acker, Merrall & Condit Building	366-370 Fifth Ave.	No effect
63-NY	The Oakdale	36 West 35th St.	No effect
65-NY	Hotel McAlpin	1282-1300 Broadway	No effect
66-NY	Wilson Building	1270-1280 Broadway	No effect
67-NY	Hotel Martinique	1260-1268 Broadway	No effect
68-NY	G.J. Fuerth & Company Building/ Greeley Arcade	127 West 30th St.	No effect
69-NY	Loft Building	115-125 West 30th St.	No effect
70-NY	23rd Precinct Police Station	134-138 West 30th St.	No effect
71-NY	Loft Building	130 West 30 th St.	No effect
72-NY	Garment Center Historic District	Sixth Avenue to the east, Ninth Avenue to the west, West 35th Street to the south, and West 41st Street on the north	<p>Permanent Direct Effect: Construction of the Seventh Avenue Northwest Station Entrance would permanently displace the first floor and basement interiors of portions of Nelson Tower, a contributing resource</p> <p>Temporary Direct Effect: a portion of the 34th Street façade of Nelson Tower, a contributing resource, would be deconstructed, stored, and rebuilt using the original materials and design. No permanent impact to the building's façade.</p> <p>Permanent Indirect Effect: location near ADA Access/Emergency Personnel Access elevator entrance (323West 34th Street), 35th Street Fan Plant/Construction Access Shaft (218-222 West 35th Street), Seventh Avenue Southwest Station Entrance, and Seventh Avenue Northwest Station Entrance</p> <p>Temporary Indirect Effects: access restrictions, noise/vibration, dust, traffic and visual (ADA Access/Emergency Personnel Access elevator entrance at 323 West 34th Street, fan plant at 218-222 West 35th Street)</p>

Source: Transit Link Consultants, 2008

* ID numbers are not consecutive as certain properties identified during the DEIS were considered not eligible for inclusion in the National Register by NYSHPO.

** Denotes resource that contributes to the Garment Center Historic District (72-NY),

NYCL = New York City Landmark.

Note: Additional NYCL-eligible properties that are not considered eligible for listing in the National Register or the State Register (and were therefore excluded from Table 7-2) include: Combustion Engineering Building, 200 Madison Avenue; Offices for St. Francis of Assisi Church, 144 West 32nd St.; and Lerner Store, 478 Seventh Ave.).

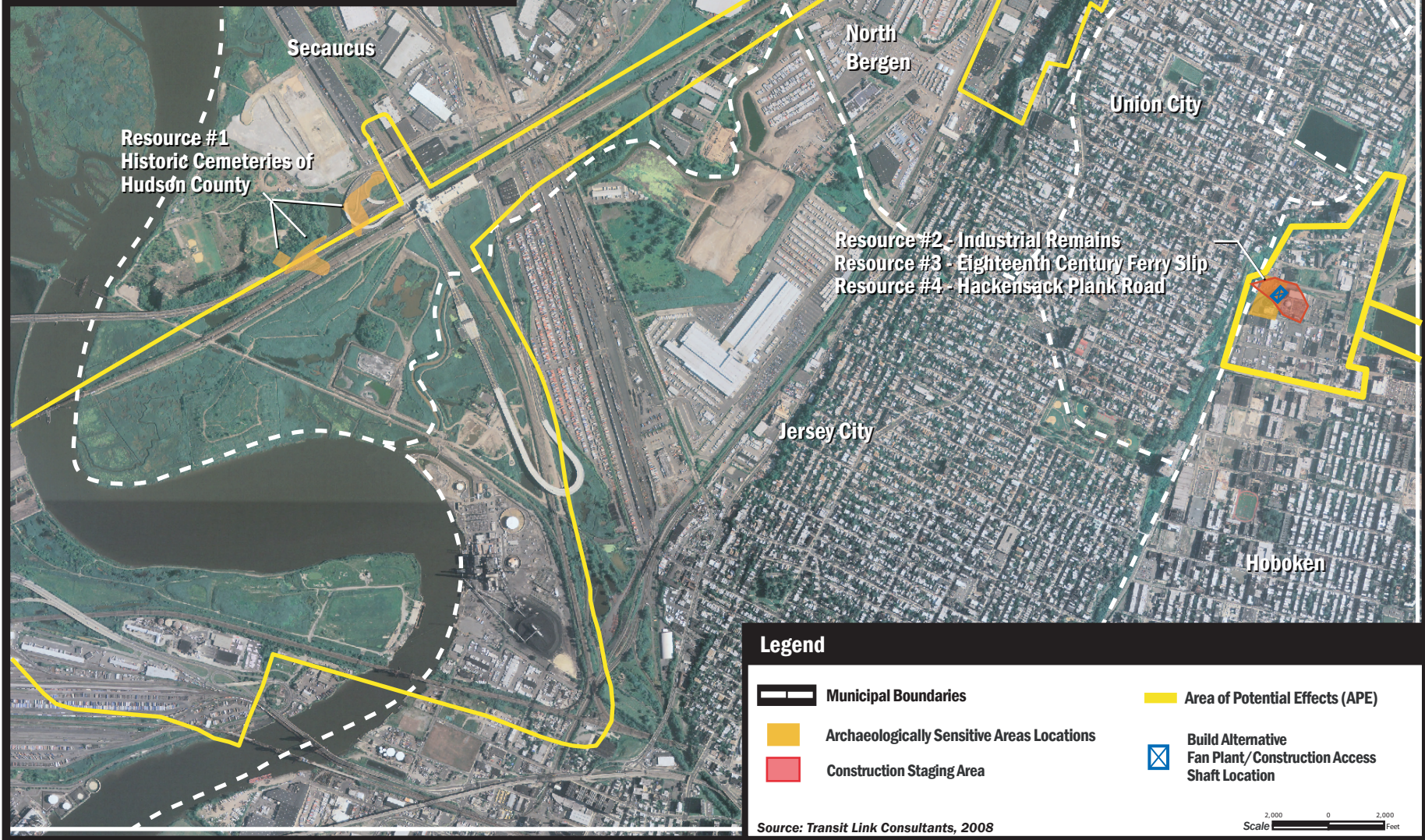
EXHIBIT C

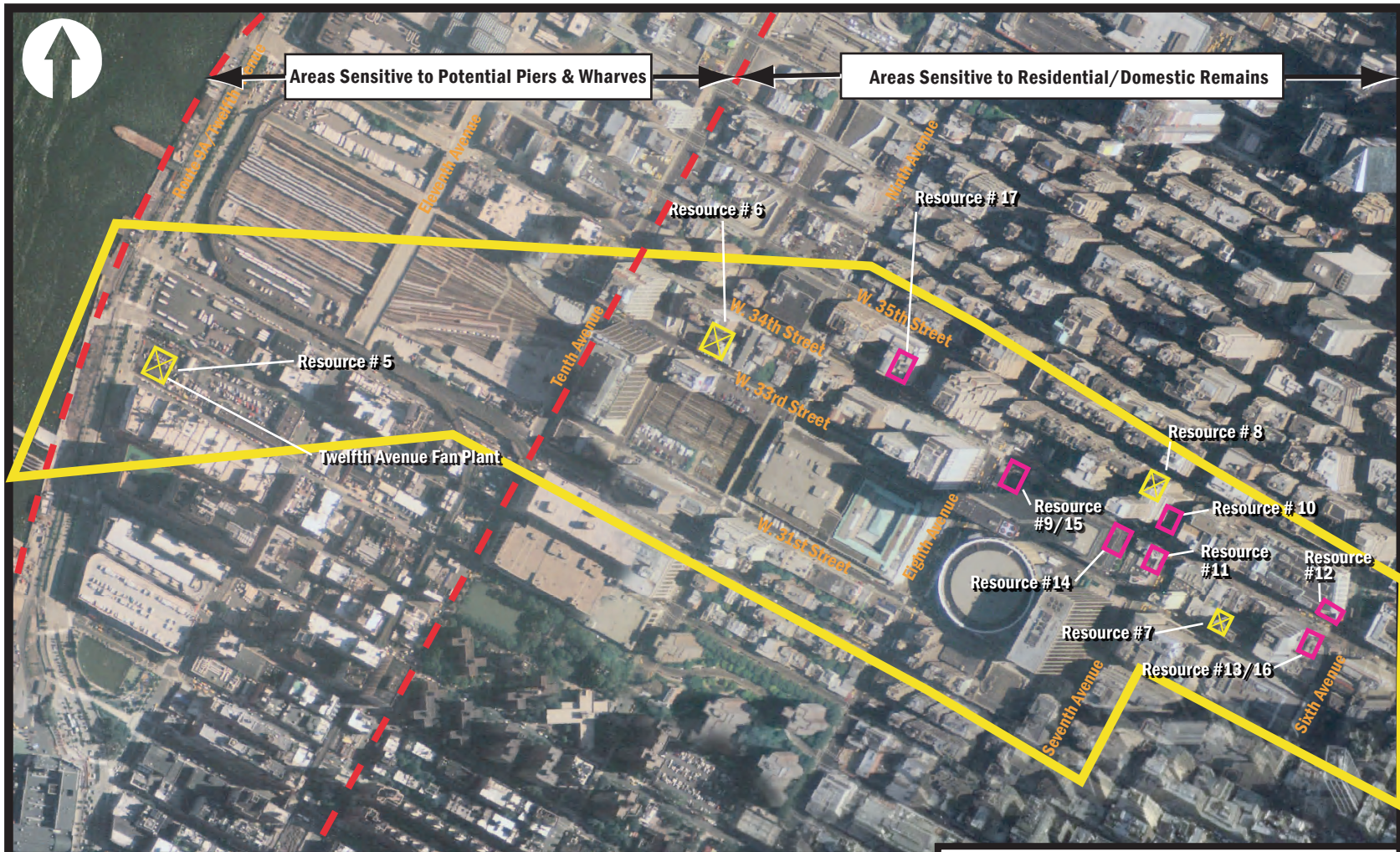
LOCATION OF ARCHAEOLOGICALLY SENSITIVE AREAS WITHIN THE AREA OF POTENTIAL EFFECTS (APE) – NEW JERSEY AND NEW YORK



Access to the Region's Core Programmatic Agreement

Figure C
ARC Build Alternative APE and Archaeological Sensitivity
in the Project Area - New Jersey





Legend

ARC Build Alternative
Fan Plant/ Construction Access
Location Shaft

ARC Build Alternative
Station Entrance Location

For Resource # See Tables 6-3 and 6-4

Boundary of Area of Archaeological Sensitivity

Area of Potential Effects (APE)



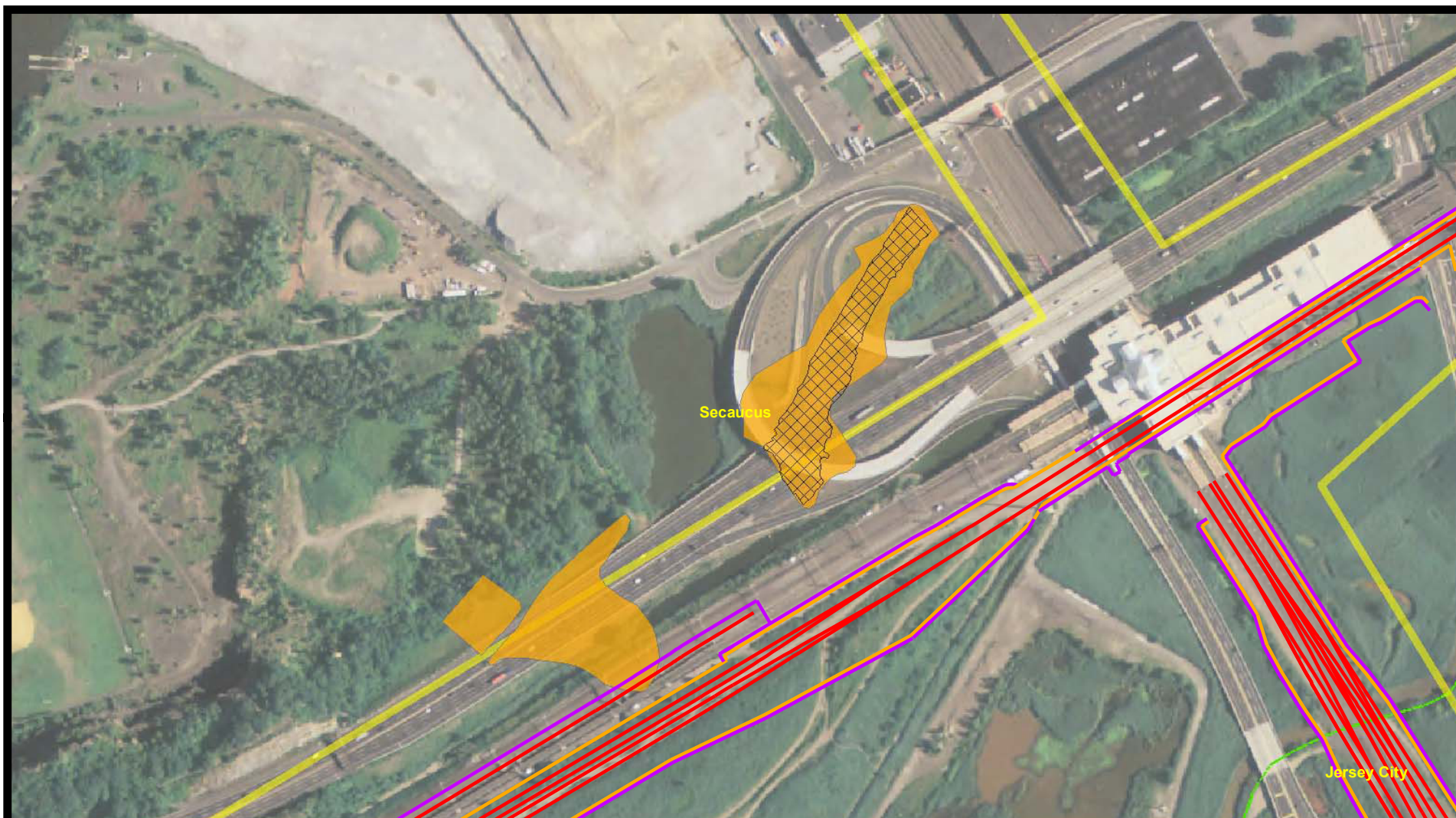
Access to the Region's Core
Programmatic Agreement

Figure D








**ARC Build Alternative APE and Areas of
Archaeological Sensitivity in the Project Area -
New York**

Not to Scale
Source: Transit Link Consultants, 2008





Legend

- | | |
|---|--|
|  Limit of Construction |  Extent of Internments Excavated by LBG / Potter's Field |
|  Limit of Infrastructure |  Historic Cemeteries of Hudson County, as Depicted on the 1906/1907 Map of the Hudson County Complex at Laurel Hill |
|  ARC Build Alternative |  Area of Potential Effects (APE) |
| |  Municipal Boundary |

Source: *Transit Link Consultants, 2008*



Access to the Region's Core
Programmatic Agreement

Figure E
Historic Cemeteries of Hudson County



200 0 200
Feet



Legend

- | | | |
|--|---|---|
|  1909 Industrial Plant |  Construction Staging Area |  Area of Potential Effects (APE) |
|  1936 Industrial Plants |  Hoboken Fan Plant | |

Source: Transit Link Consultants, 2008/1909 Hopkins Map

 **Access to the Region's Core**
Programmatic Agreement

Figure F
Potential Industrial Remains Hoboken, New Jersey

 NJ TRANSIT
The Way To Go

50 0 50
Feet



Legend

- ARC Build Alternative
- Limits of Marsh (could contain remnants of the Weehawken Ferry Slip)
- Area of Potential Effects (APE)
- Construction Staging Area
- Fan Plant

Source: Transit Link Consultants, 2008; 1841 Douglass Map.



Access to the Region's Core
Programmatic Agreement

Figure G
Potential 18th Century Ferry Slip - Hoboken, New Jersey



300 0 300
Feet



Legend

 Area of Potential Effects (APE)  ARC Build Alternative



Access to the Region's Core
Programmatic Agreement

Figure H
Potential Hackensack Plank Road -
Hoboken, NJ

Source: Transit Link Consultants, 2008 / 1811 Eddy Map



1,000 0 1,000
Feet

EXHIBIT D

LISTING OF AREAS OF POTENTIAL ARCHAEOLOGICAL SENSITIVITY WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS

AREAS OF POTENTIAL ARCHAEOLOGICAL SENSITIVITY WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS

Resource # (See Figures 6-1 and 6-2)	Name and Location of Potential Resource	Type of Potential Resource	Depth of Potential Resource/ Depth of Construction (feet)	Potential Cause of Adverse Effects from Construction
New Jersey APE				
1	Historic Cemeteries of Hudson County in Secaucus, NJ*	Historic burial ground	6/30	Trestle construction
2	Industrial Remains in Hoboken, NJ: 16th and Jefferson Street, at Hoboken Fan Plant/Construction Access Shaft and staging area	19 th century historic industrial remains	45/105	Shaft excavation and laydown/staging area
3	Eighteenth-Century Ferry Slip in Hoboken, NJ: 16th and Jefferson Street, at Hoboken Fan Plant/Construction Access Shaft and staging area	18 th century historic transportation facility remains	45/105	Shaft excavation and laydown/staging area
4	Hackensack Plank Road in Hoboken: 16th and Jefferson Street, at Hoboken Fan Plant/Construction Access Shaft and staging area	19 th century historic transportation facility remains	45/105	Shaft excavation and laydown/staging area
New York APE				
5	Potential Piers and Wharves: at Twelfth Avenue Fan Plant/Construction Access Shaft – (281-295 Eleventh Avenue) (formerly Hudson River Shoreline to Tenth Avenue in Manhattan)	Historic piers, wharves fill retaining devices	10-20/160	Shaft excavation
6	Residentially Related or Domestic Archaeological Resources: 431 West 33 rd Street at Dyer Avenue Fan Plant/Construction Access Shaft	Historic 19 th century domestic remains	10-20/205	Shaft excavation
7	Residentially Related or Domestic Archaeological Resources: 137-139 West 33 rd Street, at 33 rd Street Fan Plant /Construction Access Shaft	Historic 19 th century domestic remains	10-20/160	Shaft excavation
8	Residentially Related or Domestic Archaeological Resources: 218 West 35 th Street, at 35 th Street Fan Plant /Construction Access Shaft	Historic 19 th century domestic remains	10-20/160	Shaft excavation
9	Residentially Related or Domestic Archaeological Resources: Southeast corner of Eighth Avenue and West 34th Street (462-474 Eighth Avenue), at Eighth Avenue Southeast Station Entrance	Historic 19th century domestic remains	10-20/30	Shaft excavation

Source: Transit Link Consultants, 2008

Note: Secaucus Potter's Field has received an opinion of eligibility for listing on the National Register of Historic Places. (NJ HPO April 24, 2008) See Appendix 6.

AREAS OF POTENTIAL ARCHAEOLOGICAL SENSITIVITY WITHIN THE ARC APE AND POTENTIAL PROJECT EFFECTS (CONTINUED)

Resource # (See Figures 6-1 and 6-2)	Name and Location of Potential Resource	Type of Potential Resource	Depth of Potential Resource/ Depth of Construction (feet)	Potential Cause of Adverse Effects from Construction
New York APE (continued)				
10	Residentially Related or Domestic Archaeological Resources: Northwest corner of Seventh Avenue and West 34 th Street (442 Seventh Avenue), at Seventh Avenue Northwest Station Entrance	Historic 19 th century domestic remains	10-20/25	Shaft excavation
11	Residentially Related or Domestic Archaeological Resources: Southwest corner of Seventh Avenue and West 34 th Street (420 Seventh Avenue), at Seventh Avenue Southwest Station Entrance	Historic 19 th century domestic remains	10-20/31	Shaft excavation
12	Residentially Related or Domestic Archaeological Resources: Northwest corner of Broadway and West 34 th Street (1313 Broadway), at Broadway Northwest Station Entrance	Historic 19 th century domestic remains	10-20/16	Shaft excavation
13	Residentially Related or Domestic Archaeological Resources: Southwest corner of Broadway and West 34 th Street (1293 – 1311 Broadway), at Broadway Southwest Station Entrance	Historic 19 th century domestic remains	10-20/20	Shaft excavation
14	Residentially Related or Domestic Archaeological Resources: Southwest corner of Seventh Avenue and West 34 th Street (East Side One Penn Plaza), at ADA Access/Emergency Entrance	Historic 19 th century domestic remains	10-20/120	Shaft excavation
15	Residentially Related or Domestic Archaeological Resources: Southeast corner of Eighth Avenue and West 34 th Street (West Side One Penn Plaza), at ADA Access/Emergency Entrance	Historic 19 th century domestic remains	10-20/140	Shaft excavation
16	Residentially Related or Domestic Archaeological Resources: Southeast corner of West 34 th Street and Broadway (108-110 West 34 th Street), at ADA Access/Emergency Entrance	Historic 19 th century domestic remains	10-20/155	Shaft excavation
17	Residentially Related or Domestic Archaeological Resources: Midblock on West 34 th Street between Eighth and Ninth Avenues (323 West 34 th Street), at Employee-Only Entrance	Historic 19 th century domestic remains	10-20/160	Shaft excavation

Source: Transit Link Consultants, 2008

Note: Secaucus Potter's Field has received an opinion of eligibility for listing on the National Register of Historic Places. (NJ HPO April 24, 2008) See Appendix 6.

EXHIBIT E

TRIBAL CONSULTATION

As part of the ARC Project, FTA has initiated contact with federally and state-recognized Native American tribes and groups, including as part of the consulting parties and interested parties outreach and coordination. The following tribes and groups have been part of the consultation process for this project:

I. FEDERALLY RECOGNIZED NATIVE AMERICAN TRIBES CONTACTED FOR ARC

- Absentee-Shawnee Tribe of Oklahoma
- Cayuga Nation
- Delaware Nation of Oklahoma
- Delaware Tribe of Oklahoma
- Eastern Shawnee Tribe of Oklahoma
- Oneida Nation
- Oneida Tribe of Indians of Wisconsin
- Onondaga Nation
- Seneca Nation
- Seneca-Cayuga Tribe of Oklahoma
- Shawnee Tribe of Oklahoma
- St. Regis Band of Mohawk Indians
- Tonawanda Band of Seneca
- Tuscarora Nation
- Stockbridge-Munsee Community of Mohican Indians of Wisconsin
P.O. Box 70
Bowler, WI 54416

II. OTHER NATIVE AMERICAN GROUPS RECOGNIZED BY THE STATES OF NEW JERSEY OR NEW YORK CONTACTED FOR ARC

- Cherokee Nation of New Jersey
- Eastern Delaware Nation
- Eastern Lenape Nation of Pennsylvania
- Nanticoke Association
- Nanticoke Lenni-Lenape Indians Of New Jersey
- Powhatan Renape Nation
- Rankokus Indian Reservation
- Ramapough Mountain Indians
- Shinnecock Indian Nation

EXHIBIT F

DESIGN SPECIFICATIONS FOR CONTEXTUAL EFFECTS

Built Properties, which may consist of individual structures and sites, as well as historic districts, can be affected by visual impacts as well as physical impacts. The Access to the Region's Core (ARC) project Design Specifications for Visible Project Elements will be developed to ensure the following:

- Project elements that physically affect Built Properties are designed in a manner to minimize damage, removal, and loss of view of significant architectural features and to complement the existing historic built fabric; and
- Above-ground visible project elements are designed in a manner consistent with the Built Properties near them. This will include an assessment of the viewshed to and from Built Properties and new project elements to determine any potential contextual issues associated with new construction and enable project planners to prepare design specifications accordingly. Above-ground facilities for the project will consist of the following types of structures, which may have the potential to affect the visual context or historic setting of a Built Property:
 - Entrances to subway stations (including elevators, stairs, and escalators)
 - Emergency egress to subway stations
 - Ventilating structures for stations and/or tunnels
 - Cooling Towers
 - Other ancillary structures to be constructed above ground

The development of the project's design specifications will occur during the final engineering phase, once the locations of project facilities are exactly defined and their relationship with nearby Built Properties assessed. The design specifications will address not only how such facilities would be designed, but also the process by which their design is to be coordinated with the signatories to the Programmatic Agreement. Close coordination and consultation will be undertaken with NJSHPO, NYSHPO, and NYLPC, as appropriate.

The specifications will be prepared pursuant to the Secretary of the Interior's Standards for the Treatment of Historic Properties (37 CFR Part 68). They are expected to consist of the following guidelines for design as specified in the Secretary of the Interior's Standards for the Treatment of Historic Properties, Standards for Rehabilitation, which pertain to the modification of Built Properties and new construction:

- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the historic property or district. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale, and proportion, and massing to protect the integrity of the property and its environment.
- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Based on these standards, new construction will be planned to reflect the design trend and concepts of contemporary architectures so as to distinguish historic building fabric from new. New construction will

also be designed to reflect the architectural characteristics, visual context, and historic setting of the Built Property including:

1. Orientation on the site
2. Setback from the street
3. Building envelope
4. Size, scale and massing
5. Roof shape
6. Façade rhythm
7. Building proportions
8. Architectural details
9. Interior treatments
10. Ornamentation
11. Structural system
12. Exterior and roof cladding
13. Texture and color of materials

Should any damage occur to a Built Property(s) during project construction, it will be repaired as described in Exhibit G, "Construction Protection Plans for Historic Properties" of this Programmatic Agreement.

EXHIBIT G

CONSTRUCTION PROTECTION PLAN FOR HISTORIC PROPERTIES

The primary objective of the Section 106 process is to identify Historic Properties and to protect them from adverse effects, including damage or destruction due to a project's construction. The ARC Project (Project) Construction Protection Plans (CPPs) will provide protocols and stipulations for protecting identified Historic Properties located within the Project's Area of Potential Effects (APEs) during the demolition, excavation, and construction phases of the project. In practice, the CPPs will provide guidance for those designing as well as those constructing the project.

Prior to the commencement of any project demolition, excavation, or construction, detailed CPPs will be developed in consultation with the NJSHPO, NYSHPO, NYLPC, FTA, and all other relevant city and state agencies, including the New York City Department of Buildings. The CPPs will be based on the requirements stipulated in SHPO and NYLPC documents concerning blasting and vibration and other relevant guidance, such as the New York City Department of Buildings Technical Policy and Procedures Notice #10/88 regarding historic buildings. Given the length of time over which the Project will be undertaken (through 2017), and the use of a phased method of construction, it is anticipated that individual CPPs within a comprehensive ARC CPP will be drafted specifically for each major construction segment.

The CPPs will first detail the precise descriptions, locations, and dispositions of all known Historic Properties within the ARC APE. All Historic Properties within the APE will be plotted on the project's geographic information system (GIS), along with the construction alignment to provide a basic awareness to all involved of the project's construction. A typical CPP will consist of the following protective measures:

1. A preconstruction inspection of the potentially affected Historic Property(s) will be undertaken by professional engineers licensed to practice in the State of New Jersey or New York (the "Inspecting Engineer"), to ascertain any pre-existing damage, existing structural distress, and any potential weakness of the Historic Property(s) foundations or structures. This activity will take place as part of the construction contractor's work.
2. A written report will be prepared by the Inspecting Engineer (referenced above) documenting any potential weakness or structural distress, and assessing the stability of any applied ornament, together with a protocol addressing any recommended remediation to secure problem areas prior to the commencement of any construction activities that may affect the Historic Property(s). The written report will be supplemented with photographic documentation – in the form of 8 by 10-inch color photographs keyed to a map or plan – in order to provide a clear record of existing conditions and any problem areas.
3. The Design Engineer for the project will specify vibration limits for each Historic Property along the alignment that could be affected by construction. The criteria will adhere to the appropriate NJ standards, and the appropriate NYLPC standards, which limit construction vibration to a maximum peak particle velocity of 0.5 inches per second for historic structures and 2.0 inches per second for non-historic structures. More stringent vibration criteria may be adopted for specific historic structures, based upon the findings of the preconstruction surveys. These limits will be adhered to

and monitored for the preservation of the Historic Property(s) by NJ TRANSIT's construction manager.

4. The construction contractor will thereafter ensure that the appropriate vibration limits and any other criteria deemed appropriate by the project design engineer are incorporated into the construction plan. The construction contractor will be responsible for monitoring these controls with periodic inspection by the owner's representative.
5. Under supervision of the Inspecting Engineer, the construction contractor will provide continuous vibration monitoring inside the Historic Property(s), pursuant to the design protocol during demolition, excavation, and construction operations. Seismographs will be installed in the basement and/or the first floor of the Historic Property(s). These units will be located so that they would be away from the general public but accessible to the technicians who must monitor them. The seismographs would measure vibration levels during demolition, excavation, and construction. Prior to the commencement of demolition and excavation operations, the seismographs would be installed and tested to ensure that they are in working order and to enable taking baseline readings. Daily logs of the seismic monitoring would be maintained and submitted to the NJSHPO, NYSHPO, and NYLPC upon request.
6. If any excessive vibration (which meets or exceeds the peak velocity level) to a Historic Property is detected, the Inspecting Engineer will notify the Resident Engineer (the Construction Manager's on-site manager) to stop work causing this excessive vibration. The Historic Property(s) will be inspected for any structural degradation that may have occurred. The Inspecting Engineer will submit a report to NJSHPO, NYSHPO, and/or NYLPC detailing the reason for exceeding the peak particle velocity level and the presence or lack of damage to the Historic Property(s). If any damage was sustained, the Historic Property(s) will be secured, and the work that caused any damage would be altered to reduce the vibration levels to within acceptable limits. Following the corrective measure to ensure that the vibration levels are reduced, the Resident Engineer will restart the work.
7. In addition, during excavation the Inspecting Engineer will monitor any exposed vertical rock faces or fissures, joint orientation, and potential weaknesses to ensure that underground utilities that service the Historic Property(s) are protected from damage.
8. Should any cracking in the Historic Property(s) occur during demolition, excavation, or construction, crack monitors would be installed over each crack and monitored on a weekly basis until the Inspecting Engineer deems the cracks to be stable.
9. A general plan will be prepared for the protection of Historic Properties from heavy machinery, including the installation of construction barriers, sensitive Historic Property signage, and the development of machinery operating protocols.
10. Should any Historic Property(s) sustain damage during Project construction, such damage will be repaired and reasonable steps will be undertaken to restore the structure to its condition prior to being damaged. Before undertaking such work, the Inspecting Engineer will consult with NJSHPO, NYSHPO, and/or NYLPC as appropriate regarding the proposed method(s) of repair work and materials to be used, and similarly will consult with NYLPC when the damage is to a Historic Property that is an LPC individual landmark, interior landmark, scenic landmark or in an LPC historic district. If any work is to be performed on a Historic Property that is an LPC individual landmark, interior landmark, scenic landmark or in an LPC historic district, LPC shall review and approve such work prior to work beginning and the work shall be performed in compliance with LPC standards and requirements.

EXHIBIT H

CONSTRUCTION PROTECTION PLAN FOR ARCHAEOLOGICAL RESOURCES

One objective of the Section 106 process is to identify Archaeological Properties and to protect them from adverse effects, including damage or destruction due to a project's construction. Seventeen (17) archaeologically sensitive areas were defined within the APE during the EIS phase of the ARC Project. The Construction Protection Plan (CPP) for Archaeological Properties will encompass each of these 17 sensitive areas and any additional sensitive areas that are defined during the course of the project. It will provide protocols, methods and stipulations to identify whether archaeological properties in fact exist in any areas defined as sensitive and then the protocols, methods and stipulations to protect to properties.

The CPP is the roadmap that guides the myriad activities that are required to fulfill the commitment to identify and protect archaeological properties from adverse effects. It details the procedures and protocols to be adopted to identify the presence or absence of archaeological resources prior to the initiation of construction activities, whether that involves, excavation, demolition, or any other preparatory activities. It will also detail the protocols to be adopted for the archaeological monitoring of construction and codifies the procedures to be adopted should archaeological resources be encountered while excavation and construction are taking place. As such, the CPP for Archaeological Properties incorporates all activities related to the protection of archaeological resources included in the Programmatic Agreement and further elaborated in **Exhibits I, J, K, L, M, N, O and P**. Finally, the CPP presents the order in which these tasks will be accomplished. These activities will occur during Final Design. It will include the following elements, presented here by the sequence in which they should be performed.

- I. **Additional Evaluation of Archaeologically Sensitive Areas (Exhibit I).** This task should be initiated once the ROD is signed. Additional research carried out under this task will assist in refining the assessment of archaeological sensitivity for those areas identified in the EIS as having the potential to contain NR-eligible archaeological properties. Decisions regarding the need to conduct archaeological testing and/or monitoring of construction will be based on the results of this task, together with the results of the soil boring program (see below).
- II. **Soil Boring Program (Exhibit J).** Information derived from the review of future geotechnical and/or environmental borings will be integrated into the interpretation of soil boring data conducted during the EIS to further refine the assessment of the potential for archaeological resources in the APE, particularly in deep stratigraphic settings that characterize the Hudson River shoreline in New Jersey and New York. Revised assessments will be incorporated in the additional evaluation of archaeologically sensitive areas (**Exhibit I, above**) and may revise recommendations for archaeological testing and/or monitoring.
- III. **Construction and Archaeological Phasing Plan (Exhibit P).** This plan identifies when specific construction contracts are anticipated to be activated, what archaeological resources may be affected by that contract, where they are located, and what specific construction activities may affect those resources. The stipulations and conditions that should be included in the various construction bid packages regarding the protection of archaeological properties should be developed as part of this task.

- IV. **Identification of Additional Archaeologically Sensitive Areas (Exhibit N).** Construction design plans will be reviewed at the 30%, 60% and 90% to determine whether any new areas that may be impacted by construction should be considered archaeologically sensitive and require detailed studies and/or mitigation efforts. These submissions will be provided to the NJSHPO and NYSHPO for their review and comment on potential archaeological issues. The need to assess, test and possibly mitigate additional archaeological properties will be integrated into the plans and procedures developed for the archaeologically sensitive areas identified in the EIS.
- V. **Field Testing Plan (Exhibit K).** The field testing plan will be initiated according to the archaeological phasing plan, either in advance of construction or during construction. It stipulates what methods and procedures shall govern the investigation of archaeologically sensitive areas identified in the EIS (see **Exhibit D**) and any additional archaeologically sensitive areas (**Exhibit N**).
- VI. **Protocol for Work in Areas Potentially Sensitive for Human Remains (Exhibit L).** The protocol primarily establishes the monitoring and testing procedures that govern work in the area proximate to the Historic Cemeteries of Hudson County (HCHC) in Secaucus, the guidelines for which will serve if human remains are unexpectedly found elsewhere in the APE. The Protocol also includes a disinterment/reinterment plan should human remains be encountered during the construction project.
- VII. **Unanticipated Discoveries Plan (Exhibit O).** This plan puts in place the procedures that need to be followed in the event that an unexpected archaeological discovery is made during construction in any part of the APE. The plan includes provisions for the discovery of purely archaeological deposits, as well as the unanticipated discovery of human remains (see **Exhibit L**).
- VIII. **Mitigation, Data Recovery, Curation and Public Interpretation (Exhibit M).** This exhibit provides details on the tasks that would be completed if an NR-eligible archaeological property is encountered in the APE and cannot be avoided. Those tasks include the completion of a data recovery investigation, the processing and curation of all artifacts and records produced during the data recovery investigation, and a public outreach program to inform the public of the investigation and its results.

EXHIBIT I

ADDITIONAL EVALUATION FOR ARCHAEOLOGICALLY SENSITIVE AREAS

The purpose of conducting additional evaluations of areas defined as archaeologically sensitive in the EIS phase of the project is to refine the assessment of archaeological sensitivity in each of these areas and provide recommendations for the most appropriate methods to test those sensitivity assessments. The specific tasks to be undertaken and methodologies to be employed in order to complete the additional evaluation are the following:

I. PLAN REVIEW

NJ TRANSIT shall submit any plans developed pursuant to potential physical and contextual effects described above to FTA, and, as applicable, to NJSHPO and NYSHPO at 30 percent, 60 percent and 90 percent completion stages, in advance of any construction that may result in any such effects. FTA, NJSHPO and NYSHPO review and comment on such submissions within 30 days or it would be presumed that they have no comments.

II. ADDITIONAL ARCHAEOLOGICAL SENSITIVITY EVALUATIONS

- A. Additional Documentary Analysis for HCHC and Adjacent Area. LBG's (2005) report entitled *Potter's Field Disinterment/Reinterment Secaucus Interchange Project* provides a concise and thorough historic overview and historic contextualization of the various state institutions that were once established in the vicinity of Snake Hill, the historic cemeteries associated with those institutions, and the issues surrounding the extent documentary records and physical remains of those cemeteries. Consequently, for the purposes of excavation monitoring and the initial site investigation, background research for the topic intensive survey will be limited to collecting all pertinent historic maps of the cemeteries and a review of the three extant Hudson County Burial Registers. Historic map images would be imported into a Geographic Information System (GIS) together with project design plans in order to accurately plot the mapped locations of the cemeteries' boundaries with project design and areas of impact. In the event that human remains are encountered within the APE, an attempt will be made to correlate those remains with the documentation provided by the Burial Registers in order to identify the deceased.

Otherwise, the information provided in the LBG report is considered sufficient for the purposes of providing guidance for the field investigation included in this scope of work and for interpreting and contextualizing any cultural resources or human remains that may be encountered during this effort. The repositories to be visited to collect the cartographic resources include:

- Jersey City Free Public Library, Jersey City, NJ
- New Jersey State Library, Trenton, NJ
- New York Public Library, NYC, NY
- Hudson County Department of Public Resources, Secaucus, NJ
- Hudson County Department of Engineering, Secaucus, NJ

- Map Room of the New York Public Library, NY
- B. Hoboken Fan Plant Background Research. Background research for the Hoboken Fan Plant is necessary to fully document the historical development of the property and provide contextual information for assessing the National Register eligibility of any historic archaeological sites that may be found in the APE. A complete array of cartographic sources depicting the historical development of the property and surrounding area will be obtained and geo-referenced for analysis in GIS. A chain of title will also be established for the property, and information on the history of the various companies that operated at this location will be gathered from the following repositories:
- Hudson County Courthouse, Jersey City, NJ;
 - New Jersey State Library, Trenton, NJ;
 - New Jersey State Archives, Trenton, NJ;
 - New Jersey Treasury Department, Division of Revenue, Trenton, NJ;
 - United States National Archives, Philadelphia, PA.
- C. APE in Manhattan. In order to formulate a mitigation plan for those areas of the project occurring in Manhattan, a GIS database will be created to organize and analyze a range of map-based and document-based datasets. These datasets may include but are not limited to:
- Scanned and geo-referenced historical maps (e.g., Sanborn Fire Insurance Maps, historic sanitary and topographical maps, historic property maps, etc.);
 - Current and historical USGS 7.5 minute quadrangles;
 - Historic and current aerial photos;
 - Digital ortho-quads (DOQs);
 - Digital elevation models (DEMs);
 - Survey data of existing utilities with elevation data in CADD format provided by the contractor;
 - Proposed construction/excavation footprints with elevation data in CADD format provided by the contractor;
 - Published geological datasets (e.g., soil maps, bedrock geology maps, surficial geology maps etc.)
 - Geological boring data provided by the contractor
 - Parcel maps
 - Chain-of-title information for specific parcels
 - Maps of existing subterranean structures (e.g., transportation tunnels, sewers, etc.)

The goal of compiling and analyzing these diverse datasets is two-fold. First, this data will be used to determine the location of documented historic structures within the area impacted by construction/excavation activities. Second, to best focus monitoring activities and create a detailed site-tailored monitoring plan, the vertical and horizontal location of existing subterranean structures and utilities (e.g., electrical lines, water pipes,

sewers, transits tunnels, etc.), depth to bedrock data and surface elevation data will be analyzed to determine the horizontal and vertical extent of soils that are unlikely to have been impacted by previous excavation activities. Although the predicted locations of these pockets of undisturbed soil are only as reliable as the datasets on which they are based, the resulting modeling of the subsurface geography will provide a powerful tool for understanding the degree and extent to which archaeologically sensitive materials may exist there.

III. ADDITIONAL ARCHAEOLOGICALLY SENSITIVE AREAS

If during the course of the project additional areas are incorporated into the APE and are considered to be potentially sensitive for archaeological resources, additional background research will be conducted to identify the types of archaeological resources that may be present and assess the need to conduct further studies to confirm the presence or absence of NR-eligible archaeological properties in the additional area(s). Research may include, but is not limited to the following:

- Historic map collection and analysis
- Reconstruction of Chain-of-Title
- Soil borings
- Ground Penetrating Radar Survey
- Oral informant interviews
- Background documentary research (local or state libraries, SHPO offices, LPC)

IV. REPORTING TO NJSHPO, NYSHPO, NYLPC, AND FTA

Following completion of the additional research, NJ TRANSIT shall prepare a report summarizing the results of the archaeological sensitivity assessments and shall submit this report(s) as an addendum to the Phase IA to NJSHPO, NYSHPO, NYLPC, and FTA. The FTA, NJSHPO and NYSHPO shall review and comment on such submissions within 30 days or it would be presumed that they have no comments.

EXHIBIT J

ARC PROJECT SOIL BORINGS PROGRAM AND ARCHAEOLOGICAL RESOURCES PROTOCOL

As stated in Section IIC.2 of the Programmatic Agreement, a soil boring program has already been initiated by NJ TRANSIT during the EIS and Preliminary Engineering phases of the ARC project. The purpose of the program is to determine geotechnical and environmental subsurface conditions along the ARC alignment. In order to further refine our understanding of the archaeological sensitivity of the APE, any future geotechnical and/or environmental borings to be conducted as part of the ARC project shall adhere to the following procedures. Borings may occur at any point preceding construction, including during and after Final Design.

I. RETAIN PROFESSIONAL ARCHAEOLOGIST(S)

NJ TRANSIT agrees to retain the services of a professional archaeologist(s) who will provide archaeological expertise during the Soil Borings Program as described below. The professional archaeologist(s) will meet at minimum the Secretary of the Interior's Professional Qualification Standards.

II. REVIEW OF BORINGS LOGS BY THE PROFESSIONAL ARCHAEOLOGIST(S)

- A.** NJ TRANSIT agrees that any boring samples taken and/or boring logs prepared as a result of geotechnical borings taken by NJ TRANSIT to determine construction-related subsurface soil conditions will be done in a manner so as to provide information useful to a professional archaeologist(s). Such boring logs will be provided to the professional archaeologist for review to allow an assessment of subsurface conditions, such as previous disturbance including filling and grading, and/or the presence of original soils to refine the EIS conclusions about the potential presence or absence of archaeological resources in areas identified as archaeologically sensitive in Access to the Region's Core Project Phase IA Archaeological Assessment dated January 2008 ("Phase IA"), prepared as part of the EIS, and/or any subsequent studies.
- B.** For each of the future boring locations, the professional archaeologist(s) will determine one of the following:
 - 1. The area exhibits archaeological sensitivity
 - 2. The area exhibits a lack of archaeological sensitivity
 - 3. The boring samples and/or records provide inconclusive findings
- C.** Any sites that are determined to contain no archaeological sensitivity will be eliminated from further archaeological consideration. Sites that retain potential archaeological sensitivity or for which potential sensitivity remains undetermined will be carried forward for additional archaeological evaluation, including additional documentary research and/or field testing.

III. REQUEST FOR ADDITIONAL SOIL BORINGS BY THE PROFESSIONAL ARCHAEOLOGIST(S)

If the professional archaeologist(s) determines that a boring is needed in an area/location of likely significance that has not been investigated previously, and NJ TRANSIT deems that such a request is appropriate, then such boring will be undertaken.

IV. GEOTECHNICAL BORINGS IN POTENTIAL BURIAL GROUND SITES

- A.** At any locations identified as sensitive for human remains, borings will be avoided wherever practicable. Test borings will instead be performed in nearby areas not identified as sensitive for human remains.
- B.** Where borings cannot be practicably avoided in the areas that have been identified as potentially sensitive for human remains (Area Adjacent to the Historic Cemeteries of Hudson County), borings will be performed in a manner to avoid any insensitive disturbance to human remains as set forth below:
 - 1.** Hand auguring will be performed in the sensitive area to a depth of at least 6 feet to exceed the depth of any utilities. Beyond that depth, hand auguring will be undertaken based on engineering and safety constraints. At the point where hand auguring is no longer feasible, the soil boring will be undertaken.
 - 2.** The professional archaeologist(s) will be present on-site during hand auguring and the execution of the boring to identify any skeletal material, if encountered. If any skeletal material is encountered, the archaeologist will contact a physical anthropologist/forensic archaeologist, who will be on-call as described below in IV.B.3.
 - 3.** A physical anthropologist/forensic archaeologist will be on-call in the event that skeletal material is encountered, to properly identify if the skeletal material is human. The physical anthropologist/forensic archaeologist will be located in the project area so that he/she may have prompt access to the site. If the remains are identified as human, the protocol for the notification of appropriate parties and treatment of human remains set forth in Section II. C. 4. of the Programmatic Agreement will be followed.
 - 4.** Subsurface work will only be undertaken in areas potentially sensitive for human remains (Area Adjacent to the Historic Cemeteries of Hudson County) following the prior notification of and opportunity for consultation with the New Jersey Cemetery Board, the State of New Jersey Attorney General's office, and appropriate descendant community(s), following protocols described in Exhibit L of this Programmatic Agreement.

V. REPORTING TO NJSHPO, NYSHPO, NYLPC, AND FTA

Following completion of any borings that demonstrate or confirm archaeological sensitivity, NJ TRANSIT shall immediately prepare a brief report summarizing the results of the archaeological evaluations and shall submit this report(s) as addenda to the Phase IA to NJSHPO, NYSHPO, NYLPC, and FTA as appropriate. In the event that the boring results are either negative or inconclusive, the results

will be reported at such time as all borings are completed, and the results of all tests will be presented in a single addendum report to the above-referenced agencies.

EXHIBIT K

FIELD TESTING PLAN FOR ARCHAEOLOGICALLY SENSITIVE AREAS

Archaeological field testing plans will be developed for each area in the ARC APE for which additional evaluations (**Exhibit I**) and/or soil borings (**Exhibit J**) have determined or confirmed archaeological sensitivity. Archaeological investigations will be prioritized according to overall project schedule and are designed to identify the presence or absence of potential Archaeological Properties within the APE. The procedures to be employed may take the form of either archaeological testing prior to construction or, where necessary, archaeological monitoring during construction. The Testing Plan will include a description of all methodologies to be employed during the archaeological field investigation, subsequent laboratory processing of artifacts recovered, and reporting.

Prior to commencing any field testing and/or monitoring, NJ TRANSIT shall submit the Field Testing Plan for NJSHPO and/or NYSHPO review. NJSHPO and/or NYSHPO review, comment and concurrence on all such submissions is required prior to the implementation of the Plan for any specific location.

Based on the currently defined archaeologically sensitive areas, the field testing plan will contain the following elements:

I. ARCHAEOLOGICAL TESTING

- A. Historic Cemeteries of Hudson County (HCHC). Discussion of the archaeological testing plan for the Area Adjacent to the HCHC is described in full in **Exhibit L**, 'Protocol for Work in Areas with the Potential for Human Remains.'
- B. Hoboken Fan Plant. Archaeological field testing in the APE for the Hoboken Fan Plant will commence with the use of Ground-Penetrating Radar (GPR). GPR will be brought on site to conduct a non-invasive remote sensing survey of the entire APE. The purpose of the GPR survey is to provide precise locational information on subsurface anomalies that may indicate the presence of architectural features such as walls or floors of earlier industrial buildings, or other structures associated with the historic Hackensack Plank Road or an 18th-century ferry slip.

The results of the remote sensing survey will be used to guide the placement of strip blocks in which mechanical equipment may be used to strip overburden to the level of archaeologically sensitive stratum. If, in the event that the GPR survey does not provide adequate guidance on the placement of these strip blocks, historic map research will be used for that purpose. The strip blocks will be placed so as to maximize the information return on the resources under investigation. Specifically, they will be situated so as to expose exterior foundation walls, interior partition walls, flooring and any other cultural features and/or artifacts related to the industrial function of the building. Mechanical excavations in the strip blocks will be limited to the removal of overburden and to exposing features and/or culturally-sterile subsoil. All mechanical excavations will be done under the guidance of a professional archaeologist.

Once fill has been removed from each strip block, all cultural features exposed within the block will be cleaned by hand using hand tools. Artifacts found *in situ* will have their provenience recorded and will be removed to the laboratory for processing. All cultural features exposed in the strip block will be documented photographically and their dimensions and locations mapped using a Total Station. These data will be integrated into the GIS mapping for the project.

All artifacts recovered during testing will be processed in an off-site laboratory. Laboratory processing consists of cleaning and cataloging all artifacts. The catalog will contain a complete description of every artifact and its known cultural affiliation and dating. Artifacts prone to degradation will be stabilized, and lithic artifacts will be treated with appropriate care to guard against damage to use-surfaces. The artifact assemblage will be culled of redundant and repetitive artifacts according to New Jersey State Museum guidelines. If the artifacts are associated with a National Register-eligible archaeological site, a Deed of Gift agreement with the landowner(s) will be sought for the artifacts. If the landowner deeds the assemblage to the State, the artifacts will be curated and later transmitted to the New Jersey State Museum at the time of Final Report submission, should the Museum agree to accept them. If the landowner does not agree to relinquish ownership, the artifacts will be returned to the landowner.

Once the artifact sample has been processed, it will be analyzed to evaluate the nature of the artifact deposits identified during testing and their depositional contexts. The goal of the analysis is to determine the integrity of the deposits and their potential to provide new and significant information on the history or prehistory of the locale and region. The analysis is necessary to determine whether the deposits constitute an Archaeological Property that requires protection.

II. ARCHAEOLOGICAL MONITORING

For any areas within the ARC APE for which additional research (**Exhibit I**) has determined are archaeologically sensitive, but for which archaeological testing prior to construction is not feasible (to be established under the provisions found in **Exhibit P**), archaeological monitoring during construction shall be performed. Plans for archaeological monitoring of specific locations will be developed and submitted to NJSHPO or NYSHPO for review and comment, according to the stipulations developed in this Exhibit and in **Exhibit L**, for any areas for which human remains may be anticipated. Archaeological monitoring plans will contain the following components:

- A. Monitoring goals and methodologies. The monitoring plan for each locale will specify what type(s) of archaeological resource(s) are anticipated in that area and clearly identify what associated artifact deposit(s) or cultural feature(s) will identify the presence of those resources. The specific methods that may be employed during monitoring to identify the resource(s) will also be included in the plan.
- B. Monitoring Personnel. The monitoring plan will include a definition of the roles and responsibilities of each member of the archaeological monitoring team and the required qualifications for the individuals that fulfill each of those positions. Minimally, the team will consist of a Cultural Resources Manager (CRM), a Principal Investigator (PI), Field Director (FD) and Field Technicians (FT).

1. *Cultural Resources Manager.* The CRM will meet the qualifications specified in the Secretary of the Interior's Professional Qualifications for Archaeology (46CFR4471.6) and have the appropriate professional background experience for the types of resources anticipated at the work site. The CRM will be the point of contact between the monitoring team, NJ TRANSIT, officers of the Contractor, project sponsors and state and federal review agencies. They will be responsible for monitoring the progress of monitoring activities, adherence to the monitoring protocol by the archaeological team, schedule and budget. They will be the conduit for communicating issues originating within the monitoring team to the appropriate parties. Periodic status meetings between the CRM, PM and review agencies may be advisable, depending on the length and complexity of the project. Brief status reports prepared by the CRM may be an appropriate alternative.
2. *Principal Investigator.* This individual will also meet the qualifications specified in the Secretary of the Interior's Professional Qualifications for Archaeology (46CFR4471.6). The Principal Investigator (PI) will be on site at all times specified in the monitoring protocol. They will be responsible for implementation of the protocol on site and the quality of work performed by the monitoring team. The PI will confer with the Foreman for the Contractor (or other agreed upon person) on any decision to halt work and the Contractor will direct their personnel accordingly. The PI will be responsible for communicating to the Contractor's Foreman the need for a member of the monitoring team to provide guidance to excavators in areas of high sensitivity or where archaeological remains have already been found. In these circumstances, 'guidance' refers to telling where and how deep an excavator is to dig and when and for how long they are to stop. This level of communication is necessary for creating a safe work environment.

The PI is also responsible for informing themselves of any Health and Safety Plan (HASP) that is developed for the work site by the Contractor, know who the Health and Safety Officer is, and assure that the monitoring team is in compliance with its rules and regulations included in the HASP. The monitoring team will be equipped and wear all required personal protective equipment (PPE) as specified in the HASP. The monitoring team should also be notified of and included in any on-site meetings or briefings held by the Health and Safety Officer.

3. *Field Director.* The FD will be responsible for assisting the PI in directing and managing the efforts, collecting and organizing equipment, paperwork, etc. on a daily basis. They will be competent to review and evaluate the accuracy and adequacy of field notes and drawings produced by the FTs. The FD should have a minimum two years experience investigating sites of comparable cultural affiliation, date and function.
4. *Field Technician.* Field technicians should have the requisite skills and experience to work with minimum supervision and produce acceptable field notes, scaled drawings or other forms of recordation required by the project. They work under the direct supervision of the FD and the PI.

5. *Monitoring Teams.* Archaeological monitoring will be accomplished through the formation of monitoring teams. Each team will be comprised minimally of three individuals and may involve more, depending on site conditions and requirements. Although any task assigned to the monitoring team is the responsibility of all team members to complete, one individual will be primarily responsible for any monitoring of the movement of any mechanical equipment in the area of the team's activities. A second individual will be primarily responsible for any hand-excavation tasks that are assigned to the team. The third individual will be responsible for assuring that all recordation tasks (e.g., photography, scale drawings, note-taking) assigned to the team are completed satisfactorily. All monitoring teams will be directed by the FD and/or PI and will report directly to them. The number of teams on site at any one time will be dictated by the pace of excavation and the number and size of finds made during the course of the monitoring project.
- C. Monitoring Protocol. A Monitoring Protocol (Protocol) will be established for each sensitivity area or, if multiple areas are sensitive for the same type(s) of resource(s) and are susceptible to the same type(s) of construction impact(s), a single protocol will be developed for the collective sites. The Monitoring Protocol will define the following:
1. *Site Work Conditions.* The Protocol will establish what conditions are anticipated at the site, particularly in reference to known or possible hazardous materials, and identify the responsible party for creating a Health and Safety Plan (HASP). The Protocol will establish what protective measures must be taken for archaeological field workers, including but not limited to OSHA Hazwopper training and the use of Personal Protective Equipment (PPE) required under the HASP.
 2. *Monitoring Task Start.* It will be the responsibility of NJ TRANSIT to inform the CRM of the date that excavations are set to begin with at least one month notice. The CRM will be responsible for notifying the NJSHPO and/or NYSHPO of the project start date. During that month-long period, one on-site meeting should be held between the Resident Engineer, CRM, PI, and the Contractor's Foreman to review the monitoring plan, the procedures for its implementation, and the schedule for construction activities at each job site under these contracts.
 3. *Excavation Monitoring.* The archaeological monitoring team will be on-site whenever excavation is underway in areas that have not been cleared. (See below for a definition of *Cleared Site*.) It is the responsibility of the monitoring team to closely observe all excavators operating where undisturbed soils may be encountered in the event that potentially significant archeological deposits or features are found. It will be the responsibility of the CRM and/or PI, with support from the archaeological team, to determine the nature of any discovery during construction that may warrant construction to cease for a certain period of time to evaluate the potential extent and significance of the find. Elements of the monitoring protocol are as follows:
 4. *Stop work.* When potential artifact-bearing soil horizons or potential features are observed being uncovered during a construction activity, the monitoring team will notify either the PI or CRM, who will notify the Contractor Foreman. The

Site Foreman should order a *Stop Work* to the excavator, and excavations temporarily halted for inspection. Immediate removal of the soils or feature(s) by the excavator should be prohibited. The extent of the area to be protected will be defined by the CRM in consultation with the Resident Engineer but will include sufficient space to adequately clear and initially sample the cultural deposits for their identification. The monitoring team will then inspect the soils or potential feature to determine its nature and need for recordation. Hand excavation and clearing of features may be required by the monitoring team to sample the archaeological remains. The Monitoring Protocol will include the duration for which *Stop Work* orders may last.

5. *Meetings and Progress Reports.* During the course of archaeological monitoring, weekly progress reports will be produced by the CRM and distributed to NJ TRANSIT, the Resident Engineer, the NJSHPO, NYSHPO and LPC. The reports will be brief, and outline the activities carried out during that week and describe discoveries made, and the general status of the archaeological project. These reports will be submitted by the end of day each Thursday.

At the discretion of NJ TRANSIT, weekly on-site meetings will be held with the NJSHPO, NYSHPO, LPC, and the CRM to review procedures, progress and results of the project. Additionally, NJ TRANSIT in consultation with the CRM and Resident Engineer may request emergency meetings with the NJSHPO, NYSHPO and LPC to review an evolving situation, such as the discovery of unanticipated remains. See below for the provision regarding Unanticipated Discoveries (**Exhibit O**).

- D. Determination of Significance. If the artifacts and/or features are assessed by the CRM and PI to be potentially significant archaeological remains, the Resident Engineer, NJ TRANSIT, NJSHPO, NYSHPO and LPC will be notified. No work by the Contractor will be allowed to continue within that area until it has been cleared by the CRM, NJ TRANSIT and the appropriate SHPO. The extent of the area to be protected will be defined by the CRM in consultation with the Resident Engineer but will include sufficient space to adequately sample the cultural deposits and stage the work space for further archaeological investigation. Representatives of NJ TRANSIT, the NJSHPO, NYSHPO and LPC will be responsible for attending all necessary field views, meetings or phone conferences in order to make timely decisions.

NJ TRANSIT, in consultation with the NJSHPO, NYSHPO, the LPC, and the CRM will make the final determination as to the level of effort required to definitively assess the research potential and significance of the archaeological deposits. It is anticipated that hand-excavation and screening of soil strata and/or feature matrix may be required by the archaeological monitoring crew to identify the function, age, cultural affiliation, and eligibility of the site for inclusion on the NRHP. Up to two full days may be required to conduct sufficient testing to make a recommendation of NR-eligibility. At the discretion of NJ TRANSIT, a field meeting may be held with the NJSHPO, NYSHPO, LPC, CRM and Resident Engineer to assess site significance and determine the recommended course of action.

- E. Cleared Site. Once the excavation has progressed below a depth at which archaeological remains may be anticipated, the CRM will recommend that the individual work site be

declared a *Cleared Site* and no further archaeological monitoring will be required. This recommendation would be forwarded by NJ TRANSIT to the NJSHPO or NYSHPO. Once all parties have agreed to this recommendation, the Resident Engineer will notify the Contractor and work may proceed on that work site without the presence of archaeological monitors.

III. REPORTING TO NJSHPO, NYSHPO, NYLPC, AND FTA

Following completion of the additional research, NJ TRANSIT shall prepare a report summarizing the results of the archaeological sensitivity assessments and shall submit this report(s) as an addendum to the Phase IA to NJSHPO, NYSHPO, NYLPC, and FTA. The FTA, NJSHPO and NYSHPO shall review and comment on such submissions within 30 days or it would be presumed that they have no comments.

EXHIBIT L

PROTOCOL FOR WORK IN AREAS WITH THE POTENTIAL FOR HUMAN REMAINS

Based on NEPA and Section 106 documentation prepared for the ARC project, the potential for human remains exists in only one location within the project APE, adjacent to the Historic Cemeteries of Hudson County (HCHC) in Secaucus, Hudson County, New Jersey*. It is important to clarify that the limits of that cemetery are not well known. The Disinterment Project performed by the Louis Berger Group (LBG) for part of the HCHC found that maps of the cemeteries generated in the twentieth century may not be completely reliable indicators of the full extent of the cemeteries. Consequently, and in order to provide accurate limits to any area containing human remains within the APE, it is recommended that the investigation area be extended 50 feet on either side of the approximately 960-foot-long area mapped as part of the Historic Cemeteries. The area considered archeologically sensitive and the focus of investigation, therefore, will measure 1050 feet long. A map illustrating the location of the archaeologically sensitive area is contained within **Exhibit C**.

I. HISTORIC CEMETERIES OF HUDSON COUNTY (HCHC)

The following commitments regarding the HCHC are stipulated in the in PA:

- Additional Documentary Analysis
- Descendant Community Consultation
- Development and Implementation of Construction Monitoring Protocol
- Development and Implementation of Field Testing Program
- Disinterment/Reinterment of Human Remains
- Reporting

Details of the Additional Documentary Analysis are described in **Exhibit I**. The remainder of the commitments related to work in the archaeologically sensitive area with the potential to contain human remains associated with the HCHC are described as follows and depicted graphically in Figure L.1.

A. Descendant Community Consultation

It is assumed that activities within the archaeologically sensitive area adjacent to the HCHC will not only require consultation with the descendant community, as stipulated in the PA, but will require compliance with the New Jersey Cemetery Act.

The New Jersey Cemetery Act (Act), Title 8A (Cemeteries) governs all cemeteries in the State of the New Jersey and the New Jersey Cemetery Board (Cemetery Board) administers the Act. The Cemetery Board falls under the purview of the New Jersey State Attorney General's office, which oversees all actions and proceedings of the Cemetery

* The unanticipated discovery of human remains is discussed in **Exhibit O**, but the protocols and methods discussed here are designed to include that contingency as well and fulfill regulatory requirements in New York as well as New Jersey.

Board. NJ TRANSIT will obtain the approval of the Chancery Division of the Superior Court of New Jersey for the disinterment and reinterment of any human remains in the HCHC and for that purpose will initiate a lawsuit seeking approval from the Court and naming the Cemetery Board as a defendant in the litigation.

NJ TRANSIT, as plaintiff, will name as defendants any living, lineal descendants of any person or persons buried in the Former Burial Ground associated with the former Hudson County Almshouse or poorhouse, the former Hudson County mental hospital, the former Hudson County isolation hospital or the former Hudson County penitentiary, all formerly located at Snake Hill (also known as Laurel Hill) in the Town of Secaucus, Hudson County, New Jersey. The descendant community will be made aware of the pending Court suit via notices published in local newspapers. The Field Testing Plan and Disinterment/Reinterment Plan will be submitted to the Court for review and approval as part of the litigation process. No archaeological investigations or disinterment will occur without consent of the Office of the New Jersey State Attorney General. Any modifications to the plans subsequent to Court approval will require additional review and approval by the Court; these are not covered in the current proposal.

Consultation with the New Jersey Cemetery Board (Board), a descendant community and the New Jersey State Attorney General's office will be conducted prior to initiating archaeological fieldwork, and will include:

- Prepare draft documentation of the proposed work for NJ TRANSIT to submit to the Board regarding the proposed work;
- Attend meetings with the Cemetery Board;
- Prepare and publish advertisements in local newspapers, in order to notify any descendants, descendant groups, or interested parties;
- Attend hearings with the New Jersey State Attorney General;
- Attend meetings with descendants, descendant groups, or interested parties.

B. Construction Monitoring Protocol

Monitoring of excavation of activities carried out by the contractor within the archaeologically sensitive area is one component of the archaeological investigation of the Area Adjacent to the HCHC included in the Programmatic Agreement. Although controlled archaeological investigation is the preferred method for the discovery and documentation of archaeological materials, the presence of substantial fill material at this location related to the adjacent Malanka Landfill and the results of previous exploration of the HCHC carried out by LBG suggest that initially, archaeological monitoring of excavation activities will prove a sufficient, appropriate and practical means of safeguarding any archaeological materials present within or below the landfill material. Once the contractor excavation has exposed natural soils, a more intensive archaeological investigation of the Area Adjacent to the HCHC will be initiated.

In order to successfully coordinate archaeological investigations and monitoring with construction activities, NJ TRANSIT will be responsible for informing the CRM of any

changes to the construction plan with regard to scope, schedule or design in a timely fashion to allow for adjustments to the archaeological monitoring and excavation plans, and subsequent review and confirmation of those changes by appropriate parties.

As noted above, the only construction activity that will require archaeological monitoring is the excavation of the Malanka Landfill. The Malanka Landfill appears to have opened in the early 1960s (THE Partnership 2008:6) and is not considered to be a significant archaeological resource; what is of concern is what possibly lies below it. Based on previous excavations by LBG and historic maps describing the location of the HCHC, the HCHC may extend beneath the existing NEC berm and into the Malanka Landfill property. Following removal of landfill material to natural ground, the archaeological investigation will begin and all cultural remains will be removed from the sensitive area before construction will be allowed to proceed. Construction will entail re-filling the excavation with suitable soils and therefore will not require oversight by project archaeologists.

C. Monitoring Goals

Archaeological monitoring of construction in this sensitive location has two inter-related goals. First and foremost is to insure that any human remains present are identified and protected prior to their removal from the site under the conditions and procedures outlined in the Disinterment/Reinterment Protocol (see below). Second, the objective of archaeological monitoring is to insure that any other significant archaeological remains that are uncovered during the excavation/construction processes in this location are provided full review and appropriate level of treatment required by Section 106 of the NRHP. It is assumed as part of this proposal that the Malanka Landfill does not qualify as an archaeological property and will not require evaluation for NR eligibility.

The archaeological monitoring protocol has been developed to comply with these goals by providing the necessary organizational structure and allocation of responsibilities to successfully complete the task. The final goal of this protocol is to develop a program that will stay within the proposed schedule and budget and will produce a quality outcome that meets the state and federal guidelines. The protocol is designed to be in compliance with the following:

- Section 106 of the National Historic Preservation Act (16 USC 470f);
- Secretary of the Interior Standards for Archaeology and Historic Preservation (48 CFR 44716-42);
- New Jersey State Historic Preservation Office *Guidelines for Preparing Cultural Resources Management Archaeological Reports* (2000);
- New Jersey Soil Erosion and Sediment Control Act (Chapter 251, @NJSA 4:24-39 et. seq.);
- New Jersey Cemetery Act of the New Jersey Statutes, Title 8A (Cemeteries);
- Title 26, Title 8A:5-20 of the New Jersey Statutes Annotated (N.J.S.A.) and Chapter 5 of the New Jersey State Sanitary Code for disinterment, reinterment and cremations;

- New York Archaeological Council *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (1994);
- New York Archaeological Council Guidelines for the use of Archaeological Monitoring as an Alternative to Other Field Techniques (2002);
- New York State Historic Preservation Office (SHPO) *Phase I Archaeological Report Format Requirements* (2005);
- New York City Landmarks Preservation Commission *Guidelines for Archaeological Work in New York City* (2002);
- OSHA regulations on site Health and Safety (29 CFR 1910.120[b][4]; 29 CFR 1926.65[b][4]);

D. Personnel

A well defined structure to the cultural resources team (Team) and system of communication between that Team and all parties is essential for a successful archaeological monitoring project. Typically a cultural resources team consists of a Cultural Resources Manager (CRM), a Principal Investigator (PI), Field Director (FD) and Field Technicians (FT).

E. Protocol

1. Site Access and Work Conditions

Fieldwork at the area of sensitivity adjacent to the HCHC will require access to the Malanka Landfill property and possibly land held by either Amtrak or NJ TRANSIT. It is assumed that safety training will not be required by Amtrak and NJ TRANSIT if no work is being conducted in the active rail corridor. It is assumed that OSHA Hazwoper training will be required for work in the Malanka Landfill and that all archaeological personnel and subcontractors will receive the appropriate training and Personal Protective Equipment (PPE) to work in that environment. All archaeological personnel and subcontractors will be informed of and follow all requirements and regulations that may be stipulated in the Health and Safety Plan (HASP) established by the Contractor for construction.

The HASP will be made available to the Team upon request and the Contractor's Health and Safety Officer will be made known to the Team. The Team should also be notified of and included in any on-site meetings or briefings held by the Health and Safety Officer. Points and equipment (e.g., ladders, etc.) for ingress/egress to the excavation for personnel and equipment will be established and maintained by the Contractor. This includes dewatering the site, if necessary.

Archaeological testing of the area of sensitivity adjacent to the HCHC could will be complicated by the presence of water at the site. Should water be encountered, it is assumed others will be responsible for obtaining all permits required to temporarily dewater this location. Others will also be responsible for the design of the dewatering system to be installed at this location during the course of the field investigation. The Team will not be responsible for construction of the

dewatering system, dewatering the site, or maintaining it in a dewatered state during the duration of the field investigation. This task will be performed by others, who will also be responsible for dismantling and removing the dewatering system.

It is not anticipated that NJ TRANSIT or Amtrak will require personnel such as flagmen to be present during the field investigation, as it will not involve crossing active rail lines or in any way foul the tracks.

2. Monitoring Task Start

NJ TRANSIT will inform the CRM of the date that excavations are set to begin within the archaeologically sensitive area with at least two weeks notice. The CRM will be responsible for notifying the NJSHPO of the project start date. During that two-week period, one on-site meeting will be held between NJ TRANSIT, the CRM, PI, and the Contractor's Foreman to review the monitoring plan and the procedures for its implementation.

3. Site Monitoring

The Team will be on-site whenever excavation is underway in areas that have not been cleared. See below for a definition of *Cleared Site*. It will be the responsibility of the CRM and/or PI, with support from the Team, to determine the nature of any discovery during construction. This may include human burials or an artifact or cultural feature that may warrant construction to cease for a certain period of time to evaluate the potential extent and significance of the find. Elements of the monitoring protocol are as follows:

- **Site Excavation.** Human remains associated with the HCHC, if present at all, are not anticipated until natural soil horizons are encountered. This is anticipated to be as much as 30 feet below the ground surface. The protocol stipulates that below 25 feet, all excavators are to be accompanied by an archaeologist, who will provide direction to the excavator as to the depth and manner in which excavation is to proceed[†]. As natural soil horizons are exposed, the Team will halt further mechanical excavation by the contractor until the area is declared a Cleared Site.
- **Stop Work.** If cultural features are uncovered during a construction activity, the Contractor's Foreman will stop all activity within the immediate vicinity of the discovery and notify the Resident Engineer and the CRM. Specifically, the construction crew will stop at the spot where the find was uncovered and not resume construction within 20 feet of the find until cleared to proceed by the Resident Engineer and CRM. This is necessary in order to provide the CRM the opportunity to determine whether the feature(s) represents a potentially significant site. The Monitoring Protocol will include the duration for which Stop Work orders may last.

[†] These depths are based on current geomorphological data. Future geotechnical testing may alter the anticipated depths of the Malanka Landfill, in which case the monitoring protocol will be modified as appropriate.

- **Determination of Significance.** The CRM and/or PI are responsible for investigating the artifacts and/or features, determining their potential affiliation with the HCHC and/or other cultural provenience. Hand excavations and soil screening by the Team to the extent necessary to identify and assess the objects or features may be required. If the objects and/or features are determined by the PI and CRM not to be significant, the Resident Engineer will contact the Contractor's Foreman to resume work. The Monitoring Protocol will include the duration for which work stoppages for assessment purposes may last.

If the artifacts and/or features are not associated with the HCHC but determined by the CRM to be potentially significant archaeological deposits, the Resident Engineer, NJ TRANSIT and the NJSHPO will be notified. The area will be secured with highly visible, protective fencing and no work by the Contractor will be allowed to continue within that area until it has been cleared by the CRM, NJ TRANSIT and the NJSHPO. The extent of the area to be protected will be defined by the CRM in consultation with the Resident Engineer but will include sufficient space to adequately sample the cultural deposits and stage the work space for the archaeological excavation. The purpose of the investigation will be to determine the significance of the features. It is anticipated that the archaeological excavations may take up to two (2) days; however, work may be stopped for a longer period to allow for field views and meetings. The Contractor may be requested to provide assistance with the use of mechanical equipment, etc., under the direction of the CRM or PI. NJ TRANSIT will be contacted with any such requests and they will pass the request on to the Contractor. NJSHPO in consultation with NJ TRANSIT and the CRM will make the final determination as to the level of effort required to definitively assess the research potential and significance of the archaeological deposits. The NJSHPO will be responsible for attending all necessary field views, meetings or phone conferences in order to make timely decisions.

- **Data Recovery.** If the CRM recommends the site is an archaeological property and NJ TRANSIT and the NJSHPO concur, a data recovery will commence. See Exhibit M for a discussion of Data Recovery efforts.

4. Monitoring Task Stop

Once the natural ground surface has been fully exposed within the archaeologically sensitive area, the archaeological investigation will commence. The Monitoring Protocol will include the duration for which this may last. During that time, no construction activities within the sensitive area are to take place until it has been determined a *Cleared Site*. The archaeologically sensitive area may be determined a *Cleared Site* upon completion of the archaeological investigation, if no human remains or other significant archaeological deposits are encountered. Otherwise, the sensitive area (or portion thereof) may not be declared Cleared until the disinterment of human remains or Data Recovery operations are complete.

5. Cleared Site

Once the archaeological investigation is completed, an assessment will be made by the CRM as to whether any human remains (or any other significant cultural remains) are present within the archaeologically sensitive area. This determination will be communicated to NJ TRANSIT and notification will be sent by NJ TRANSIT to the NJCB, the New Jersey State Attorney General's Office and the NJSHPO. Opportunities for a site visit and/or meetings will be made available.

In the event that no human remains or archaeological sites are present, and with the concurrence of all parties, the archaeologically sensitive area will be declared a *Cleared Site*. NJ TRANSIT will communicate this determination to the Contractor, and construction activities may resume.

In the event that human remains are encountered in the sensitive area during mechanical excavation, the CRM will notify NJ TRANSIT, who will notify local police and the Hudson County Coroner's Office, the Cemetery Board and the State of New Jersey Attorney General's Office. The area surrounding the remains will be secured and work will be suspended in the immediate area of the remains until permission to proceed has been received from the aforementioned parties.

As the APE is adjacent to a known cemetery site and since the disinterment/reinterment program, if necessary, will be carried out under the provisions of a court order, it is not expected that the parties contacted above will insist on any long-term stoppage of archaeological work. The disinterment/reinterment program will then be instituted and that portion of the archaeologically sensitive area that contains human remains will be secured and remain off-limits to all non-necessary personnel as determined by the CRM in consultation with NJ TRANSIT until the site is determined to be Cleared. This information will be communicated by the CRM to NJ TRANSIT, who will inform the Contractor. Areas containing human remains may be restricted to a portion of the archaeologically sensitive area. Consultation between the CRM, NJ TRANSIT and the NJSHPO will determine whether any portion of the sensitive area may be declared Cleared while the exhumation process is underway in other areas. NJ TRANSIT will be responsible for informing the Contractor of that decision and making all necessary arrangement to demarcate the limits of the *Cleared Site*.

F. Field Testing Program

Once excavation across the entire 1050-foot long sensitive area has exposed natural soils, all Contractor excavation will cease and the archaeological investigation will begin. The Monitoring Protocol will establish the duration of this task. It is assumed that the excavation will be secured by the Contractor according to OSHA standards for safe entry into a confined space. Points and equipment (e.g., ladders, etc.) for ingress/egress to the excavation for personnel and equipment will be established and maintained by the Contractor.

G. Field Investigation

Once the site has been prepared for investigation, a multi-phased approach will be adopted for the preliminary investigation of the area of sensitivity adjacent to the HCHC. The recommended steps to determine the presence or absence of human remains are the following:

- Remote Sensing Survey;
- Strip Block Excavation;
- Hand Excavation

1. Remote Sensing Survey

The purpose of the remote sensing survey will be to locate and identify subsurface anomalies, metallic material, and buried cultural features not apparent at the exposed ground surface. It is anticipated that the presence of soil anomalies and metal materials will correspond to the locations of grave shafts and thereby delimit the possible cemetery site boundaries. Ground-penetrating radar (GPR) will be the primary geophysical survey method used in this survey. Two additional geophysical instruments will be applied during the survey: an audio-indicating magnetic locator to locate ferrous materials and a soil conductivity meter to detect anomalies in the soil profile. The entire 1050-foot long by 50-foot wide sensitive area will be surveyed.

In order to prepare the sensitive area for the GPR survey, a small tracked vehicle with a flat edge blade will be lowered into the excavation. This equipment will be used to clean-scrape the floor of the excavated area so that the GPR unit can be successfully employed. The Contractor will be asked to assist in the use of larger equipment (crane or trackhoe) to lower the unit into the excavation, if necessary.

2. Strip Block Excavation

Upon the analysis of the remote sensing survey data, archaeologists will direct the excavation of up to six strip blocks within the sensitive area by mechanical equipment with a non-toothed bucket. These strip blocks will measure approximately 10.0 ft in width by 30.0 ft in length and may be of variable depth. The mechanical equipment will remove any residual fill material to be present and expose the subsoil horizon. The purpose of this will be to expose the outlines of any grave shafts that may be present. The remote sensing survey results will be used to guide the strip block excavation by providing an estimated depth to subsoil for each of the areas selected for excavation. The strip block excavations will be conducted under the direct supervision of the PI.

Grave shafts, if present, may be situated at ground water level and may extend beneath the water table. Water pumps will be available to drain strip blocks, should it prove necessary. The Team will provide the pumps necessary to remove water from these strip blocks. This water will be disposed of in a fashion consistent with the conditions stipulated in the State Erosion and Sediment Control (SESC) Plan developed for the general dewatering of the site. The

location and dimensions of each strip block will be recorded using a Total Station and plotted on project engineering plans using GIS.

3. Hand Excavation

Once the strip block is excavated to a sufficient depth by machine, the floor of the excavation will be cleaned by hand using flat shovels and trowels. Each trench location will be recorded with a Total Station. A small tent will be erected over the trench location to ensure privacy during the review of the trench floor. Each shaft identified will be photographed; its dimensions will be recorded on standardized forms and assigned an individual number and its location recorded with the Total Station.

At selected shaft locations, once a feature has been documented, the shaft will be hand excavated until the top of the coffin/casket or other receptacle has been reached and fully exposed within the trench. The shaft fill will not be screened for artifacts. The identification of a coffin/casket within a shaft will be taken to indicate the presence of human remains. No human remains will be intentionally exposed during this investigation. If, however, human remains are unintentionally exposed during the course of this investigation, work in that area will be stopped and NJ TRANSIT, local police, the Hudson County Coroner's Office, the Cemetery Board and the State of New Jersey Attorney General's Office will be notified, as in Section 5.1.3 above. Any exposed grave shafts will be back filled immediately upon completion of documentation. All trenches will also be backfilled upon completion of the investigation, to be disinterred later under the provisions of the disinterment/reinterment protocol (see below).

H. Interim Reporting

A brief, interim report will be produced after the archaeological investigation is completed. The report will detail the findings from both the excavation monitoring and the archaeological investigation. The report will also include recommendations regarding the need for further archaeological monitoring, excavations, or disinterment. The interim report will be submitted by NJ TRANSIT to the NJSHPO for review and comment. It is anticipated that a meeting will be held to discuss the results presented in the report and agree upon any future archaeological actions in this portion of the APE. No construction activities are to resume in the archaeologically sensitive area until permitted by the NJSHPO, the NJCB and the State of New Jersey Attorney General's office.

I. Disinterment/Reinterment Plan

The goal of the Disinterment/Reinterment Plan (Plan) is to remove any human remains that may be found in the area of sensitivity adjacent to the HCHC with the requisite level of respect and dignity, meeting all legal responsibilities under the New Jersey Cemetery Act and any court orders issued by the State of New Jersey Attorney General's office, while remaining within the anticipated budget and schedule. The proposed plan is based heavily on the successful plan for the disinterment/reinterment of human remains from a portion of the HCHC by the Louis Berger Group in 2003 as part of the New Jersey Turnpike Authority's Secaucus Interchange Project.

The Disinterment/Reinterment Plan contains the following elements:

- Provisions for Site Security
- Permits and Safety
- Staging
- Archaeological Disinterment Team
- Disinterment Process
- Reinterment Process
- Provisions for Public Outreach
- Proposed Timeline based on areal extent of sensitive area and time required by previous investigations (LBG)

1. Provisions for Site Security

Although situated in a relatively isolated area, provisions must be made to secure any area containing, or suspected of containing, human remains from unauthorized entry to the site. To this end, the Plan stipulates that security fencing with locked gates be erected at the site once the presence of human remains has been ascertained and the dimensions of the cemetery within the APE have been established. The area to be fenced will be large enough to stage and complete the disinterment project. To ensure security during off-hours, a private security firm will be hired to patrol and monitor the site during evening and weekend hours, or any other time that project personnel are not present. Private security will only be hired for the time during which burials are still present at the site; once they have been completely removed the security fencing will be removed and the security patrols will be terminated.

Security will also be extended to the excavation and removal of the human remains. Temporary work shelters will be erected over individual (or small groups of) graves while they are in the process of being excavated and their remains removed. The shelters will permit adequate interior work space, but will prevent any outside persons from viewing the remains or the disinterment process. The shelters will also permit the disinterment team to work in most if not all weather conditions.

2. Permits and Safety

It is assumed that any additional de-watering of grave shafts that may be required during the disinterment process will be covered under the general SESC permit that will be granted for general excavation to be conducted as part of this contract.

To addition to a SESC permit, it is anticipated that a Disinterment-Transit Permit will be required under the terms that will be ordered by the Attorney General's office.

NJ TRANSIT will develop a Health and Safety Plan (HASP) specific to the disinterment project. This HASP will be in addition to the general HASP developed by the Contractor for construction, and focus on the particular health and safety issues involved in the handling of human remains within the context of working within an active construction site. Considerations that should be contained in the HASP include but are not limited to:

- precautions against infectious diseases when handling human remains;
- requirements for Personal Protective Equipment;
- working in confined spaces;
- precautions regarding heating and providing electricity to temporary shelters.

3. Staging

The extent of the requirements for staging of the disinterment process will depend on the size of the cemetery area within the APE and the expected number of human burials. Minimally, disinterment staging will require the following facilities and provisions:

- On-site office trailer: Office space will be required for the archaeological team, in which records and files may be kept, to hold meetings and will have sufficient space to change in and out of field gear. The trailer will be equipped with electricity and phone hook ups for office equipment and computer systems. The office trailer will be placed within protective security fencing.
- On-site laboratory trailer: At least one trailer will be dedicated for laboratory space. All human remains and other artifacts will be brought from the excavation to this space for processing, which will include cleaning, recording, cataloging and re-packing in appropriate storage containers. Human remains and artifacts will be stored securely within the laboratory trailer until they are moved to the off-site storage location. This space will also be fitted with electricity and phone service. Water and sinks will also be made available for clearing artifacts. The office trailer will be placed within protective security fencing. Additionally, a check-in, check-out procedure will be employed to control and document the movement of excavated human remains and their associated artifacts from the field, to the onsite lab, to the offsite lab/temporary morgue. Additionally, access to the onsite lab will be strictly limited to those individuals working directly with the burial materials.
- Off-site laboratory and temporary morgue. An appropriate off-site laboratory and storage facility will be obtained for the processing, analysis and temporary storage of the human remains until their reinterment. The locality will be secure and climate controlled to prevent rapid decay of organic remains. Access keys to this facility will be limited to only those persons with the authority and the need to enter. Here the human remains will be cleaned for analysis by the Human Osteologist. All artifacts that accompany the deceased will also be processed and cataloged and stored together with the burial.

- *On-site Storage Space*: Separate on-site storage space will be available for all equipment and PPE used by the archaeological team. The size of this space will depend on team size, but this area must be able to be secured by a lock and within the confines of security fencing.
- *Utilities*: Electrical power, phone lines and internet connection will be provided to the on-site office and laboratory trailers. Potable water will also be made available in both offices, as well as water for occasional artifact washing and general cleaning for team members and equipment. The appropriate number of portable toilets will be provided for the size of the archaeological team, and maintained in sanitary conditions as required.

4. Archaeological Disinterment Team (AD Team)

The AD Team will consist of a Principal Investigator (PI); Human Osteologist (HO); Field Director (FD); Laboratory Director (LD) and Research Technicians (RT). The roles, responsibilities and qualifications for each position are as follows:

- *Cultural Resources Manager*. The CRM will meet the qualifications specified in the Secretary of the Interior's Professional Qualifications for Archaeology (46CFR4471.6) and have the appropriate professional background experience for the types of resources anticipated at the work site. The CRM will be the point of contact between the AD Team, NJ TRANSIT, officers of the Contractor, project sponsors and state and federal review agencies. They will be responsible for tracking the progress of monitoring activities, adherence to the monitoring protocol by the archaeological team, schedule and budget. They will be the conduit for communicating issues originating within the archaeological AD Team to the appropriate parties. Periodic status meetings between the CRM, PM and review agencies may be advisable, depending on the length and complexity of the project. Brief status reports prepared by the CRM may be an appropriate alternative.
- *Principal Investigator*. This individual will also meet the qualifications specified in the Secretary of the Interior's Professional Qualifications for Archaeology (46CFR4471.6). The Principal Investigator will be on site at all times specified in the monitoring protocol. They will be responsible for implementation of the protocol on site and the quality of work performed by the AD Team. The PI will confer with the Foreman for the Contractor (or other agreed upon person) on any decision to halt work and the Contractor will direct their personnel accordingly. The PI will be responsible for communicating to the Contractor's Foreman the need for a member of the AD Team to provide guidance to excavators in areas of high sensitivity or where archaeological remains have already been found. In these circumstances, 'guidance' refers to telling where and how deep an excavator is to dig and when and for how long they are to stop. This level of communication is necessary for creating a safe work environment.
- The PI is also responsible for informing themselves of any Health and Safety Plan (HASP) that is developed for the work site by the Contractor, know who the Health and Safety Officer is, and assure that the AD Team is in

compliance with the rules and regulations included in the HASP. The AD Team will be equipped with and wear all required personal protective equipment (PPE) as specified in the HASP. The AD Team should also be notified of and included in any on-site meetings or briefings held by the Health and Safety Officer.

- *Human Osteologist.* The HO will be responsible for identifying all of the human remains that are encountered during the monitoring and disinterment procedures. They will be a qualified professional with a minimum of 3-5 years experience in the identification of human remains. They will provide necessary training to the Field Technicians in the excavation of skeletal remains and in the preliminary identification of skeletal elements. The HO will be responsible for the final identifications, osteometric measurements, age/sex determinations and the notation of any pathological conditions or other significant abnormalities.
- *Field Director.* The FD will be responsible for assisting the PI in directing and managing the field crew, collecting and organizing equipment, paperwork, etc. on a daily basis. They will be competent to review and evaluate the accuracy and adequacy of field notes and drawings produced by the FTs. The FD should have a minimum two years experience investigating sites of comparable cultural affiliation, date and function.
- *Field Technician.* Field technicians should have the requisite skills and experience to work with minimum supervision and produce acceptable field notes, scaled drawings or other forms of recordation required by the project. They work under the direct supervision of the FD and the PI.

5. Disinterment Process

As the disinterment proceeds, the AD Team will be subdivided into smaller units to accomplish a number of set tasks necessary to locate, excavate and disinter all human remains that may be located. Those specific tasks and the organizational structure designed to complete them are as follows:

- Site Stripping. The archaeologically sensitive area will have been stripped of its artificial overburden (i.e., the Malanka Landfill) and up to six strip block already excavated and some individual graves exposed before the disinterment process begins. These initial excavations will provide information on the depth at which individual grave shafts may be distinguished and their distinguishing soil characteristics. To the extent possible, and site conditions permitting, mechanical equipment will be introduced to the site for the purpose of stripping all remaining overburden to the level where the outline of individual grave shafts may be observed in the surrounding soil matrix.

Site stripping will be monitored by disinterment team members. The PI or FD will be present at all times and will guide the operator during the process. The goal is to remove only sufficient soil to distinguish the location of grave shafts, without disturbing their contents. Under the guidance of the FD and/or PI, research technicians will follow after the mechanical equipment

with hand tools (flat shovels and trowels) to further clear and demark the dimension of each grave shaft. The outline of each grave shaft will be marked by a series of nails and string to mark the horizontal profile of each grave as clearly as possible.

- Mapping. Following the stripping crew, a mapping crew will record the location and dimension of each grave shaft. A Total Station will be employed to record all diagnostic points and establish the vertical dimension of the height of each feature. Each grave shaft will be provided a unique feature number and all locational and identification information will be transferred from the Total Station to project base mapping at the end of each field day.
- Excavation/Exhumation. Once all grave shafts have been cleaned, located and mapped, the excavation and disinterment process will begin. Tents or shelters will be erected over one or more shafts prior to excavation. Teams of two or three Research Technicians will be engaged in the excavation of each grave shaft. Once human remains were identified and exposed *in situ*, a separate team of data collectors will record electronically on standardized forms installed on field computers all pertinent information for each burial. At a minimum that information will include:
 - Measurements of the total length of each individual
 - Depth measurements of the interment
 - Digital photographs of each individual
 - Record of all artifacts associated with each burial
 - General observations regarding position and treatment of the body, conditions affecting preservation, distinguishing features, etc.
- Once all the human remains and associated objects from each burial are recorded, the excavation crew will remove them from the grave and place them in a container, which will then be taken immediately to the on-site laboratory. The Laboratory Director will receive them and log them into the laboratory directly upon receipt.
- Laboratory Processing. The Laboratory Director will be responsible for reviewing the remains of each burial together with the electronic field records to ensure correct identification and that all associated artifacts are present. Once the burial has been logged in to the on-site lab, the remains will be removed to the off-site laboratory and temporary morgue. There, all human remains will be dry brushed (water will be used for cleaning bone only as necessary) and allowed to air-dry in the climate-controlled laboratory. All inorganic artifacts will be washed and subsequently cataloged. All non-human organic remains will be treated as appropriate and maintained in an appropriate stable medium or environment until their final reinterment.

The HO will examine each of the burial remains once the cleaning process has been completed. Following the analytical procedure already established at the HCHC by the Louis Berger Group, the following tasks will be performed by, or under the direct supervision of the HO for each of the individuals recovered:

- Photographs will be taken of pathologies
- Osteometric measurements will be taken as per *Standards for Data Collection from Human Skeletal Remains* (24 cranial, 10 mandibular, 44 postcranial)
- Will note presence or absence of 24 non-metric traits
- Will note any post-mortem damage to the human remains
- Will corroborate the fields taken by the excavation team and any additional notes made by the LD during the initial inspection of the remains in the on-site laboratory.

No destructive analyses of the human remains will be conducted. Following the analysis of the individual burials, the HO will produce a general description, count, assessment of preservation/completeness, estimation of the Minimum Number of Individuals (MNI), gender, age, stature, race, and a description of pathologies for the entire population recovered during this operation.

The human remains and all artifacts associated with them will be re-boxed in plastic containers once the osteological analysis has been completed and all artifacts cataloged. They will remain in storage in the off-site laboratory and temporary morgue until final reinterment.

6. Reinterment Process

The reinterment process will consist of the following tasks: selection of a reinterment cemetery; preparation of the reinterment parcel, including installation of burial vaults; transferring the remains from the site to a new permanent location; and the design and installation of monuments memorializing the disinterment and reinterment program.

A primary goal of the work plan presented here to effect the reinterment process will be to reinter any human remains encountered as part of THE Tunnel project together with those remains disinterred from the HCHC as part of the NJTA's Secaucus Interchange Project, if appropriate. Those remains were reinterred within the Maple Grove Park Cemetery in the Town of Hackensack, Bergen County, New Jersey. If burials are encountered as part of this project, a reinterment plan will be developed in consultation with NJ TRANSIT, FTA, and all appropriate state and local agencies and parties.

7. Public Outreach

It is anticipated that if human remains are encountered, significant public interest in the project will result. Due to the sensitive nature of the potential remains and the results with which they must be treated, it is assumed that NJ TRANSIT will assume all responsibility and authority for making public notifications of the work being conducted. It is also assumed, as part of this work plan, that the CRM and/or PI will be requested by NJ TRANSIT to provide information on the progress of the investigation for the purposes of public notification and/or attend press conferences or field meetings for that purpose. All public outreach conducted as part of the disinterment/reinterment project will be performed at the request and direction of NJ TRANSIT.

J. Final Reporting

Depending on the results of the archaeological monitoring and investigations,, two different reporting requirements may be anticipated. If no human remains are encountered, a Phase IB/II Archaeological Investigation Report will be prepared and submitted to NJSHPO and to the New Jersey Cemetery Board. Results of the field investigation will be presented in the report, together with a site interpretation, evaluation of eligibility for listing in the National Register, a catalog of any artifacts encountered, maps and photographs, as appropriate.

If human remains are encountered the Phase IB/II Archaeological Investigation Report will be augmented by the inclusion of a full discussion of the disinterment of the human remains and their re-interment.

Regardless of the positive or negative results from construction monitoring and the preliminary archaeological investigation, a Determination of Eligibility (DOE) Report will be produced. The DOE Report will contain a description of the resource, detailed historic and contemporary maps depicting the boundaries of the resource as best as they can be established, and an evaluation of the eligibility of the site for inclusion in the National Register of Historic Places. This work plan does not include the effort to have the site placed on the National Register of Historic Places.

II. HUMAN REMAINS OUTSIDE OF THE AREA OF SENSITIVITY ADJACENT TO THE HCHC

Encountering human remains outside of this area would constitute an unanticipated discovery and as such, is treated in **Exhibit O**. The methods and protocols described above would be modified as necessary to account for the location where the remains are found.

EXHIBIT M

MITIGATION, DATA RECOVERY, CURATION AND PUBLIC INTERPRETATION

I. DATA RECOVERY PLAN

If any Archaeological Property is going to be impacted by the Project, means to avoid, minimize, or mitigate the impacts must be considered. If the impacts cannot be avoided a data recovery plan to mitigate the adverse effect to the Archaeological Property will be developed. This mitigation will be accomplished by the recovery and preservation of data from the archaeological site. The data recovery plan will provide a detailed discussion of the site-specific research questions deemed appropriate by the signatories to the Programmatic Agreement and considered important at the local, regional, and/or national level. The plan will provide a discussion of the research topics and questions to be addressed, the types of data that will be collected to address these questions; strategies and testing methodology for the recovery of the necessary data; methods of analyses and interpretation; and any other necessary information deemed appropriate by the NJSHPO and/or the NYSHPO and other involved state and federal agencies. The data recovery field excavations will be as complete as possible to address the research questions established in the plan. Detailed laboratory analysis will be performed on recovered cultural materials, followed by cataloguing and preparation for curation. A public education program will also be included in the data recovery investigations to disseminate the recovered information to the archaeological community and the public.

All data recovery investigations in New Jersey will follow the guidelines established in the *Guidelines for Preparing Cultural Resources Management Archaeological Reports* (NJSHPO 2000). For New York, all data recovery investigations and activities will follow the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (New York Archaeological Council 1994) as well as the NYSHPO's (2005) guidance for Data Recovery reports found in: *New York State Historic Preservation Office (SHPO) Phase I Archaeological Report Format Requirements*.

Whether in New Jersey or New York, data recovery plans and investigations will follow the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48 CFR 44716) and the Advisory Council on Historic Preservation's 1980 *Treatment of Archaeological Properties*. The plan(s) will be developed and implemented by a Principal Investigator who meets the Secretary of the Interior's Professional Qualifications Standards (48 CFR 44738-44739). The data recovery report will also follow the Secretary of the Interior's Format Standards for Final Reports of Data Recovery Programs (42 CFR 5377-79).

II. ANALYSIS AND CURATION OF MATERIALS AND RECORDS PLAN

All archaeological materials and records resulting from archaeological survey, evaluation, and data recovery investigations will be subjected to laboratory analysis, conservation, and curation. Laboratory processing and analysis will include cleaning, identification, and cataloging of any recovered cultural materials; cataloging and processing of select soil control and feature flotation samples, specialized analyses and interpretation of organic remains and in-depth analysis of the spatial distributions of archaeological materials and features. Appropriate conservation measures for artifacts will be taken as

necessary. The disposition of archaeological remains and records will be completed following the completion of all laboratory analyses and conservation measures. NJ TRANSIT will identify an appropriate repository for curated archaeological collections in consultation with either the NJSHPO and/or NYSHPO and other appropriate repositories in New York State as stipulated in NYAC's (1994) curation guidelines. For collections recovered from archaeological sites in New Jersey, the New Jersey State Museum's 2005 draft guidelines, *Curation Guidelines: Preparing Compliance Archaeological Collections for Submission to the NJ State Museum*, will be followed. For sites in New York State, artifacts and records will be curated according to the Standards for the Curation of Archaeological Collections, found in Section 7 of the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (NYAC 1994).

III. PUBLIC INTERPRETATION

Any data recovery effort will include public outreach. The purpose of the public outreach is to provide information on the data recovery effort and any archaeological resources uncovered as a result of that effort to the general public. Public outreach may take the form of the publication of a brochure or non-technical report, public lectures, information kiosk, or web page, but is not limited to those formats. The specific form that public information effort takes will depend on the nature of the resource and the design of the data recovery operation, and will be determined in consultation with either the NJSHPO or the NYSHPO.

EXHIBIT N

IDENTIFICATION OF ADDITIONAL ARCHAEOLOGICALLY SENSITIVE AREAS

For any new ARC elements that would involve subsurface construction, and for which the effects of such construction have not yet been analyzed as part of the EIS process, potential effects on archaeologically sensitive areas within the APE will be assessed. The following methodology will be employed to assess the potential for additional archaeologically sensitive areas to be identified in the APE:

I. REVIEW OF 30%, 60%, 90% SUBMISSIONS

Design drawings (civil, utility, geotechnical, structural) at 30%, 60% and 90% completion will be reviewed and analyzed by a professional archaeologist to determine whether any areas outside the APE analyzed for the EIS may be subject to ground disturbances, due to changes in project design.

- The professional archaeologist(s) who conducts this review will meet at minimum the Secretary of the Interior's Professional Qualification Standards.
- This review shall include any areas of proposed temporary impacts (e.g., temporary access or detour roads, construction lay down areas, spoil deposition areas) that were not included in the EIS analysis.

II. ANALYSIS OF ARCHAEOLOGICAL SENSITIVITY

If additional areas outside the APE analyzed for the EIS are to be disturbed due to construction activities or may be subject to temporary impacts, the archaeological sensitivity of those areas will be assessed and recommendations regarding the need for more detailed studies will be made.

- The methods and procedures to be used to assess sensitivity will follow those found in Exhibit I.C.
- If further detailed studies are required, they will follow the methods and protocols established in Exhibit K (Field Testing Plan).
- If any additional areas are assessed to have the potential to contain human remains, they will be subject to the provisions found in Exhibit L.II (Protocol for Work in Areas Potentially Sensitive for Human Remains).
- All additional areas, regardless of whether they are determined to be archaeologically sensitive or not, will fall under the provisions found in Exhibit O (Unanticipated Discoveries Plan).

III. REPORTING TO NJSHPO, NYSHPO, NYLPC, AND FTA

Following completion of the identification of additional areas and relevant research after the 30%, 60% and 90% submissions, NJ TRANSIT shall prepare a report documenting the location and dimensions of any additional areas that are identified. The report will also summarize the results of the archaeological sensitivity assessments and recommendations for each additional area. The report

will be submitted as an addendum to the Phase IA to NJSHPO, NYSHPO, NYLPC, and FTA. The FTA, NJSHPO and NYSHPO shall review and comment on such submissions within 30 days or it would be presumed that they have no comments.

EXHIBIT O

UNANTICIPATED DISCOVERIES FOR ARCHAEOLOGICAL PROPERTIES INCLUDING HUMAN REMAINS

For the purposes of this work plan, an unanticipated discovery is defined as a significant archaeological resource that is encountered in a portion of the APE where it was not anticipated. As such, the work plan will require modification to adequately and appropriately identify, assess and if necessary, mitigate adverse impacts to the resource. For example, prehistoric artifacts or human remains may be uncovered in an area where historic industrial remains were anticipated. Also included in the category of unanticipated discovery are any archaeological resources that may be encountered during construction outside the APE. These resources are defined as artifact (historic or prehistoric) deposits, cultural features (wharfs, bulkheads, cribbing, walls, foundations, wells, privies), or human remains.

An Unanticipated Discoveries plan has been developed in consultation with SHPO that will be followed in the event that any archaeological resources and/or human remains are encountered during construction of the Project. The stipulations of the Unanticipated Discoveries plan as set forth below are in accordance with current standards and guidelines elaborated in:

- Section 106 of the National Historic Preservation Act (16 USC 470f);
- Secretary of the Interior Standards for Archaeology and Historic Preservation (48 CFR 44716-42);
- New Jersey State Historic Preservation Office *Guidelines for Phase I Archaeological Investigations: Identification of Archaeological Resources* (2003);
- New Jersey State Historic Preservation Office *Guidelines for Preparing Cultural Resources Management Archaeological Reports* (2000);
- New Jersey Cemetery Act of the New Jersey Statutes, Title 8A (Cemeteries);
- Title 26, Title 8A:5-20 of the New Jersey Statutes Annotated (N.J.S.A.) and Chapter 5 of the New Jersey State Sanitary Code for disinterment, reinterment and cremations;
- New York Archaeological Council *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (1994);
- New York State Historic Preservation Office (SHPO) *Phase I Archaeological Report Format Requirements* (2005);
- New York City Landmarks Preservation Commission *Guidelines for Archaeological Work in New York City* (2002).

I. UNANTICIPATED ARCHAEOLOGICAL DISCOVERY PROTOCOL

The protocol to follow in the advent of an unanticipated discovery contains the following steps:

- The Contractor will immediately notify the Resident Engineer of an unanticipated discovery.

- The Resident Engineer will direct a *Stop Work* order to the Contractor's Site Foreman to flag or fence off the archaeological discovery location and direct the Contractor to take measures to ensure site security. Any discovery made on a weekend will be protected until all appropriate parties are notified of the discovery. The Contractor will not restart work in the area of the find until the Resident Engineer has granted clearance.
- The Resident Engineer will indicate the location and date of the discovery on the project plans and will notify NJ TRANSIT and the Cultural Resources Manager (CRM), who will undertake a site visit or otherwise coordinate an on-site archaeological consultation.
- NJ TRANSIT will immediately notify either the NJSHPO or the NYSHPO and LPC of the find.
- The NJ TRANSIT will direct the CRM to begin a more detailed assessment of the find's significance and the potential project effects. An archaeological team will be dispatched to the site to determine the nature and extent of the archaeological deposits; they will be granted full access to the required site area and otherwise facilitated by the Contractor to complete this investigation in the most expeditious manner possible.
- The CRM will notify NJ TRANSIT of their findings and recommendations, whether the remains are assessed not to be significant and request approval for construction to proceed, or describe a proposed scope of work for evaluating the significance of the find and evaluating project effects.
- NJ TRANSIT will convey this information to either the NJSHPO or the NYSHPO and LPC; at the discretion of NJ TRANSIT and either of the HPOs, a meeting may be held to discuss options and recommendations.
- If the resource is determined to be a significant archaeological property and it is threatened by further project development, the CRM in consultation with the appropriate SHPO (and other appropriate parties) will develop a site mitigation plan.
- Upon direction by NJ TRANSIT, the CRM will then implement the archaeological mitigation plan.
- A meeting or site visit will be held with NJ TRANSIT, appropriate SHPO and other appropriate parties once the field investigation for site mitigation has been completed to review the work accomplished.
- The SHPO will notify NJ TRANSIT that the terms of the fieldwork portion of the mitigation plan have been satisfactorily completed and NJ TRANSIT will notify the Contractor that it is a *Cleared Site* and excavation and/or construction may resume.

II. UNANTICIPATED DISCOVERY OF HUMAN REMAINS PROTOCOL

This protocol is specifically designed for circumstances where human remains are encountered in the project APE, but outside the area of the Historic Cemeteries of Hudson County (HCHC).

- The Contractor will immediately notify the Resident Engineer of an unanticipated discovery.
- The Resident Engineer will direct a *Stop Work* order to the Contractor's Site Foreman to flag or fence off the archaeological discovery location and direct the Contractor to take measures to ensure site security. Any discovery made on a weekend will be protected until all appropriate parties are notified of the discovery. The Contractor will not restart work in the area of the find until the Resident Engineer has granted clearance.

- The Resident Engineer will indicate the location and date of the discovery on the project plans and will notify NJ TRANSIT.
- NJ TRANSIT will immediately notify either the NJSHPO or the NYSHPO and LPC of the find as well as the CRM, the local police, and appropriate county Medical Examiner's Office.
- Local law enforcement and, if necessary, a representative of the Coroner's office will visit and inspect the site to determine whether the site constitutes a crime scene.
- If it is declared a criminal matter, the CRM will have no further involvement and the decision to declare it a *Cleared Site* for construction will be made by the appropriate legal authorities.
- If the find is determined not to be a criminal matter, the disinterment/reinterment plan developed for the HCHC (Exhibit L) will be employed and modified as appropriate for the find(s). The respective SHPO and other relevant agencies will review and approve the modified plan prior to implementation. Specific elements of the disinterment/reinterment plan to be applied in the case of the unanticipated discovery of human remains include:
 - CRM develop disinterment/reinterment plan
 - CRM present plan to NJ TRANSIT for review and consultation
 - NJ TRANSIT notify appropriate SHPO and other involved agencies
 - Consultation with next of kin or descendant community
 - Undertake fieldwork
 - Approval to resume construction following completion of the fieldwork component of the mitigation plan.
 - Complete appropriate regulatory and legal documentation of studies

EXHIBIT P

CONSTRUCTION AND ARCHAEOLOGICAL PHASING PLAN

The *Construction and Archaeology Phasing Plan* will outline, by construction contract, the order and type of the archaeological investigations. It will include all mapping/GIS data on the locations of known archaeologically sensitive areas, areas that contained archaeological resources or were sensitive for archaeological sites and have been cleared (only human remains will be assumed to be of value in “cleared” areas), archaeological sites that have been evaluated and found not to meet Historic Properties criteria, cemeteries, and Archaeological Properties (archeological resources that meet Historic Properties Criteria). The plan will correlate construction activities with the archaeological investigations that are necessary within the areas encompassed in each contract.

The *Construction and Archaeology Phasing Plan* will be developed once the construction contracts and schedule are further developed during final engineering. The plan will be reviewed and amended (as appropriate) as each construction contract is awarded.