

# **Cover Certification Report**

**Aero Realty Trust (Parcel 1)  
Tax Map 9-2-3  
223 New Boston Street  
Woburn, Massachusetts 01801**

**September 30, 2008**

*Prepared for:*

**Industri-Plex Site Remedial Trust  
c/o Timothy Cosgrave, Project Coordinator  
Harvard Project Services, LLC  
249 Ayer Road, Suite 206  
Harvard, Massachusetts 01451**

*Prepared by:*

**ROUX ASSOCIATES, INC.  
67 South Bedford Street, Suite 101W  
Burlington, Massachusetts 01803**

**MERIDIAN LAND SERVICES, INC.  
31 Old Nashua Road  
Amherst, New Hampshire 03031**

## TABLE OF CONTENTS

---

1.0 INTRODUCTION .....	1
1.1 Site Description and History .....	1
1.2 Scope of the Remedial Action .....	5
1.3 Report Format .....	6
2.0 PROJECT PARTICIPANTS .....	7
2.1 Overview .....	7
3.0 CONSTRUCTION DOCUMENTS.....	9
3.1 Consent Decree .....	9
3.2 100% Design Report and Addenda.....	9
3.3 Remedial Action Work Plan .....	10
3.4 Health and Safety Plan.....	11
4.0 REMEDIAL DESIGN/ACTIONS.....	12
4.1 Soil Remedy.....	12
4.1.1 Soil Remedy - Consent Decree Requirements.....	12
4.2 Sediment Remedy [Not Applicable To This Property].....	14
4.3 Air Remedy [Not Applicable To This Property] .....	14
5.0 SITE CONTROLS AND DOCUMENTATION .....	15
5.1 Survey Control.....	15
5.2 Construction Control.....	15
5.3 Decontamination .....	18
5.4 Facility Documentation for Off-Site Disposal.....	18
6.0 SOURCE AND CONFORMANCE TESTING.....	20
6.1 Soil and Soil Products.....	20
6.1.1 Compacted Fill.....	20
6.1.2 Cover Soil .....	20
6.1.3 Topsoil .....	21
6.1.4 Subangular Stone [Not Applicable To This Property].....	21
6.1.5 Stone Riprap [Not Applicable To This Property].....	21
6.1.6 Subbase [Not Applicable To This Property].....	21
6.2 Geosynthetics.....	21
6.2.1 Geotextile.....	21
6.2.1.1 Materials .....	21
6.2.1.2 Quality Control Testing .....	22
6.2.1.3 Quality Assurance Testing.....	22
6.2.2 Geomembrane [Not Applicable To This Property] .....	22
6.2.3 Geocomposite [Not Applicable To This Property].....	22
6.2.4 Geogrid [Not Applicable To This Property].....	22
6.2.5 Interface Friction [Not Applicable To this Property] .....	22
6.3 Asphalt Cover Materials .....	22
6.3.1 Bituminous Materials [Not Applicable To This Property] .....	22
6.3.2 Aggregate [Not Applicable To This Property] .....	22
7.0 REMEDY CONSTRUCTION.....	23
7.1 Construction Sequence.....	23

## TABLE OF CONTENTS

(Continued)

7.1.1 Decommissioning .....	23
7.1.1.1 Decommissioning Wells [Not Applicable To This Property].....	23
7.1.1.2 Decommissioning Utilities and Structures.....	23
7.1.2 Soil Remedy.....	23
7.1.2.1 Subgrade and Drainage .....	23
7.1.2.2 Geosynthetics.....	24
7.1.2.3 Cover Soil .....	24
7.1.2.4 Topsoil and Vegetation.....	26
7.1.2.5 Revegetation .....	26
7.1.3 Sediment Remedy [Not Applicable To This Property].....	26
7.1.4 Air Remedy [Not Applicable To This Property] .....	26
8.0 DESIGN CHANGES.....	27
8.1 Change Management .....	27
8.2 Site Wide Design Changes.....	28
8.3 Property-Specific Design Changes .....	28
9.0 QUALITY ASSURANCE OBSERVATION AND TESTING .....	30
9.1 Decommissioning .....	30
9.2 Compacted Fill.....	30
9.3 Subgrade Preparation.....	30
9.4 Permeable Cover.....	30
9.5 Impermeable Liner Installation [Not Applicable To This Property] .....	31
9.6 Geocomposite Drainage [Not Applicable To This Property] .....	31
9.7 Geogrid Reinforcing [Not Applicable To This Property].....	31
9.8 Manholes and Culverts [Not Applicable To This Property].....	31
9.9 Seeding and Wetland Vegetation.....	31
10.0 RECORD DRAWINGS.....	32
11.0 CERTIFICATION .....	33

## TABLES

1. ISRT Clean Soil Thresholds
2. Testing Methods for Soils and Geosynthetics
3. Abbreviations

## APPENDICES

Appendix A – 100% Final Design Report Specifications

Appendix B – Submittals

Appendix C – Modifications

C.1 Design/Specification Change Requests (DSCRs)

C.2 Corrective Action Requests (CARs)

C.3 Variance Requests (VRs)

[Not Applicable To This Property]

## TABLE OF CONTENTS

---

(Continued)

C.4	Corrective Request Authorizations (CRAs)
	[Not Applicable To This Property]
Appendix D – Contractor Controls	
D.1	Air Monitoring
D.2	Surface Water Monitoring Exceedances
Appendix E – Monitoring Wells and Piezometers Decommissioning	
	[Not Applicable To This Property]
Appendix F – Fill Soil, Aggregate, Riprap, and Topsoil Materials	
F.1	Source Test Results
F.2	Soil Laboratory Test Results
F.2.1	Cover Soil and Granular Subbase Materials
F.2.2	Subangular Stone and Riprap Materials
	[Not Applicable To This Property]
F.2.3	Topsoil
F.3	Soil Moisture Density Tests Summary
Appendix G – Bituminous Materials	
Appendix H – Geosynthetic Materials	
H.1	Geotextile
H.1.1	Geotextile Inventory Summary
H.1.2	Geotextile Quality Control Certificates
H.1.3	Geotextile Conformance Tests
H.2	Geomembrane
	[Not Applicable To This Property]
H.3	Geocomposite
	[Not Applicable To This Property]
H.4	Geogrid
	[Not Applicable To This Property]
H.5	Impermeable Cover Installation
	[Not Applicable To This Property]
H.6	Interface Friction Test Summary
	[Not Applicable To This Property]

## TABLE OF CONTENTS

---

(Continued)

### Appendix I – Field Monitoring

- I.1 Subgrade Inspection Forms
- I.2 Geotextile Inspection Forms
- I.3 Geocomposite Inspection Summary  
[Not Applicable To This Property]
- I.4 Geogrid Inspection Summary  
[Not Applicable To This Property]
- I.5 Concrete Testing  
[Not Applicable To This Property]
- I.6 HDPE Pipe Pressure Test Summary  
[Not Applicable To This Property]
- I.7 East Central Hide Pile Amendment  
[Not Applicable To This Property]

### Appendix J – Created Wetland Cover System/Final Vegetation Establishment and Soil Stabilization Plan

[Not Applicable To This Property]

### Appendix K – Thermal Oxidation Unit

[Not Applicable To This Property]

### Appendix L – EPA Comments

## ATTACHMENTS

Attachment 1 – Record Drawings – A-21 – A-25 – Aero Realty Trust (Parcel 1) (Tax Map 9-2-3)

## **1.0 INTRODUCTION**

The Industri-Plex Site Remedial Trust (Remedial Trust) is required by the Consent Decree entered on April 24, 1989 by the United States District Court for the District of Massachusetts in the matter styled *United States v. Stauffer Chemical Company et al.*, Civil Action No. 89-0195-MC, and *Commonwealth of Massachusetts v. Stauffer Chemical Company et al.*, Civil Action No. 89-0196-MC, and recorded at the Middlesex South Registry of Deeds in Book 19837, Page 476 (Consent Decree) to fund and administer the obligations of the Consent Decree. At the request of the Remedial Trust, Roux Associates, Inc. (Roux Associates) has prepared this property-specific Final Cover Certification Report (Cover Certification Report) in compliance with the Consent Decree requirements. This Cover Certification Report documents completion of a portion of the Remedial Action for soil, sediments, and air at the Industri-Plex Superfund Site (Industri-Plex Site), Woburn, Massachusetts. Site wide completion of the Remedial Action for Soil, sediments, and air is documented in the Master Cover Certification Report for the Industri-Plex Site. The specific property addressed in this report are owned by the Aero Realty Trust (Parcel 1) (Tax Map 9-2-3) and located at 223 New Boston Street in Woburn, Massachusetts. Construction of the Remedial Action for soil, sediment, and air was completed on June 28, 1996. Changes to the cover at this property may have been made since that date. Approved changes to the cover are documented in the Administrative Record for the Industri-Plex Site.

In accordance with the Consent Decree and the Contract Documents for the Remedial Action, a certification report must be prepared by a registered professional engineer certifying that all remedial activities have been completed in full satisfaction of the requirements of the Consent Decree. As defined by the United States Environmental Protection Agency (EPA), (Federal Register, July 26, 1982) certification does not constitute a guarantee or warranty, but a “rendering of a professional opinion concerning compliance with a requirement of the regulations by a qualified professional in the field.”

### **1.1 Site Description and History**

The Industri-Plex Site is a 245 (+/-) acre area, located about 10 miles northwest of Boston, Massachusetts in the north part of Woburn, within the Aberjona River Valley. The Site is bounded on the east side by Interstate 93, and Interstate 95/State Route 128 is located about one half mile south of the Site. The Boston Edison Power Company right-of-way No. 9 is the

southwest boundary of the Site. The Massachusetts Bay Transportation Authority (MBTA) railway transects roughly the western third of the Site in a northwest-southeast direction. The Industri-Plex Site was surveyed by SAIC Engineering, Inc. and Liu Aerial Surveys in 1990 and 1991.

Since the mid-1800s, the Industri-Plex Site has been used primarily by companies producing chemicals for textile, leather, and paper. Chemical manufacturing operations occurred at the Site from 1853 to 1931, producing sulfuric acid and related chemicals, arsenic insecticides, acetic acid, dry colors, phenol, benzene, picric acid, toluene and trinitrotoluene (TNT). By 1929, the Merrimac Chemical Company, which occupied the Industri-Plex Site, had become one of the leading producers of insecticides and other chemicals in the United States. The Merrimac Chemical Company plant included 90 buildings on 417 acres, many of which were within the current Industri-Plex Site. Early operations included disposal of wastes in pits or low-lying wetlands. Liquid wastes were discharged into streams and later sewers. As a result, heavy metal wastes from the chemical operations contaminated Site soils and wetland sediments.

From 1934 to 1969, the property was used by several companies to manufacture glues and gelatins from animal hides. Raw, salted or limed hides, hide fleshings, or chrome tanned leather scraps from cattle, hogs, sheep or other animals were used to manufacture glue by extracting a protein called collagen from animal tissues or bones. Animal hide waste products from the rendering process were disposed of in mounds or hide piles on-Site. A developer purchased the plant property in the early 1970s intending to build a complex of industrial buildings (hence Industri-Plex) and began grading operations. During hide pile excavation, noxious gases and odors, attributable to the decomposing hide wastes, were released. The distinctive odor became known as the “Woburn odor.” Complaints from local residents and encroachment on wetland areas stopped further development of the Site.

In 1981, the EPA proposed the Industri-Plex Site for the National Priorities List (NPL), also known as Superfund. The Industri-Plex Site was finalized on the NPL in 1983. In May 1982, EPA and the Massachusetts Department of Environmental Quality Engineering [DEQE – currently known as the Massachusetts Department of Environmental Protection (MassDEP)] entered into a Consent Order with Stauffer Chemical Company to undertake a Remedial Investigation/Feasibility Study (RI/FS). In April 1985, Phase II of the RI/FS was completed.

The Remedial Investigation identified arsenic, lead, and chromium in Site soils and wetland sediments as well as impacts to the ground water and odors due to hydrogen sulfide and methyl mercaptans emitted from the hide piles. Abandoned buildings and waste lagoons were also present on the Site. Based on the RI/FS, EPA, along with MassDEP, established a Record of Decision (ROD) in 1986 for the first phase of the cleanup at the Industri-Plex Site (known as Operable Unit 1, OU-1), which included a protective cover over more than 100 acres of soil contaminated with heavy metals and animal wastes, a gas collection and treatment system, institutional controls, an interim groundwater remedy, as well as further investigations of Site related contamination at and downstream of the Site to support a future second phase (known as Operable Unit 2, OU-2). The location of the protective cover is illustrated in **Attachment 1** and includes an impermeable cover for the gas collection and treatment system situated at what is known as the East Hide Pile.

Further details of the Industri-Plex Site history can be found in the 1986 Record of Decision.

In a 1989 Consent Decree between EPA, MassDEP and the current and former property owners, two Trusts were established which set in motion the remediation and reuse of the Industri-Plex Site. The Remedial Trust was formed to prepare and implement the remedy according to the ROD. The Industri-Plex Site Custodial Trust (Custodial Trust) was formed to hold, manage, and sell a portion of the Site.

Golder Associates, Inc. (Golder) was selected in 1989 by the Remedial Trust to design the remediation for the Industri-Plex Site. The remedial design included pre-design investigations of the soils, wetlands, air, and groundwater.

The pre-design investigations included sampling analysis and studies to determine the extent of contamination and, in accordance with the Consent Decree, to evaluate cover types. Designs were needed to prepare the ground surface for cover. The remedial design included:

1. Plans for the demolition or decommissioning of abandoned buildings, railroad tracks, underground utilities, a personnel tunnel, and over 120 existing observation wells and piezometers used during the preliminary investigation.
2. Plans for controlling odors, fugitive dusts, and surface water runoff during construction to prevent off-Site impacts.

3. Evaluation of, and considerations for the future stability of, the hide pile slopes.
4. Plans for collecting and treating waste gases in a Thermal Oxidation Unit.
5. Plans for dredging, remediating, and revitalizing streams and wetlands.

The remedial design for contaminated soils and air included both permeable (soil and geotextile) and impermeable (soil and geomembrane) covers. A permeable cover system was designed for 60 acres of upland soils and three hide piles (known as the West, East-Central and South Hide Piles) contaminated with high concentrations of heavy metals and decomposing organic wastes. The permeable cover included a geotextile base to maintain separation between contaminated soils and clean cover material, a clean grading fill, and topsoil with vegetation. An impermeable cover was designed for a fourth hide pile (known as the East Hide Pile) which was approximately four acres and an active odor source. The impermeable cover included a high permeability gas collection layer, geomembrane, cover grading fill, topsoil, and vegetation. An active gas collection system was designed to collect gases trapped by the impermeable cover and convey the gases to a thermal oxidation unit for treatment. The permeable cover system for the Site was further divided into two categories: “Engineered Cover”; and “Equivalent Cover”. The Engineered Cover was designed and constructed by the Industri-Plex Site Remedial Trust as part of the response activities at the Site to prevent exposure to contaminated soil, and may be comprised of one or more of the following materials: geotextile, geomembrane, soil, gravel, bituminous concrete and/or asphalt. The Equivalent Cover represents existing structures serving as an adequate permeable cover. Equivalent Cover, although not designed as part of the Engineered Cover, functions to prevent exposure to contaminated soil, and may be comprised of one or more of the following ground covering structures or features, or portions of such structures or features: buildings; foundations; slabs; paved driveways, walkways, parking lots and/or roads; or other such ground covering structures or features. The location of Engineered and Equivalent Covers are illustrated in the Record Drawings.

Site remediation also required capping approximately five acres of contaminated streams and wetland sediment. Approximately seven acres of wetland enhancement, restoration, and creation were designed to compensate for wetland losses. Normandeau Associates, Inc. of Bedford, New Hampshire, was a key designer of the wetland mitigation plans.

A revised final (100%) Design Report was issued on May 8, 1992. Approval for the 100% Design Report was issued by EPA in consultation with the MassDEP on May 18, 1992. A Remedial Action Work Plan for Soil, Sediment and Air Remedy was issued on June 22, 1994, and approved by EPA, in consultation with MassDEP, on July 11, 1994.

## **1.2 Scope of the Remedial Action**

The Remedial Action (RA) implemented the Remedial Design prepared by Golder and distributed for bidding in April 1992. The RA included covering metal-contaminated soils encountered over an approximately 100-acre portion of the 245-acre Site, a portion of which is shown on Sheets A-21 and A-25 of **Attachment 1**. This certification addresses the remedial action performed on the Aero Realty Trust Property (Parcel 1) (Tax Map 9-2-3). The remedial action on these parcels included an at-grade permeable cover of clean soil, gravel, or asphalt overlying a geotextile layer that was placed directly on prepared existing ground and fill soil. The remedial action also included an above grade engineered permeable cover overlying a geotextile that was placed directly on prepared existing ground or fill soil.

Work conducted between 1992 and December 1997 is addressed in this report.

This report includes the following information as it pertains to the remedial action performed on the Aero Realty Trust Property (Parcel 1) (Tax Map 9-2-3):

- Relevant portions of the Final 100% Design Report (**Appendix A**);
- The submittal log (**Appendix B**);
- Modifications of specifications and plans (**Appendix C**);
- Results of Site air and surface water monitoring (**Appendix D**);
- Results of soil conformance and in-place material testing during the Remedial Action (**Appendix F, G**);
- Results of geosynthetics conformance material testing (**Appendix H**);
- Observations of subgrade preparation and geosynthetic installation (**Appendix I**);
- EPA Comments (**Appendix L**);
- Review of lines and grade control.

### **1.3 Report Format**

This property-specific Cover Certification Report was derived from the Master Cover Certification Report documenting the completion of the soil, sediment and air remedies at the Site [excluding MassPort Authority property documented in the April 1998 Regional Transportation Center (RTC) Cover Certification Report]. Other property-specific Cover Certification Reports will be produced for the remaining properties at the Site. This property-specific Cover Certification Report presents a generic description of all work performed to complete the soil, sediment and air remedies, some of which are applicable to this property. For those portions/sections which are not relevant to this property-specific Cover Certification Report, those sections have been identified as “[Not Applicable to This Property]”. The Master Cover Certification Report contains property-specific details and record drawings for 31 Tax Map lots at the Site including additional general and Woburn Roads/Right of Way information. Please reference the Master Cover Certification Report for this additional Site-wide information.

## **2.0 PROJECT PARTICIPANTS**

### **2.1 Overview**

In July of 1989 Golder was retained by the Remedial Trust to prepare the Remedial Design for the Site. The Consent Decree included the Remedial Design/Remedial Action Plan (RDAP). The RDAP required the preparation of Pre-Design Investigations and a Remedial Design. The design was executed in accordance with the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended and re-authorized. From 1990 to 1992 Golder prepared Preliminary, Intermediate, Pre-Final and Final Design Reports in conformance with the RDAP.

The Remedial Trust entered into an agreement with Chemical Waste Management, Inc. Remediation Services Group of Princeton, New Jersey, (CWM, also Contractor) to perform the Remedial Action in accordance with the RDAP and the Remedial Design plans and specifications. The name of the Contractor changed January 1, 1993 when CWM was acquired by Rust Remedial Services Inc. (Rust), then again in May of 1995 when OHM acquired Rust. The name Chemical Waste Management was retained as the legal name of the Contractor throughout the period covered by this report.

Several subcontractors assisted the Contractor with specific tasks during the remedial work. A list of the subcontractors and the services they provided is presented below:

- Rust Environment and Infrastructure, formerly SEC Donohue Inc., of Burlington, Massachusetts provided engineering support;
- Earth Tech Inc. (Earth Tech), formerly HMM Associates Inc., of Concord, Massachusetts provided surveying services from 1992 to 1993 and Meridian Land Services Inc. (Meridian) of Milford, New Hampshire provided surveying services from 1993 to 2001. Both surveying companies collected field documentation that would be used to establish the as-built drawings for this report;
- Eastmont Environmental Inc. of Walpole, Massachusetts conducted perimeter air monitoring;
- Beattie Enterprises of Lancaster, New Hampshire assisted with clearing and grubbing the Site;
- Midway Paving of Chelmsford, MA or its subcontractors performed paving work for the Site during 1992-1995;
- HMM Associates, Inc. (HMM) of Concord, MA performed surface water monitoring services;

- Toxikon Laboratories, of Woburn, Massachusetts, and 21st Century Environmental Inc. of Bridgeport, New Jersey, assisted the Contractor with water and soil analytical testing; and,
- Reliable Fence Company of Woburn, Massachusetts installed chain link fence on the Site.

In accordance with the Consent Decree, EPA contracted with Halliburton NUS (HNUS) of Wilmington, Massachusetts to provide technical oversight. Representatives of EPA and the MassDEP met with the Remedial Trust monthly (approximately) throughout the Remedial Action to oversee the performance of the work. Minutes of the meetings were recorded but are not included in this report.

Golder provided engineering quality assurance (QA) for the Remedial Action from September 1992 through December 1995. QA included examining and testing materials and procedures to verify and assure the Remedial Trust that the construction conformed to the specifications and drawings. The Remedial Trust directed Golder to perform a geophysical investigation during May 1993. Golder Construction Services Inc. (Golder Construction) provided on-Site construction management services for the Remedial Trust from March 1995 through December 1995.

The Remedial Trust contracted with Professional Service Industries, Inc. (PSI) of Canton, Massachusetts to perform soil moisture/density testing of compacted soils, soil laboratory testing, and asphalt testing. PSI also performed on-Site QA testing from August 1993 through December 1995.

During 1995, the Remedial Trust contracted with *de maximis, inc.* to be the Site manager for the Remedial Trust and to coordinate the work conducted by Golder, CWM, and other contractors. In 1998, the Site manager role was assumed by Maverick Construction Management Services, Inc. (Maverick). Following remedial construction activities, the Remedial Trust contracted directly with Maverick to coordinate the documentation of as-built cover conditions, to manage construction activities necessary to bring the cover into compliance with the 100% Design and to prepare a Draft Cover Certification Report. In 2007, the Remedial Trust contracted with Roux Associates to complete the certification of the cover, including the completion of the draft and final Cover Certification Report.

### **3.0 CONSTRUCTION DOCUMENTS**

RD/RA work performed for the Remedial Trust was completed according to the documents, plans, and specifications described in Sections 3.1 through 3.4.

#### **3.1 Consent Decree**

The Consent Decree (EPA, 1989) entered into between the Plaintiffs [*i.e.*, EPA and the MassDEP (Agencies)] and the Settlers defined the work that was to be undertaken at the Site. This definition is within the Consent Decree as well as the RDAP. The Consent Decree was based on the Record of Decision (ROD) for the Site (EPA, 1986). While the Consent Decree, the RDAP, and the ROD were consulted for the specific definition of the remedies to be implemented at the Site, the RDAP generalized the remedy and formed the basis for Golder's preparation of the Remedial Design Work Plan and ultimately the Final 100% Design Report. This certification applies to the Consent Decree but the primary component is the RDAP.

#### **3.2 100% Design Report and Addenda**

Golder developed the design and specifications and produced the "Final 100% Design Report, Part I" for the Industri-Plex Site (**Appendix A**), which was submitted to EPA and MassDEP in December 1991. This report applied to the remedy for soil, sediments, and air for the Site. Other Consent Decree requirements were deferred in accordance with the Agencies' instructions. The Agencies provided comments on the 100% Design Report, and responses to those comments were submitted April 3, 1992. A revised final 100% Design Report was issued April 3, 1992. The 100% Design was issued for bid April 25, 1992. The 100% Design Report was approved on May 18, 1992.

Subsequent addenda were issued for the 100% Design Report including the following:

- Addendum 1 issued May 1992 (EPA/MassDEP Approval March 11, 1993)
- Addendum 2 issued June 1992 (EPA/MassDEP Approval March 11, 1993)
- Addendum 3 issued May 14, 1993 (EPA/MassDEP Approval May 27, 1993)
- Addendum 3 revision 1 August 27, 1993 (EPA/MassDEP Approval September 10, 1993)
- Addendum 3 revision 2 October 18, 1993 (EPA/MassDEP Approval November 2, 1993)

On October 1, 1996, EPA approved an alternative permeable cover design for the RTC entitled RTC Alternate Cover Design (Golder, 1996). Details of the construction and certification of the RTC Alternative Cover Design are presented in the RTC Cover Certification Report (Golder, 1998), which was approved by EPA in April 28, 1998.

### **3.3 Remedial Action Work Plan**

According to the Consent Decree, the Remedial Action Work Plan (RAWP) was to be submitted to the Agencies within sixty (60) days after EPA and the Commonwealth received notification of the selected Remedial Action Contractor. The RAWP was prepared by the Remedial Action Contractor for the Remedial Trust to implement the Site remedy consistent with the approved design for each Site area. The Consent Decree required that the RAWP contain:

- (1) A description of all the activities necessary to implement the Remedial Actions; and
- (2) A timetable for the completion of all these activities, which shall also identify major and minor milestone events in the Remedial Action process. The schedule of significant events shall be consistent with Attachment D, [Project Schedule and Remedial Design/Action Milestones].

On August 18, 1992, prior to EPA's receipt, review, and acceptance of the RAWP, the Remedial Trust requested EPA and MassDEP approval of a preparatory, non-intrusive work plan for work that would begin in September. Submittal of this work plan allowed the Contractor to maximize the construction work season while awaiting final approval of the RAWP. An addendum to the August request was submitted to EPA and MassDEP on October 9, 1992 expanding the earlier request to include debris removal and non-intrusive work and above ground structure demolition. Both the August 18 and October 9 requests were tacitly approved by EPA in consultation with MassDEP. As required, the Remedial Trust submitted a RAWP to EPA on October 5, 1992 (Consent Decree Attachment, Section B, Subsection 3B).

An interim RAWP was submitted to EPA on October 22, 1992 with a request to begin work west of the MBTA railroad tracks. EPA in consultation with MassDEP provided comments on the interim RAWP on November 25, 1992 and a revised interim work plan was submitted to EPA in December 1992. With EPA and MassDEP concurrence, the Remedial Trust authorized the Contractor to begin remediation of the Site on December 2, 1992.

EPA's review of the original RAWP, in consultation with MassDEP, continued through the first half of 1993. EPA, in consultation with MassDEP, provided a conditional approval of the RAWP on March 11, 1993. The Agencies had two main concerns, 1) "the effect of the proposed groundwater treatment changes on the 'Created Wetlands' (CW); and 2) the maintenance of air and stream water quality (ARARs) during the construction of the Remedy." EPA, after consultation with MassDEP, requested the following: 1) a revised CW design with a buffer and separation from the groundwater; and 2) implementation of a program for surface water sampling for contaminants.

Following the Remedial Trust's responses, EPA after consultation with MassDEP, presented an approval of the RAWP on May 19, 1993, contingent upon: 1) sampling of surface water to measure water quality; 2) resolution of water treatment design questions; 3) provision of a copy of the Contractor drilling and blasting plan and 4) a requirement to cover all frequently used roads with a minimum of 4 inches of crushed stone. On July 2, 1993, EPA, after consultation with MassDEP and the Remedial Trust, reached an agreement on procedures for testing surface water and revisions to the CW.

Erosion and sediment control issues prompted further revisions to the RAWP. On March 1, 1994, a major revision to the RAWP was submitted to EPA. EPA, after consultation with MassDEP, approved the revision on July 11, 1994. Subsequent revisions were submitted and the latest version of the RAWP at the preparation of this report is August 21, 1995.

### **3.4 Health and Safety Plan**

A Health and Safety Plan (HASP) prepared by CWM and dated August 1992, for the remediation of the Site was transmitted to EPA, after consultation with MassDEP, on September 2, 1992. The submission was made in fulfillment of the requirements to the Consent Decree Appendix I, Section F. The Remedial Trust was informed at the March 22, 1993 meeting that EPA, after consultation with MassDEP, would not approve the HASP but would provide comments. The HASP was revised on March 16, 1994; December 20, 1994; May 5, 1995; and June 29, 1995 largely to address changes to the Emergency Response Plan. In accordance with the Agencies' policy, the HASP was reviewed but not approved. The latest version of the HASP as of this report is June 29, 1995.

## **4.0 REMEDIAL DESIGN/ACTIONS**

### **4.1 Soil Remedy**

The soil remedy for the Site involved covering on-Site soils containing lead, arsenic, or chromium at or above the action levels established by the Consent Decree with permeable soil cover. An impermeable cover was designed for a four-acre hide pile (East Hide Pile) on Site, which was an active odor source. The Aero Realty Trust Property (Parcel 1) (Tax Map 9-2-3), however, does not include the East Hide Pile and therefore required only permeable soil, asphalt, and gravel cover.

#### **4.1.1 Soil Remedy - Consent Decree Requirements**

The RDAP is included as Appendix I of the Consent Decree. Throughout the RDAP, the remedy for the Site is referred to as the “cap”. However, the 100% Design refers to the Site remedy as the “cover”. The term “cover” has been retained for the text of this report, excluding the RDAP.

Page 1 of the RDAP states the following:

“The remedial action for soils, sediments, and sludges contaminated with Hazardous Substances, other than those emitting odors (the East Hide Pile), shall include site grading, capping with a permeable soil cover, excavation, dredging, and/or consolidation for all areas containing Hazardous Substances at concentrations above established action levels (arsenic = 300 ppm, lead = 600 ppm, chromium = 1,000 ppm)....”

Furthermore the RDAP states, “Settlers shall design and implement remedial action for soils contaminated with Hazardous Substances above the action level for metals that shall consist of site grading and capping together with Institutional Controls. Areas already covered adequately by buildings, roadways, parking lots, or other ground covering features, would not receive cover material, instead allowing the structures themselves to act as the protective cap.

For small areas on-Site, such as the landscaped areas between buildings and parking lots, Settlers may propose location-specific alternatives to capping consisting of excavation of contaminated soil and consolidation on-site with similarly contaminated soils, or placement of a protective layer such as asphalt to cap the contaminated soils.

Settlers shall design and implement the remedial actions for contaminated soils in accordance with the following requirements:

(1) cap design and construction activities shall be in accordance with regulations and/or guidance on cap design for permeable covers as summarized in [RDAP] Attachment A ... provided that an alternative permeable cap design including a permeable synthetic fabric and a soil layer less than 30 inches in depth, may be used in all areas of the Site where Settlers demonstrate to EPA and the Commonwealth that the alternative cap design will perform as well as or better than the permeable cap design summarized in Attachment A.”

Attachment A to the RDAP states that:

“Permeable covers shall be designed and constructed to include at a minimum the following:

A. A vegetated top layer which shall be:

1. of a minimum thickness of six (6) inches;
2. capable of supporting vegetation that minimizes erosion and minimizes continued maintenance;
3. planted with a persistent species with roots that will not penetrate into the contaminated soils;
4. designed and constructed with a top slope of between 3 percent and 5 percent after settling and subsidence or, if designed and constructed with less than 3 percent, a drainage plan to ensure that the ponding of surface water does not occur or, if designed and constructed with a slope of greater than 5 percent, an expected soil loss of less than 2 tons/acre/year using the USDA universal soil loss equation; and
5. designed and constructed with a surface drainage system capable of conducting effective run-off across the cap.

B. A base layer that shall be:

1. of a minimum thickness of twenty-four (24) inches of appropriate fill material; and
2. designed and constructed to prevent clogging.”

Two alternative permeable covers were designed as part of the remedy under the Consent Decree. The first alternative permeable cover design concept utilizing a 16-inch thick borrow cover overlaying a geotextile was developed in the Alternative Cover Design Report (Golder, 1989). This design was subsequently approved by the EPA and MassDEP in a letter dated September 11, 1989. The second alternative permeable cover design was the design to accommodate the RTC Alternative Cover (VHB/Golder, 1996). The EPA, in consultation with the MassDEP, approved the RTC Alternate Cover design in a letter dated October 1, 1996. The RTC Alternative Cover was properly constructed and documented in the RTC Cover Certification Report (Golder, 1998), approved by EPA on April 28, 1998.

#### **4.2 Sediment Remedy [Not Applicable To This Property]**

#### **4.3 Air Remedy [Not Applicable To This Property]**

## **5.0 SITE CONTROLS AND DOCUMENTATION**

### **5.1 Survey Control**

The Contractor utilized Meridian and Earth Tech to provide record survey documentation of the extent of cover, configuration of grading and general as-built conditions of the cover and any buried or concealed construction. The results of these record surveys are provided in **Attachment 1** (Sheets A-21 through A-25). The record drawings are based on the survey control provided in the 100% Design Report plans.

### **5.2 Construction Control**

During the RA work, the Contractor was required by the project specifications to provide controls to maintain a safe work environment and protect the public health and safety. Such controls included air monitoring and surface water monitoring (**Appendix D**).

#### ***Air Monitoring***

The objective of the ambient air monitoring program was to monitor total reduced sulfur (TRS) compounds and total suspended particulate (TSP) and inhalable particulate (PM10) as well as heavy metals (arsenic, lead and chromium) in TSP at fence line locations during remediation efforts.

Specification section 01562 - Dust Control of the 100% Design Report required the contractor to employ construction methods and means that would keep airborne particulates below the following action levels:

- PM10 particulates were to be limited to an annual average of less than 150 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) at Site monitoring points; and
- Respirable dust concentrations were limited to  $90 \mu\text{g}/\text{m}^3$  at Site monitoring points and  $5,000 \mu\text{g}/\text{m}^3$  in the worker's breathing zone.

Data gathered by dust monitoring devices was used to monitor metals in the particulates to ensure that they were below the following threshold limit values (TLVs) outlined in the American Council of Governmental and Industrial Hygienists:

<b>Arsenic</b>	<b>Chromium</b>	<b>Lead</b>
0.02 µg/m <sup>3</sup> (of air)	1.36 µg/m <sup>3</sup> (of air)	1.36 µg/m <sup>3</sup> (of air)

Appendix B to Volume 6 of the 100% Design Report provides a detailed Odor Control Plan which specifies that TRS compounds in air at the perimeter of the Site may not exceed 47 parts per billion (ppb).

Eastmount Environmental Inc. conducted ambient air quality testing, beginning in September 1992. The particulates and heavy metals were sampled at four perimeter monitoring locations. TRS sampling was conducted at seven perimeter monitoring locations. See **Appendix D.1** for a map indicating sampling points.

#### ***TSP and PM10 Sampling***

TSP and PM10 samples were collected using Hi-Volume samplers. Each Hi-Volume sampler was programmed to sample at each of the four sample locations from midnight to midnight on six day intervals. In addition to the four sample locations, a duplicate TSP sampler was stationed at Location 4 and a duplicate PM10 sampler was stationed at Location 2. The duplicate TSP sample was also analyzed for metals (arsenic, chromium, and lead).

Eastmount Environmental prepared Hi-Volume Sampling Summary reports. The Summary of Hi-Volume Results tables from those reports issued for periods during performance of work on the RA are included in **Appendix D.1**. Analytical results showed levels of TSP, PM10, and metals below the action levels.

#### ***TRS Sampling***

The ambient TRS sampling was conducted using a Photovac 10S Plus portable gas chromatograph capable of measuring odorous sulfur compounds in the low part per billion range. Ambient TRS sampling was conducted twice a week from the beginning of the sampling program up until December 1992. After that, the sampling frequency was reduced to once every six days.

Eastmount Environmental prepared Ambient Air Sampling Summary reports. The Summary of Ambient TRS Results tables from those reports issued for periods during performance of work on the RA are included in **Appendix D.1**. The majority of TRS results were non-detects. Hydrogen sulfide was detected on a few occasions; however, there were no exceedances of the 47 ppb action level.

### ***Surface Water Monitoring***

CWM was also required to monitor surface water during remedial activities. According to the Site Surface Water Monitoring Plan (RAWP, Section 5.2), the following Ambient Water Quality Control (AWQC) concentrations were used as the response action levels for the Industri-Plex Site:

- AWQC chronic concentration for arsenic = 0.190 milligrams per liter (mg/L)
- AWQC chronic concentration for chromium = 0.210 mg/L
- AWQC acute concentration for lead = 0.082 mg/L

The above-tabulated AWQC limits correspond to a hardness of 100 parts per million (ppm). Water hardness values on-Site indicated moderately hard to very hard conditions (EPA, 1986). Historical background surface water data collected from surface water drainways periodically contained lead concentrations of 0.025 mg/L. Since these background levels routinely exceeded the threshold value of the AWQC chronic concentration for lead, the AWQC acute concentration was approved on June 8, 1994 as the response action level by MassDEP and EPA.

Surface water sampling was conducted to meet the project specifications and the RAWP requirements. The surface water controls established by EPA and included in the Contractor's RAWP required the following procedures:

- Each work day, field measurements were conducted at various stations (whenever there was flow) for turbidity, dissolved oxygen, temperature, specific conductivity, and pH. The sample from each station with the highest turbidity during the week was submitted for laboratory analyses of total and dissolved arsenic, lead, and chromium, total suspended solids (TSS), and hardness. Any sample with a turbidity greater than or equal to 85 nephelometric turbidity units (NTU) was also submitted for the same laboratory analyses.

- Additional sampling was conducted if a storm and/or a construction event caused the turbidity to rise above 85 NTU at the monitoring stations. The samples were analyzed for total and dissolved metals (arsenic, chromium, and lead), TSS, and hardness. Field measurements for turbidity, dissolved oxygen, temperature, specific conductivity, and pH were conducted at the time of sampling.

HMM conducted surface water quality sampling as a subcontractor to CWM. Test results indicate that the surface water quality remained below the response action thresholds with the exception of exceedances as listed in **Appendix D.2**. Specific reasons and mitigating actions for each exceedance are described in the Quarterly Reports of 1993-1995. Generally, the Agencies were notified and the mitigating actions were performed to the satisfaction of the Agencies.

### **5.3 Decontamination**

CWM was required to decontaminate all equipment that came in contact with contaminated soils, sediments, and sludges during the work. Water used during the pressure washing was collected and treated at the on-Site storage areas. The decontamination was performed in accordance with the specifications and the project work plans. Water generated from decontamination activities was stored in a Modu-tank on the east side (across the MBTA rail lines) of the Site. The water was treated and properly disposed of on-Site as approved by the agencies.

Personnel entering work areas (exclusion zones) during the RA, wore protective equipment as specified by CWM's Health and Safety Plan (HASP). The HASP also specified personal decontamination procedures. All personnel leaving work areas were required to properly clean or dispose of all protective equipment, small tools and instruments.

### **5.4 Facility Documentation for Off-Site Disposal**

Prior to disposing of any materials off-Site during the RA, EPA was to determine if the proposed facilities were of "acceptable status" and could receive materials from the Site. Only non-hazardous vegetation (cleared/cut above ground surface) was disposed off-Site during the RA. During the work, as previously discussed, wastewater from decontamination activities was stored on the east side of the Site and treated prior to disposal.

All grubbed vegetation (containing soil), and contaminated soil, sediments, and sludges excavated from the Site were consolidated in other areas of the Site in accordance with the RDAP. All contaminated materials excavated from the Site were placed on the hide piles that were covered as part of the approved RA. However, prior to placement on the hide piles, saturated sediments and sludges were dried over large areas east of the MBTA rail lines on the Site within the remedial cover area.

## **6.0 SOURCE AND CONFORMANCE TESTING**

Testing performed for the Remedial Trust, such as testing of soil and soil products and geosynthetics, is described in Sections 6.1 and 6.2, respectively. The testing methods according to the specifications are summarized in **Table 2** [*i.e.*, Golder's Quality Assurance Procedure Plan (QAPP) Table 1-1]. Abbreviations used in the supporting documentation found in the appendices are summarized in **Table 3**.

### **6.1 Soil and Soil Products**

#### **6.1.1 Compacted Fill**

The majority of compacted fill materials were derived from on-Site grubbing and dredging operations. Compacted fills were used as stabilizing fill to flatten hide pile slopes and re-grade low relief areas to promote drainage. A portion of rock and concrete demolition debris generated by crushing and screening operations was also used to a limited degree as compacted fill material. The remaining compacted fill was imported from off-Site borrow areas. Most of the off-Site fill was composed of silty sand from a quarry in Hubbardston, Massachusetts and glacial till from a borrow pit on Deer Island, Boston Harbor, Massachusetts. Compacted fill tests included grain size distribution and primarily Standard Proctor tests with some Modified Proctor tests as needed.

#### **6.1.2 Cover Soil**

All cover soil used on-Site was from off-Site sources. Cover soil placed on slopes flatter than 8 horizontal to 1 vertical (8H:1V) was typically a granular silt from a glacial till deposit on Deer Island. Cover soil placed on slopes steeper than 8H:1V and some slopes flatter than 8H:1V was a silty sand from a quarry in Hubbardston. Cover soil tests included grain size distribution, Standard and Modified proctor densities, interface friction, and Atterburg Limits. Results of the testing are provided in **Appendix F**. Analytical testing was performed on Deer Island cover soil materials to verify the levels of potential contaminants. All soil materials tested and placed on-Site met the clean soil thresholds set up by EPA, after consultation with MassDEP, or were otherwise approved by a variance in accordance with EPA in consultation with MassDEP criteria. EPA in consultation with MassDEP clean soil threshold criteria for cover soil used at the Site are summarized in **Table 1**. Analytical test results are provided in **Appendix F.1**.

### **6.1.3 Topsoil**

According to the Consent Decree, topsoil must be capable of supporting vegetation that minimizes both erosion and continued maintenance. Topsoil used for the cover in upland areas and as a wetland vegetative cover soil came from several off-Site sources. Such source locations were from the following Massachusetts towns: Andover, Reading, Salem, and Tewksbury. Other topsoils were sourced from the following New Hampshire towns: Nashua, New Boston, and Manchester. Each source was tested for grain size distributions, organic content, and soil fertility or Baker Soil test. Results of testing are provided in **Appendix F.2.3**. Where the topsoil did not meet some criteria, but would be capable of meeting the Consent Decree requirement for being capable of supporting vegetation, a variance was requested and received from EPA, after consultation with MassDEP.

### **6.1.4 Subangular Stone [Not Applicable To This Property]**

### **6.1.5 Stone Riprap [Not Applicable To This Property]**

### **6.1.6 Subbase [Not Applicable To This Property]**

## **6.2 Geosynthetics**

### **6.2.1 Geotextile**

#### **6.2.1.1 Materials**

Geotextile materials were supplied by the following three manufacturers: Nicolon/Mirafi, Polyfelt Americas Inc., and Synthetic Industries. Nicolon/Mirafi provided 6-ounce (oz), 10-oz and 16-oz geotextile, Polyfelt Americas Inc. provided 6-oz and 16-oz geotextile and Synthetic Industries provided 16-oz geotextile. All fabrics are permeable, non-woven, needle-punched monofilament and allow percolation. The geotextile was used in the cover to primarily separate the contaminated soil from the clean cover soil (Golder, 1989). The geotextile also precludes upward migration of contaminated material by frost heave effects; provides a drainage capillary break layer at the base of the cover on slopes to prevent sloughing during thaws; and provides further means of reducing the chance of incidental contact through land use.

### **6.2.1.2 Quality Control Testing**

The manufacturers of the geotextile material provided Quality Control certificates for the installed 6-, 10-, and 16-oz materials. Copies of the Quality Control Certificates are presented in **Appendix H.1.2**. As material was delivered to the Site, Golder reviewed the Quality Control Certificates for conformance with the 100% Design through the submittal process.

### **6.2.1.3 Quality Assurance Testing**

Rolls of 6-, 10- and 16-oz geotextile were tested for conformance to the 100% Design Report specifications. Conformance testing was performed by Golder Construction Service's Geosynthetic Laboratory (Golder Construction's Geosynthetic Laboratory) located in Atlanta, Georgia. Test results are provided in **Appendix H.1.3**. Before individual rolls of geotextile were deployed on-Site, Golder reviewed the test results for conformance with the project specifications.

### **6.2.2 Geomembrane [Not Applicable To This Property]**

### **6.2.3 Geocomposite [Not Applicable To This Property]**

### **6.2.4 Geogrid [Not Applicable To This Property]**

### **6.2.5 Interface Friction [Not Applicable To this Property]**

## **6.3 Asphalt Cover Materials**

### **6.3.1 Bituminous Materials [Not Applicable To This Property]**

### **6.3.2 Aggregate [Not Applicable To This Property]**

## **7.0 REMEDY CONSTRUCTION**

### **7.1 Construction Sequence**

#### **7.1.1 Decommissioning**

##### **7.1.1.1 Decommissioning Wells [Not Applicable To This Property]**

##### **7.1.1.2 Decommissioning Utilities and Structures**

The 100% Design Report identified features that required decommissioning or abandonment prior to construction of the cover for the RA. Other abandoned below grade features that were discovered during construction of the cover were either removed to a depth 2 feet below the placement of the permeable cover or cleaned and backfilled with clean concrete. These features were left in place without any demolition or decommissioning if they did not otherwise impair the long-term effectiveness of the remedy. The general majority of the structure decommissioning occurred during construction of the RTC. A more detailed illustration of this decommissioning can be found in the “Final Report on RTC Cover Certification” dated April 1998 and prepared by Golder.

#### **7.1.2 Soil Remedy**

##### **7.1.2.1 Subgrade and Drainage**

Existing vegetation was cleared and root matter grubbed to a minimum depth of one foot prior to placement of the permeable cover. No herbicides were employed to control re-establishment of vegetative growth. Tree roots were grubbed to a depth of 2 feet. Woody material from above ground, roots and other vegetation were chipped and stockpiled for later placement as fill under the permeable cover. Rocks and concrete debris grubbed from the surface were crushed on-Site in order to comply with the fill material specifications. Reinforcing steel was removed from the concrete during the crushing operations and stockpiled for off-Site disposal.

The cover area in the vicinity of bedrock outcrops or exposed concrete structures was grubbed of vegetation and cleaned in accordance with recommendations of the Site Health and Safety

Officer and documented by the Contractor. The surrounding soil cover was extended up to the outcrop or structure.

Existing subgrade soils were proof rolled prior to placing the cover and fill materials were compacted and tested. The final prepared grade was rolled with a 10-ton smooth wheel compactor or in small areas compacted with a hand operated plate vibratory compactor. Where positive drainage was called for in the 100% Design Report plans, such drainage was achieved in the finish grade of the cover. Throughout construction, erosion and sedimentation measures were generally utilized and maintained in accordance with the 100% Design Report specifications to control soil loss. Any deficiencies in the erosion and sedimentation measures were corrected in accordance with EPA in consultation with MassDEP guidelines.

#### **7.1.2.2 Geosynthetics**

After proof rolling, the prepared subgrade was inspected and any protruding debris or roots greater than ½-inch in diameter were manually removed prior to placing geosynthetics. After geosynthetics were placed, filling was performed to reach final elevations.

A 6-oz per square yard non-woven geotextile was used in the permeable cover on the subject property. The geotextile materials were sewn together using white nylon thread for dark fabric and black thread for white fabric.

The geotextile seam was initially placed with a minimum slack along the seam to protect it and allow for movement in the geotextile during placement of cover soil. This procedure was primarily practiced in the developed areas of the Site with little topographic relief. Subsequent reviews of the procedure and the 100% Design Report concluded the extra slack was unnecessary and the procedure was discontinued for the remainder of the Remedial Action (**Appendix C, DSCR-030-R2**).

#### **7.1.2.3 Cover Soil**

Cover soils placed over the geotextile on slopes greater than 8H:1V were granular materials from off-Site sources that had an inherently low potential to clog the geotextile. For slopes flatter than 8H:1V, the cover soil from off-Site sources could contain more than 12 percent by weight passing the #200 sieve. In all areas where the remediated slope was steeper than 33 percent, a

geogrid reinforcement layer was included at the base of the cover soil immediately above the geosynthetic layer. The cover soil was placed in a manner that minimized imposed stresses on the underlying geosynthetics by using low ground pressure earth moving equipment and maintaining a minimum thickness of 12 inches of soil between the rubber tire equipment and the geosynthetic. Cover soil placed in unpaved areas with permeable cover was nominally compacted by the action of the placing equipment only.

Other cover sections used in limited areas or for access roads were comprised of various combinations of cover soil and dense graded aggregate subbase or riprap. Each modified section of cover is designed to be a minimum of 16 inches in accordance with the specifications of the 100% Design Report. The types and locations of these modified sections are included in the record drawing documentation, **Attachment 1**.

Minimum thicknesses of cover soil are detailed in Section 02242 of the 100% Design Report. Generally, the permeable cover consists of 12 inches of select soil fill and 4 inches of topsoil, while the gravel permeable cover consists of 13 inches of cover soil and 3 inches of gravel surface. The tolerance, in thickness is -0.0 feet and +0.3 feet. Based upon survey data collected both at the time of construction, as well as post construction data collected, the vast majority of the Site met the design thickness within the tolerances.

Any isolated areas identified by multiple post construction survey data points to be below the acceptable tolerances, were corrected by the placement of additional cover fill to meet the required thickness. This repair of cover fill was performed during the summer of 1999 by Maverick.

Based on analysis of the of the relevant survey data points located on the Aero Realty Trust Property (Parcel 1) (Tax Map 9-2-3), the minimum thickness of cover soil specified in Section 02242 of the 100% Design Report was met at all locations surveyed throughout the subject parcels.

#### **7.1.2.4 Topsoil and Vegetation**

Topsoil was placed over the cover soil in 4-, 6- or 8-inch thicknesses as specified by the 100% Design Report. After placing the top soil, lime and fertilizer were applied to the topsoil by a York rake in larger areas and by a walk-behind drop-spreader for small areas. Seed was broadcast by the hydroseed method in all other areas using fertilizer mulch and seed according to the 100% Design Report, or approved variances.

#### **7.1.2.5 Revegetation**

The vegetation on the upland soil covers of the Site has been restored to an herbaceous meadow to protect the underlying geotextile from penetration of large, woody roots of trees and shrubs. Drainways adjacent to upland covers have been revegetated with shallow-rooted overhanging vegetation which will eventually provide cooling shade and organic input in the form of leaves.

Criteria for selecting the revegetation plants and seeds in the 100% Design Report included:

- Endemic to Central Massachusetts;
- Tolerant of full sun and water levels;
- Easily established, with fibrous root systems rather than tap roots; and
- Perennials, or prolific annuals.

#### **7.1.3 Sediment Remedy [Not Applicable To This Property]**

#### **7.1.4 Air Remedy [Not Applicable To This Property]**

## **8.0 DESIGN CHANGES**

Section 8.0 describes design changes associated with the Alternative Cover Design Report (Golder, 1989), approved by EPA on September 11, 1989, and the RTC Cover Certification Report (VHB/Golder, 1996), approved by EPA on October 1, 1996.

### **8.1 Change Management**

During the Remedial Action from 1992 to 1994 for the Site, changes were managed through the Remedial Trust. At the start of 1995, the Remedial Trust and Contractor agreed to a new scope and cost contract for the remaining remedial work. The Construction Management contractor, Golder Construction, performed change management during 1995 as an agent for the Remedial Trust.

Managing changes for the Remedial Action primarily included changing the agreed upon scope of work or technical details of the 100% Design Report. Requirements identified in the Consent Decree were not changed unless approved by EPA, after consultation with MassDEP. Changes could be initiated from any of the following: EPA or MassDEP, the Contractor, the Remedial Trust or Golder as the designer, and later, Golder Construction in the role of Construction Managers.

Changes were divided into two categories, design specification changes and administrative, cost and schedule changes. Design specification changes were usually technical in nature and involved specific changes to the details of the specifications and plans presented in the 100% Design Report. Generally these changes were minor and EPA, after consultation with MassDEP, initially wanted only to review significant changes. Design changes were originally documented as design/specification change requests (DSCR). Impacts to cost and schedule were handled by another system administered by the Remedial Trust.

Early in 1994, the Contractor made several management revisions including a new method for managing changes. The Contractor introduced a change management system that included Variance Requests (VRs), Change Request Authorizations (CRAs), Corrective Action Requests (CARs), and Requests for Information (RFIs), procedures that subsequently were accepted by the Remedial Trust. The DSCR system was phased out by mid 1994 with the introduction of this

change management system. Copies of all the associated forms pertaining to this Cover Certification Report are included in **Appendix C**.

## **8.2 Site Wide Design Changes**

A series of DSCRs and CARs were adopted for Site wide application.

The Site wide design changes listed below were approved by the resident design engineer, project manager, EPA and/or MassDEP. The design changes generally related to grubbing, geotextile selection, geotextile installation, fill materials selection, and fill materials sampling. Several design changes applied to design details that required revision to match the 100% Design Report. The approved design changes included:

- DSCR-001
- DSCR-002
- DSCR-003
- DSCR-023
- DSCR-027
- DSCR-030
- DSCR-056
- DSCR-069

Additional Site wide design changes were identified as requiring further review in order to verify compliance with the 100% Design Specifications. These design changes included:

- CAR-053 involved a request for resampling of Deer Island Stockpile materials due to incorrect initial sampling procedures. The stockpile was resampled on March 30, 1994 and approved by the Agencies on April 28, 1994. The CAR was not signed completely by the design engineer, which appears to be an administrative discrepancy that does not affect the integrity of the cover.
- CAR-071 involved a request for resampling of soil Stockpiles 5 and 6. Hold times for volatiles in the soils were exceeded. The Remedial Trust decided to accept data for Stockpile 5, but requested Stockpile 6 be resampled. Stockpile 6 was resampled on March 30, 1994, and test results were approved by the Agencies on April 28, 1994. The CAR was not signed completely by the design engineer, which appears to be an administrative discrepancy that does not affect the integrity of the cover.

Additional details and documentation of Site wide design changes are located in **Appendix C**.

## **8.3 Property-Specific Design Changes**

A series of DSCRs and CARs were adopted for application on the subject property.

The property-specific design changes listed below were approved by the resident design engineer, project manager, EPA and/or MassDEP. The design changes generally related to materials, materials testing, and cover types. The approved design changes included:

- DSCR-011
- DSCR-039
- DSCR-061

Additional property-specific design changes were identified as requiring further review in order to verify compliance with the 100% Design Specifications. These design changes included:

- CAR-055 involved a generic request pertaining to all properties requiring topsoil cover on New Boston Street. The Contractor added soil amendments to the original topsoil submittal, because the optimum seeding time for soil had passed. The topsoil amendments were added on June 9, 1994, and sod was placed over the prepared topsoil. However, the CAR form was not signed completely by the design engineer, which appears to be an administrative discrepancy that does not affect the integrity of the cover.
- CAR-058 involved a request for approval of geotextile panel placement that differed from the original submitted panel layout. The Contractor made a constructability decision to lay the geotextile panels in a different orientation than the original layout. The CAR form indicated that the request was accepted as is and that no corrective action was needed. However, the form was not signed completely by the design engineer, which appears to be an administrative discrepancy that does not affect the integrity of the cover.

Additional details and documentation of property-specific design changes are located in **Appendix C**.

## **9.0 QUALITY ASSURANCE OBSERVATION AND TESTING**

Construction documentation includes daily field reports and weekly reports to the Remedial Trust. Inspection field diaries were also prepared, and photographs were taken on a regular basis throughout construction. The Golder reports and diaries are not included in this document, but are available for review at Golder's Manchester, New Hampshire office.

### **9.1 Decommissioning**

Decommissioning operations were conducted under intermittent field observation by Golder as a representative of the Remedial Trust. A report of decommissioning activities conducted on the subject property is included in **Appendix E**.

### **9.2 Compacted Fill**

Field moisture-density tests were generally performed at least once per 5,000 square feet per lift using a Troxler Model 3440 Nuclear Density gauge. Golder periodically monitored the soil testing operations performed by PSI. Failing tests were retested. During 1993 to 1994 the Contractor performed soil moisture density tests as quality control testing. The QC testing was performed by Express Geotesting, Concord, Massachusetts. A summary of field moisture density tests is located in **Appendix F.3**.

### **9.3 Subgrade Preparation**

Subgrade preparation was inspected by Golder or PSI and the Contractor prior to geotextile deployment. A subgrade inspection form was prepared by Golder, PSI, or the Contractor for areas in which deployment would take place. Subgrade inspection forms are provided in **Appendix I.1**.

### **9.4 Permeable Cover**

Geotextile was deployed over the prepared subgrade and seamed. The seams were inspected by Golder or PSI and the Contractor to verify the connection. A geotextile seam inspection form was prepared by Golder, PSI, or the Contractor. Geotextile seam inspection forms are provided in **Appendix I.2**.

Cover soil was placed as permeable cover over the geotextile in accordance with the 100% Design Report, and was nominally compacted by the placing equipment. No inspection or testing was required according to the 100% Design Report. Surveyors verified the cover thickness prior to placing topsoil or gravel. Topsoil, soil amendments, and seeds were then added, and the seed germinated with rainfall or water applied from water trucks. The quality of vegetative cover was evaluated. Erosion control matting was utilized in areas where seed did not germinate well.

#### **9.5 Impermeable Liner Installation [Not Applicable To This Property]**

#### **9.6 Geocomposite Drainage [Not Applicable To This Property]**

#### **9.7 Geogrid Reinforcing [Not Applicable To This Property]**

#### **9.8 Manholes and Culverts [Not Applicable To This Property]**

#### **9.9 Seeding and Wetland Vegetation**

Calculations for soil loss, based on the United States Department of Agriculture (USDA) Soil Loss Equation, verify assumptions of the topsoil type, anticipated rainfall, vegetative cover type, and slope steepness are still valid with a calculated loss of less than 2 tons per acre per year. Erosion control matting was installed as a temporary measure to supplement the vegetated cover when the remaining growing season was too short to establish protective vegetative growth.

## **10.0 RECORD DRAWINGS**

Based on the Survey Control (Section 5.1) established for the Industri-Plex Site, Record Drawings of the as-built conditions were established for the soil, sediment and air remedies constructed at the Site, and certified by a Massachusetts Land Surveyor (Meridian Land Services, Inc.). The Record Drawings for these parcels at the Site are included in **Attachment 1**.

The Record Drawings include an elaborate survey network and extensive details on the horizontal and vertical locations of the various protective covers installed for the soil, sediment and air remedies. These details may aid in the future monitoring and management of the remedy and Institutional Controls/Grant of Environmental Restrictions for the Site. The Record Drawings also illustrate the Institutional Controls/Grant of Environmental Restrictions boundaries denoted as Class A, B, C and D Lands.

Where located in Class C lands, existing concrete structures such as concrete pads, stairways, ramps, and loading docks remained in-place as an equivalent cover. These structures are similar to cover types 4, paved equivalent cover, and 5, building equivalent cover. However, because they were not specifically identified in the 100% Design Report, they have not been identified as a specific equivalent cover type herein.

The Record Drawings have plan views and points charts. The plan view shows grid points and intermediate point locations. The points chart shows elevation data collected at each point shown on the plan view. The plan views include contour lines for subgrade and finish grade. A summary of the separate sections of the Record Drawings summary is as follows:

- Sheet A-21: Specific Property Location (Parcel 1);
- Sheet A-22: Boundary Lines, Land Classifications, Easements and As-Built Drainage (Parcel 1);
- Sheet A-23: Record Points, Topography & Limits of Engineer Cover (Parcel 1);
- Sheet A-24: Cover Types and Transitions (Parcel 1);
- Sheet A-25: Details and Transitions (Parcel 1).

## **11.0 CERTIFICATION**

On behalf of the Remedial Trust, Roux Associates certifies that the Aero Realty Trust (Parcel 1) (Tax Map 9-2-3) remedial action was completed in compliance with the approved remedial design and work plans, approved design variances, and the Consent Decree. Any exceptions to the design are noted within this Cover Certification Report. Changes to the cover made following construction completion on June 28, 1996 are not addressed in this report. Approved changes to the cover made since that date are documented in the Administrative Record. The Professional Engineer's certification (below) comprises a declaration of his professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it release any other party of their responsibility to abide by contract documents or applicable codes, standards, regulations, and ordinances. The Professional Engineer's certification is based upon a review of the remedial action documentation. Roux Associates' certification relies upon the accuracy of the as-built survey and record drawings prepared by Meridian and upon the representations made and information provided by the Remedial Trust and its representatives, contractors and consultants involved with the remedial action effort. These contractors and consultants include CWM, Golder, PSI, and Maverick.

Respectfully Submitted,

ROUX ASSOCIATES, INC.



Glen Gordon, P.E.  
Certifying Engineer for Roux Associates, Inc.  
MA License No. 41819



Lawrence McTiernan, LSP  
Project Principal

**Table 1**  
**ISRT Clean Soil Thresholds**  
**in milligrams per kilogram (mg/kg)**

Adapted from Table 02223-1

The following table is presented as the clean soil guideline for the Industri-Plex (I-Plex) Site. Metals which are naturally rock-forming compounds may vary from the guideline values on a case by case basis.

<b>Tests</b>	<b>Proposed Threshold Levels for Clean Soil Used at I-Plex</b>		
<i>Volatile Organic (TCL)</i>	Non-detectable (3)	EPA Method	8240
<i>Acid/Base Neutrals (TCL)</i>	Non-detectable (3)	EPA Method	3550/8270/8270
<i>Pesticides/PCBs (TCL)</i>	Non-detectable	EPA Method	3550/8080
<i>Metals - Target Analyte List (TAL) (4)</i>			
Aluminum	< 100,000 mg/kg	EPA Method	3050/6010
Antimony	< 10 mg/kg	EPA Method	3050/6010
Arsenic	< 25 mg/kg	EPA Method	3050/7060
Barium	< 500 mg/kg	EPA Method	3050/6010
Beryllium	< 1 mg/kg	EPA Method	3050/6010
Cadmium	< 10 mg/kg	EPA Method	3050/6010
Calcium	< 50,000 mg/kg	EPA Method	3050/6010
Chromium	< 23 mg/kg	EPA Method	3050/6010
Cobalt	< 20 mg/kg	EPA Method	3050/6010
Copper	< 50 mg/kg	EPA Method	3050/6010
Iron	< 70,000 mg/kg	EPA Method	3050/7420
Lead	< 87 mg/kg	EPA Method	3050/6010
Magnesium	< 10,000 mg/kg	EPA Method	3050/6010
Manganese	< 1,000 mg/kg	EPA Method	3050/6010
Mercury	< 1 mg/kg	EPA Method	3050/7470
Nickel	< 100 mg/kg	EPA Method	3050/6010
Potassium	< 10,000 mg/kg	EPA Method	3050/6010
Selenium	< 20 mg/kg	EPA Method	3050/7740
Silver	< 20 mg/kg	EPA Method	3050/6010
Sodium	< 4,000 mg/kg	EPA Method	3050/6010
Thallium	< 5 mg/kg	EPA Method	3050/7840
Vanadium	< 150 mg/kg	EPA Method	3050/6010
Zinc	< 200 mg/kg	EPA Method	3050/6010
Cyanide	< 10 mg/kg	EPA Method	9010
TPH (Total Petroleum Hydrocarbon)	< 200 mg/kg	EPA Method	418.1

**Notes:**

- 1) At any time the Trust may revise this list to include testing for additional constituents which may pose a health threat.
- 2) TCL = Target Compound List
- 3) Excludes common laboratory contaminants given in the EPA Region 1 Contract Laboratory Program Data Validation Functional Guidelines.
- 4) TAL Metals by Inductively Coupled Plasma (ICP) and Atomic Absorption (AA) Methods, Test 6010, except run the following constituents by the following methods: (As) 7060, (Pb) 7420, (Se) 7740, (Th) 7840, (Hg) 7470. The 7000's are "furnace and cold vapor AA" methods.

**Table 2**  
**Testing Methods for Soil and Geosynthetics**  
 adapted from Golder's QAPP Table 1-1

7.2 TESTING METHODS	STANDARD	PRECONSTRUCTION FREQUENCY	CONSTRUCTION FREQUENCY
<b>BACKFILL &amp; FILL (Specification Section 02223)</b>			
Backfill and fill tests will be performed by Professional Service Industries, Inc.			
<b>Compacted Fill</b>			
Gradation Test	ASTM D422	1/Source	1/5,000 CY
Plasticity Index	ASTM D4318	1/Source	1/5,000 CY
Standard Compaction	ASTM D698	1/Source	1/5,000 CY
Modified Compaction	ASTM D1557	1/Source	1/5,000 CY
Field Moisture/Density	ASTM D2922	Not Required	9/Lift or 1/100 LF
In-Place Methods	ASTM D1556 or D2167	Not Required	1/Day
<b>Sand Bedding</b>			
Gradation Test	ASTM D422	1/Source	1/5,000 CY
Carbonate Content	ASTM D3042	1/Source	Not Required
<b>SUBANGULAR STONE (Specification Section 02233)</b>			
Subangular stone tests will be performed by Professional Service Industries, Inc.			
<b>AASHTO No. 2, 57, 67</b>			
Gradation Test	ASTM D422	1/Source	1/1,000 CY
Carbonate Content	ASTM D3042	1/Source	Not Required
<b>AASHTO No. 8</b>			
Gradation Test	ASTM D422	1/Source	1/1,000 CY
Carbonate Content	ASTM D3042	1/Source	Not Required
Permeability Test	USCO EM1110-2-19C6	1/Source	Not Required
<b>IMPERMEABLE &amp; PERMEABLE COVER FILL (Specification Section 02242)</b>			
Impermeable and permeable cover fill test will be performed by Professional Service Industries, Inc. unless designated with **			
<b>Cover Soil (Select Cover Fill)</b>			
Gradation Test	ASTM D422	1/Source	1/2,000 CY
Plasticity Index	ASTM D4318	1/Source	1/5,000 CY
Direct Shear Test**	Section 02242	1/Source	1/2,000 CY
** Test to be performed by Golder Associates Ltd.			
<b>Top Soil</b>			
Gradation Test	ASTM D422	1/Source	1/2,000 CY
pH Test	ASTM D4972	1/Source	Not Required
Baker Soil Fertility Test**	Section 02242	1/Source	1/2,000 CY
** Test to be performed by Land Management Decisions, Inc.			
<b>WETLANDS SEDIMENT REMEDIATION COVER SOILS (Specification Section 02243)</b>			
Wetland sediment cover soil tests will be performed by Professional Service Industries, Inc. unless designated with **			
<b>Wetland Gravel (Road Structural Fill: Section 02223)</b>			
Gradation Test	ASTM D422	1/Source	1/5,000 CY
<b>Wetland Topsoil (Topsoil: Section 02937)</b>			
Gradation Test	ASTM D422	1/Source	1/5,000 CY
pH Test	ASTM D4972	1/Source	1/5,000 CY
Organic Matter Content	Section 02937, Tol 2	1/Source	1/5,000 CY
Soil Fertility Test**	Section 02937, Tol 2	1/Source	1/5,000 CY
** Test to be performed by Land Management Decisions, Inc.			
<b>STREAM SEDIMENT REMEDIATION COVER (Specification Section 02244)</b>			
Stream sediment cover tests will be performed by Professional Service Industries, Inc.			
<b>Gravel/Cobble (Section 02271)</b>			
Abrasion Test	ASTM G536	Not Required	Not Required
Freeze Thaw Test	AASHTO T103	Not Required	Not Required
Specific Gravity	ASTM C127	Not Required	Not Required
Gradation Test-Aggregate	ASTM C136	1/Source	Not Required

Table 2  
Testing Methods for Soil and Geosynthetics  
adapted from Golder's QAPP Table 1-1

7.2 TESTING METHODS	STANDARD	PRECONSTRUCTION FREQUENCY	CONSTRUCTION FREQUENCY
<b>STONE RIPRAP</b> (Specification Section 02271) Stone riprap tests will be performed by Professional Service Industries, Inc.			
<b>Gravel/Cobble</b> ( $d_{50}$ =3 inches) (Section 02271)			
Abrasion Test	ASTM C535	Not Required	Not Required
Freeze Thaw Test	AASHTO T103	Not Required	Not Required
Specific Gravity	ASTM C127	Not Required	Not Required
Gradation Test-Aggregate	ASTM C136	1/Source	Not Required
<b>Streambed Sediment Filter and Gabion Rock</b> ( $d_{50}$ =6 inches)			
Abrasion Test	ASTM C535	Not Required	Not Required
Freeze Thaw Test	AASHTO T103	Not Required	Not Required
Specific Gravity	ASTM C127	Not Required	Not Required
Gradation Test-Aggregate	ASTM C136	1/Source	Not Required
<b>SUBBASE AND PAVEMENT</b> (Specification Section 02575) Subbase and Pavement tests will be performed by Professional Service Industries, Inc.			
<b>Graded Aggregate Base Course</b>			
Gradation Test	AASHTO T:11 & T27	1/Source	1/5,000 SY or 1 Day
Compacted Density	AASHTO T180 Method D	1/Source	1/5,000 SY or 1 Day
Abrasion Test*	AASHTO T96	1/Source	1/5,000 SY or 1 Day
Freeze Thaw Test*	AASHTO T103	1/Source	1/5,000 SY or 1 Day
(* as required by MDPW specifications)			
<b>Binding and Wearing Asphalt Courses</b>			
Extraction Test (Plant)	AASHTO T158	Not Required	1/500 Tons
Gradation Test (Plant)	AASHTO T11 or T27	Not Required	1/500 Tons
Density/Stability (Plant)	AASHTO T205, T245, T246, T247	Not Required	1/500 Tons
Max. Theoretical Density	ASTM D2041	Not Required	1/500 Tons
Max. Density - Marshall	AASHTO T209 or T245	Not Required	2/500 Tons
In place Density	ASTM D2950	Not Required	1/100 LF
In place Density (Core)	AASHTO T156	Not Required	1 Core/500 SY
In place Thickness (Core)	AASHTO T196	Not Required	1 Core/500 SY
In place Smoothness Test	Section 02575	Not Required	1/100 LF
<b>GEOTEXTILE</b> (Specification Section 02585) Geotextile tests will be performed by Golder Construction Services, Inc.			
<b>Non-woven, 6, 10, and 16 ounces/square yard</b>			
Mass Per Unit Area	ASTM D5261	1/100,000 SF	Not Required
Grab Strength	ASTM D4632	1/100,000 SF	Not Required
Trapezoidal Tear Strength	ASTM D4583	1/100,000 SF	Not Required
Burst Strength	ASTM D3786	1/100,000 SF	Not Required
Puncture Strength	ASTM D4833	1/100,000 SF	Not Required
Thickness	ASTM D5199	1/100,000 SF	Not Required
Apparent Opening Size	ASTM D4751	1/100,000 SF	Not Required
<b>GEOMEMBRANE</b> (Specification Section 02597) Geomembrane tests will be performed by Golder Construction Services, Inc.			
<b>Textured HDPE</b>			
Thickness	ASTM D5199	1/100,000 SF	Not Required
Density	ASTM D1505	1/100,000 SF	Not Required
Minimum Tensile Properties:	ASTM D638	1/100,000 SF	Not Required
Tensile Strength, Yield			
Tensile Strength, Break			
Elongation at Yield			
Elongation at Break			
Tear Resistance	ASTM D1004 Die C	Not Required	Not Required
Low Temperature Brittleness	ASTM D746 Proc. B	Not Required	Not Required
Dimensional Stability	ASTM D1204	1/100,000 SF	Not Required
Environmental Stress Crack	ASTM D1693	Not Required	Not Required
Puncture Resistance	FTMS 101C Method 2085	Not Required	Not Required
Carbon Black Content	ASTM D1603	1/100,000 SF	Not Required
Carbon Black Dispersion	ASTM D3015	1/100,000 SF	Not Required
Shear Test	ASTM D4437 NSF Mod.	Not Required	1/500 LF
Peel Adhesion (Hot Wedge Fusion Weld)	ASTM D4437 NSF Mod.	Not Required	1/500 LF
Peel Adhesion (Flat Extrusion Weld)	ASTM D4437 NSF Mod.	Not Required	1/500 LF

**Table 2**  
**Testing Methods for Soil and Geosynthetics**  
 adapted from Golder's QAPP Table 1-1

7.2 TESTING METHODS	STANDARD	PRECONSTRUCTION FREQUENCY	CONSTRUCTION FREQUENCY
<b>GEOCOMPOSITE (Specification Section 02598)</b>			
Geocomposite tests will be performed by Golder Construction Services, Inc.			
Geocomposite (TEX-NET TN3002CN)			
Geocomposite Transmissivity @ 500 psf; Gradient = 1	ASTM D4716	1/100,000 SF	Not Required
Geocomposite Transmissivity @ 20,000 psf; Gradient = 1	ASTM D4716	1/100,000 SF	Not Required
Tensile Strength - Net only (prior to lamination)	ASTM D5035	Not Required	Not Required
Tensile Strength - Geotextile only (prior to lamination)	ASTM D4632	Not Required	Not Required
Geocomposite Peel Strength	ASTM D413	1/100,000 SF	Not Required
Density - Net only (prior to lamination)	ASTM D1505	Not Required	Not Required
Carbon Black Content - Net only (prior to lamination)	ASTM D1603	Not Required	Not Required
Thickness - Net only (prior to lamination)	ASTM D5199	Not Required	Not Required
Thickness - Geotextile only (prior to lamination)	ASTM D5199	Not Required	Not Required
Geotextile Mass/Unit Area	ASTM D5261	1/100,000 SF	Not Required
Apparent Opening Size - Geotextile only (prior to lamination)	ASTM D4751	Not Required	Not Required
<b>GEOGRID (Specification Section 02599)</b>			
Geocomposite tests will be performed by Golder Construction Services, Inc.			
Geocomposite (TEX-NET TN3002CN)			
Open Area	COE CW 02215-89	1/100,000 SF	Not Required
Thickness:	ASTM D5199	1/100,000 SF	Not Required
Ribs			
Junctions			
Long Term Design Load (MD)	ASTM D5232	Not Required	Not Required
Flexural Rigidity	ASTM D4390	1/100,000 SF	Not Required
Geogrid Rib Tensile Strength	GRI GG1	1/100,000 SF	Not Required
Junction Node Strength	GRI GG2	1/100,000 SF	Not Required
Strength			
Efficiency			
Density	ASTM D1248	1/100,000 SF	Not Required
Carbon Black Content	ASTM D1603	1/100,000 SF	Not Required
<b>WETLAND MITIGATION (Specification Section 02937)</b>			
Wetland sediment cover soil tests will be performed by Professional Service Industries, Inc. unless designated with **			
Wetland Cover Soil:			
Gracation Test	ASTM D422	1/Source	1/Acre/Lift
Plasticity Index	ASTM D4318	1/Source	1/Acre/Lift
Standard Compaction	ASTM D698	1/Source	1/Source
Flexible Wall Firm Test **	ASTM D5084	1/Source	1/Acre/Lift
Field Moisture/Density	ASTM D2922	Not Required	1/10,000 SF
** Test will be performed by Golder Associates, Inc.			
<b>CAST IN PLACE CONCRETE (Specification Section 03300)</b>			
Cast in place concrete tests will be performed by Professional Service Industries, Inc.			
Compression Test Cylinders	ASTM C39	Not Required	4/Class/100 CY to
Making of Test Cylinders	ASTM C31	Not Required	4/Class/5,000 SF of
Testing of Aggregate	ASTM C33	Not Required	Concrete Place As

**Notes:**

QAPP = Quality Assurance Project Plan  
 ASTM = American Society for Testing and Materials  
 CY = cubic yard  
 LF = linear feet  
 AASHTO = American Association of State Highway and Transportation Officials  
 Tbl = Table  
 MDPW = Massachusetts Department of Public Works  
 SF = square foot  
 PSF = pounds per square foot

**Table 3**  
**Summary of Abbreviations**  
**Property-Specific Cover Certification Reports**  
**Industri-Plex Site**

**Mapping Location:**

@	=	at
AAD	=	Atlantic Avenue Drainway
AL	=	Above Geotextile
AP	=	Above Pipe
BECO	=	Boston Edison Company right of way
BLDG	=	Building
BRD	=	Bradford
BSG	=	Below Subgrade
BTOB	=	Below Top of berm
CO	=	Company
COMM	=	Commerce (Way Extension)
DET	=	Detention Basin
E	=	East
EEOS	=	East End of Seam
ECHP	=	East Central Hide Pile
EXT	=	Extension
HUB	=	Hubbardston
MID	=	Middle
N	=	North
PLYM	=	Plymouth
PRES	=	Presidential (Way Extension)
REV	=	Revere
S	=	South
SEOS	=	South End of Seam
SG	=	Subgrade
STK	=	Stock (yard)
UGT	=	Under Ground Tank
UTIL	=	Utility
W	=	West
w/	=	with
WEOS	=	West End of Seam
WIL	=	Wilmington
WOB	=	Woburn

**Cover Materials:**

GB	=	Gravel Borrow (Subbase)
LL	=	Liquid Limit
MOIST	=	Optimum Moisture Content
NP	=	Non-Plastic
PCF	=	Pounds per Cubic Foot
PL	=	Plastic Limit
PSI	=	Pounds per Square Inch
PROC	=	Processed
SCRND	=	Screened
SD	=	Sand
SS	=	Site Soil
TRI	=	(Bardon) Trimount

**REFERENCE PLANS:**

1. "REGIONAL TRANSPORTATION CENTER - WOBURN, MASSACHUSETTS" ALTERNATE COVER DESIGN - ISSUED FOR EPA/DEP APPROVAL, DATE ISSUED: MAY 16, 1998. LATEST ISSUE: JULY 28, 1998. BY HANSE HANSEN BROUWER, INC., WILMINGTON, MA
2. "INDUSTRIAL-PLEX SITE - WOBURN, MASSACHUSETTS" - 100% DESIGN REPORT, PART 1 - GENERAL NOTES FOR SOIL, SEDIMENTS AND AIR - RELEASE 2 OF 2, PREPARED BY GOLDBER ASSOCIATES, WY. LAUREL, MD., APRIL 25, 1992.
3. "SUBDIVISION PLAN OF LAND IN WOBURN - PERFORMED BY JOSEPH W. MORE - JUNE 1, 1981" SCALE: 1"=40'. COPY OF TITLE NO. 18449 BOOK 862 PAGE 59, RECORDED AS PLAN NO. 0124 ON MAY 24, 1909 AT SOUTH REISTRY DISTRICT OF MIDDLESEX COUNTY.
4. "TRUCK YARD OF LAND OWNER SUBDIVISION - IN WOBURN, MA" PREPARED FOR THE NORTHEAST REGIONAL TRANSPORTATION CENTER BY MASSACHUSETTS PORT AUTHORITY, DATED OCTOBER 21, 1994, SHEETS 1-8. LOC 7312.
5. "PLAN OF RELOCATION OF A PORTION OF NEW BOSTON STREET, WOBURN, AS ORDERED BY THE COUNTY COMMISSIONERS, 1976, SCALE 1"=40", SHEETS 4 & 5 OF 5. DOCUMENT NO. 378282.

**INDUSTRI-PLEX SITE  
OU-1 COVER CERTIFICATION REPORT  
LOCUS OF TAX MAP LOT 9-2-3 (AKA LOT IC-3)  
N/F AERO REALTY TRUST (PARCEL 1)  
RECORD DRAWINGS  
WOBURN, MASSACHUSETTS  
AUGUST 8, 2000**

**NOTES:**

1. THE OWNER OF RECORD FOR LOT 9-2-3 IS (NOW OR FORMERLY) AERO REALTY TRUST, HANSE HANSEN BROUWER, 222 NEW BOSTON STREET WOBURN, MASSACHUSETTS 01897. DEED REFERENCE TO PARCEL IS TRANSFER CERTIFICATE #1849 BOOK 862 PAGE 59, DATED NOV. 5, 1980 AND FILED IN THE LAND REGISTRATION OFFICE OF THE SOUTH REISTRY DISTRICT OF MIDDLESEX COUNTY.
2. ELEVATION RECORDS TABULATED ON THESE DRAWINGS WERE COMPILED FROM FIELD OBSERVATIONS COLLECTED BY ELECTRONIC TOTAL STATION AND DATA COLLECTION TECHNIQUES. ELEVATIONS ARE SHOWN TO ONE HUNDRETH OF A FOOT FOR SURETY OF TABULATION AND TO PRECLUDE ROUNDING ERRORS. IT IS THE INTENTION OF THE SURVEY TO REFLECT ELEVATIONS ONLY TO THE PRECISION REQUIRED BY THE PROJECT SPECIFICATIONS. ADDITIONAL PRECISION IS NOT IMPLIED BY THE TABULATION. COVER DEPTHS ARE GIVEN IN DECIMAL INCHES AND CALCULATED BY MULTIPLYING THE ELEVATION DIFFERENCES GIVEN IN DECIMAL FEET BY 12.
3. THE INFORMATION CONTAINED HEREIN IS THE RESULT OF AN ON-SITE FIELD SURVEY PERFORMED BY MERIDIAN LAND SERVICES, INC. DURING THE PERIOD OF SEPTEMBER, 1993 THROUGH JANUARY, 2000.
4. IN GENERAL, PLAN GRAPHS SUCH AS BUILDINGS, WALLWAYS, CONCRETE PADS, EDGES OF PAVEMENT, CURBS, DRAINAGE FEATURES, ETC. WERE LOCATED FROM A FIELD SURVEY BY THIS OFFICE. ADDITIONAL GRAPHIC REPRESENTATIONS NOT FIELD LOCATED, SUCH AS NON-PERMANE EDGES OF PAVEMENT, FINISH LINES, WATER COURSES AND FINISHING DETAIL WERE TAKEN FROM REFERENCE PLANS 1 AND 2. THE LATTER MENTIONED DETAIL WILL BE REFERENCED ON THE PLAN WITHIN THE APPROPRIATE AREAS.
5. THE CONSTRUCTION SURVEY CONTROL NETWORK USED BY MERIDIAN LAND SERVICES, INC. WAS DERIVED ENTIRELY FROM THE EXISTING SITE CONTROL POINTS PROVIDED BY GOLDBER ASSOCIATES AND THIS, INC., AS SHOWN ON REFERENCE PLAN 1, SHEET C-3 AND REFERENCE PLAN 2, SHEETS 11-14 THRU 11-10.
6. THE COORDINATES AND ELEVATIONS OF THE EXISTING SITE CONTROL POINTS ARE BASED ON MASSACHUSETTS GRID COORDINATE SYSTEM/NAVD-83 (GOUTH AMERICAN DATUM OF 1927) AND NAVD-83 (THE NATIONAL GEODETIC VERTICAL DATUM OF 1988), AS STATED IN THE REFERENCE PLAN 2, NOTE 2. & SUBSEQUENTLY VERIFIED BY THIS OFFICE VIA GPS (GLOBAL POSITIONING) IN 2001.
7. A BOUNDARY "IN" SURVEY WAS PERFORMED BY MERIDIAN LAND SERVICES, INC. PROPERTY LINES SHOWN HEREON WERE COMPUTED AND MATHEMATICALLY COMPUTED FROM LAND COURT CASE NUMBER 7312. THESE COMPUTED PLANS WERE "BEST FIT" TO THE PROJECT COORDINATE SYSTEM USING NUMEROUS FIELD LOCATED MONUMENTS. SEE REFERENCE PLAN #3 FOR BOUNDARY LINES PERTAINING TO THIS PARCEL.
8. LAND CLASSIFICATION LINES SHOWN HEREON WERE TAKEN FROM REFERENCE PLAN 2.
9. ADDITIONAL SITE-WIDE INFORMATION CAN BE FOUND IN THE MASTER COVER CERTIFICATION REPORT, INCLUDING MASTER RECORD DRAWINGS.

**SURVEY CONTROL NETWORK POINTS**

POINT #	NORTHING (FEET)	EASTING (FEET)	ELEVATION (FEET)	DESC.
1	806282.48	808172.11	82.00	PRIVACY
2	806282.48	808172.11	82.00	PRIVACY
3	806282.48	808172.11	82.00	PRIVACY
4	806282.48	808172.11	82.00	PRIVACY
5	806282.48	808172.11	82.00	PRIVACY
6	806282.48	808172.11	82.00	PRIVACY
7	806282.48	808172.11	82.00	PRIVACY
8	806282.48	808172.11	82.00	PRIVACY
9	806282.48	808172.11	82.00	PRIVACY
10	806282.48	808172.11	82.00	PRIVACY
11	806282.48	808172.11	82.00	PRIVACY
12	806282.48	808172.11	82.00	PRIVACY
13	806282.48	808172.11	82.00	PRIVACY
14	806282.48	808172.11	82.00	PRIVACY
15	806282.48	808172.11	82.00	PRIVACY
16	806282.48	808172.11	82.00	PRIVACY
17	806282.48	808172.11	82.00	PRIVACY
18	806282.48	808172.11	82.00	PRIVACY
19	806282.48	808172.11	82.00	PRIVACY
20	806282.48	808172.11	82.00	PRIVACY
21	806282.48	808172.11	82.00	PRIVACY
22	806282.48	808172.11	82.00	PRIVACY
23	806282.48	808172.11	82.00	PRIVACY
24	806282.48	808172.11	82.00	PRIVACY
25	806282.48	808172.11	82.00	PRIVACY
26	806282.48	808172.11	82.00	PRIVACY
27	806282.48	808172.11	82.00	PRIVACY
28	806282.48	808172.11	82.00	PRIVACY
29	806282.48	808172.11	82.00	PRIVACY
30	806282.48	808172.11	82.00	PRIVACY
31	806282.48	808172.11	82.00	PRIVACY
32	806282.48	808172.11	82.00	PRIVACY
33	806282.48	808172.11	82.00	PRIVACY
34	806282.48	808172.11	82.00	PRIVACY
35	806282.48	808172.11	82.00	PRIVACY
36	806282.48	808172.11	82.00	PRIVACY
37	806282.48	808172.11	82.00	PRIVACY
38	806282.48	808172.11	82.00	PRIVACY
39	806282.48	808172.11	82.00	PRIVACY
40	806282.48	808172.11	82.00	PRIVACY
41	806282.48	808172.11	82.00	PRIVACY
42	806282.48	808172.11	82.00	PRIVACY
43	806282.48	808172.11	82.00	PRIVACY
44	806282.48	808172.11	82.00	PRIVACY
45	806282.48	808172.11	82.00	PRIVACY
46	806282.48	808172.11	82.00	PRIVACY
47	806282.48	808172.11	82.00	PRIVACY
48	806282.48	808172.11	82.00	PRIVACY
49	806282.48	808172.11	82.00	PRIVACY
50	806282.48	808172.11	82.00	PRIVACY
51	806282.48	808172.11	82.00	PRIVACY
52	806282.48	808172.11	82.00	PRIVACY
53	806282.48	808172.11	82.00	PRIVACY
54	806282.48	808172.11	82.00	PRIVACY
55	806282.48	808172.11	82.00	PRIVACY
56	806282.48	808172.11	82.00	PRIVACY
57	806282.48	808172.11	82.00	PRIVACY
58	806282.48	808172.11	82.00	PRIVACY
59	806282.48	808172.11	82.00	PRIVACY
60	806282.48	808172.11	82.00	PRIVACY
61	806282.48	808172.11	82.00	PRIVACY
62	806282.48	808172.11	82.00	PRIVACY
63	806282.48	808172.11	82.00	PRIVACY
64	806282.48	808172.11	82.00	PRIVACY
65	806282.48	808172.11	82.00	PRIVACY
66	806282.48	808172.11	82.00	PRIVACY
67	806282.48	808172.11	82.00	PRIVACY
68	806282.48	808172.11	82.00	PRIVACY
69	806282.48	808172.11	82.00	PRIVACY
70	806282.48	808172.11	82.00	PRIVACY
71	806282.48	808172.11	82.00	PRIVACY
72	806282.48	808172.11	82.00	PRIVACY
73	806282.48	808172.11	82.00	PRIVACY
74	806282.48	808172.11	82.00	PRIVACY
75	806282.48	808172.11	82.00	PRIVACY
76	806282.48	808172.11	82.00	PRIVACY
77	806282.48	808172.11	82.00	PRIVACY
78	806282.48	808172.11	82.00	PRIVACY
79	806282.48	808172.11	82.00	PRIVACY
80	806282.48	808172.11	82.00	PRIVACY
81	806282.48	808172.11	82.00	PRIVACY
82	806282.48	808172.11	82.00	PRIVACY
83	806282.48	808172.11	82.00	PRIVACY
84	806282.48	808172.11	82.00	PRIVACY
85	806282.48	808172.11	82.00	PRIVACY
86	806282.48	808172.11	82.00	PRIVACY
87	806282.48	808172.11	82.00	PRIVACY
88	806282.48	808172.11	82.00	PRIVACY
89	806282.48	808172.11	82.00	PRIVACY
90	806282.48	808172.11	82.00	PRIVACY
91	806282.48	808172.11	82.00	PRIVACY
92	806282.48	808172.11	82.00	PRIVACY
93	806282.48	808172.11	82.00	PRIVACY
94	806282.48	808172.11	82.00	PRIVACY
95	806282.48	808172.11	82.00	PRIVACY
96	806282.48	808172.11	82.00	PRIVACY
97	806282.48	808172.11	82.00	PRIVACY
98	806282.48	808172.11	82.00	PRIVACY
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100	806282.48	808172.11	82.00	PRIVACY

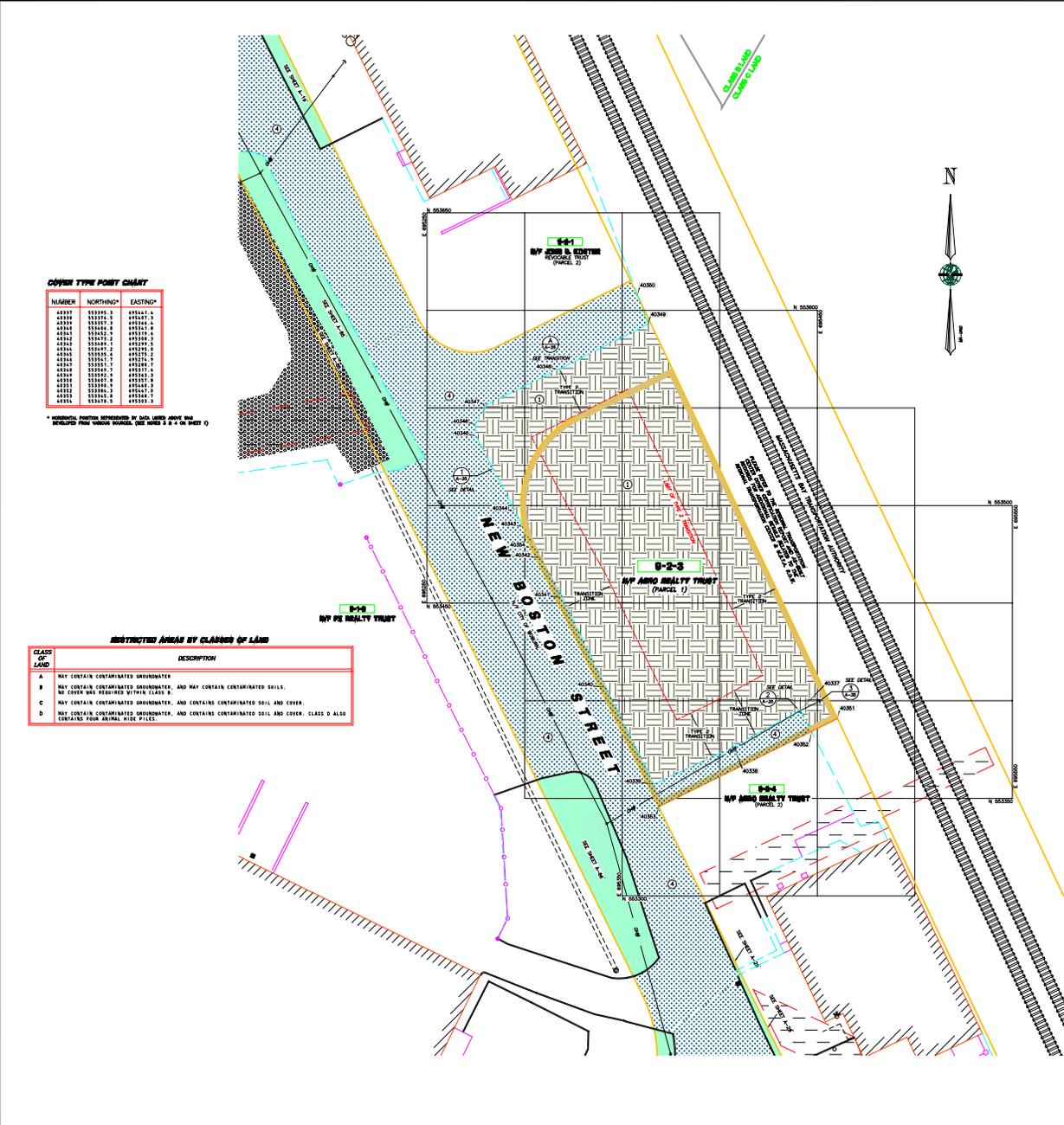
**SURVEY CONTROL NETWORK POINTS**

POINT #	NORTHING (FEET)	EASTING (FEET)	ELEVATION (FEET)	DESC.
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102	806282.48	808172.11	82.00	PRIVACY
103	806282.48	808172.11	82.00	PRIVACY
104	806282.48	808172.11	82.00	PRIVACY
105	806282.48	808172.11	82.00	PRIVACY
106	806282.48	808172.11	82.00	PRIVACY
107	806282.48	808172.11	82.00	PRIVACY
108	806282.48	808172.11	82.00	PRIVACY
109	806282.48	808172.11	82.00	PRIVACY
110	806282.48	808172.11	82.00	PRIVACY
111	806282.48	808172.11	82.00	PRIVACY
112	806282.48	808172.11	82.00	PRIVACY
113	806282.48	808172.11	82.00	PRIVACY
114	806282.48	808172.11	82.00	PRIVACY
115	806282.48	808172.11	82.00	PRIVACY
116	806282.48	808172.11	82.00	PRIVACY
117	806282.48	808172.11	82.00	PRIVACY
118	806282.48	808172.11	82.00	PRIVACY
119	806282.48	808172.11	82.00	PRIVACY
120	806282.48	808172.11	82.00	PRIVACY
121	806282.48	808172.11	82.00	PRIVACY
122	806282.48	808172.11	82.00	PRIVACY
123	806282.48	808172.11	82.00	PRIVACY
124	806282.48	808172.11	82.00	PRIVACY
125	806282.48	808172.11	82.00	PRIVACY
126	806282.48	808172.11	82.00	PRIVACY
127	806282.48	808172.11	82.00	PRIVACY
128	806282.48	808172.11	82.00	PRIVACY
129	806282.48	808172.11	82.00	PRIVACY
130	806282.48	808172.11	82.00	PRIVACY
131	806282.48	808172.11	82.00	PRIVACY
132	806282.48	808172.11	82.00	PRIVACY
133	806282.48	808172.11	82.00	PRIVACY
134	806282.48	808172.11	82.00	PRIVACY
135	806282.48	808172.11	82.00	PRIVACY
136	806282.48	808172.11	82.00	PRIVACY
137	806282.48	808172.11	82.00	PRIVACY
138	806282.48	808172.11	82.00	PRIVACY
139	806282.48	808172.11	82.00	PRIVACY
140	806282.48	808172.11	82.00	PRIVACY
141	806282.48	808172.11	82.00	PRIVACY
142	806282.48	808172.11	82.00	PRIVACY
143	806282.48	808172.11	82.00	PRIVACY
144	806282.48	808172.11	82.00	PRIVACY
145	806282.48	808172.11	82.00	PRIVACY
146	806282.48	808172.11	82.00	PRIVACY
147	806282.48	808172.11	82.00	PRIVACY
148	806282.48	808172.11	82.00	PRIVACY
149	806282.48	808172.11	82.00	PRIVACY
150	806282.48	808172.11	82.00	PRIVACY
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153	806282.48	808172.11	82.00	PRIVACY
154	806282.48	808172.11	82.00	PRIVACY
155	806282.48	808172.11	82.00	PRIVACY
156	806282.48	808172.11	82.00	PRIVACY
157	806282.48	808172.11	82.00	PRIVACY
158	806282.48	808172.11	82.00	PRIVACY
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160	806282.48	808172.11	82.00	PRIVACY
161	806282.48	808172.11	82.00	PRIVACY
162	806282.48	808172.11	82.00	PRIVACY
163	806282.48	808172.11	82.00	PRIVACY
164	806282.48	808172.11	82.00	PRIVACY
165	806282.48	808172.11	82.00	PRIVACY
166	806282.48	808172.11	82.00	PRIVACY
167	806282.48	808172.11	82.00	PRIVACY
168	806282.48	808172.11	82.00	PRIVACY
169	806282.48	808172.11	82.00	PRIVACY
170	806282.48	808172.11	82.00	PRIVACY
171	806282.48	808172.11	82.00	PRIVACY
172	806282.48	808172.11	82.00	PRIVACY
173	806282.48	808172.11	82.00	PRIVACY
174	806282.48	808172.11	82.00	PRIVACY
175	806282.48	808172.11	82.00	PRIVACY
176	806282.48	808172.11	82.00	PRIVACY
177	806282.48	808172.11	82.00	PRIVACY
178	806282.48	808172.11	82.00	PRIVACY
179	806282.48	808172.11	82.00	PRIVACY
180	806282.48	808172.11	82.00	PRIVACY
181				





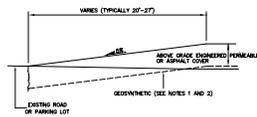
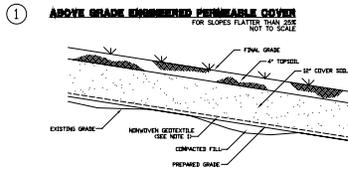
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 FILE: 29000114.dwg SHEET: 4 OF 5



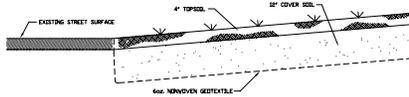
**COVER TYPE POINT COUNT**

NUMBER	NORTHING*	EASTING*
43371	55195.2	49544.4
43372	55195.1	49544.2
43373	55195.0	49544.0
43374	55194.9	49543.8
43375	55194.8	49543.6
43376	55194.7	49543.4
43377	55194.6	49543.2
43378	55194.5	49543.0
43379	55194.4	49542.8
43380	55194.3	49542.6
43381	55194.2	49542.4
43382	55194.1	49542.2
43383	55194.0	49542.0
43384	55193.9	49541.8
43385	55193.8	49541.6
43386	55193.7	49541.4
43387	55193.6	49541.2
43388	55193.5	49541.0
43389	55193.4	49540.8
43390	55193.3	49540.6
43391	55193.2	49540.4
43392	55193.1	49540.2
43393	55193.0	49540.0
43394	55192.9	49539.8
43395	55192.8	49539.6
43396	55192.7	49539.4
43397	55192.6	49539.2
43398	55192.5	49539.0
43399	55192.4	49538.8
43400	55192.3	49538.6
43401	55192.2	49538.4
43402	55192.1	49538.2
43403	55192.0	49538.0
43404	55191.9	49537.8
43405	55191.8	49537.6
43406	55191.7	49537.4
43407	55191.6	49537.2
43408	55191.5	49537.0
43409	55191.4	49536.8
43410	55191.3	49536.6
43411	55191.2	49536.4
43412	55191.1	49536.2
43413	55191.0	49536.0
43414	55190.9	49535.8
43415	55190.8	49535.6
43416	55190.7	49535.4
43417	55190.6	49535.2
43418	55190.5	49535.0
43419	55190.4	49534.8
43420	55190.3	49534.6
43421	55190.2	49534.4
43422	55190.1	49534.2
43423	55190.0	49534.0
43424	55189.9	49533.8
43425	55189.8	49533.6
43426	55189.7	49533.4
43427	55189.6	49533.2
43428	55189.5	49533.0
43429	55189.4	49532.8
43430	55189.3	49532.6
43431	55189.2	49532.4
43432	55189.1	49532.2
43433	55189.0	49532.0
43434	55188.9	49531.8
43435	55188.8	49531.6
43436	55188.7	49531.4
43437	55188.6	49531.2
43438	55188.5	49531.0
43439	55188.4	49530.8
43440	55188.3	49530.6
43441	55188.2	49530.4
43442	55188.1	49530.2
43443	55188.0	49530.0
43444	55187.9	49529.8
43445	55187.8	49529.6
43446	55187.7	49529.4
43447	55187.6	49529.2
43448	55187.5	49529.0
43449	55187.4	49528.8
43450	55187.3	49528.6
43451	55187.2	49528.4
43452	55187.1	49528.2
43453	55187.0	49528.0
43454	55186.9	49527.8
43455	55186.8	49527.6
43456	55186.7	49527.4
43457	55186.6	49527.2
43458	55186.5	49527.0
43459	55186.4	49526.8
43460	55186.3	49526.6
43461	55186.2	49526.4
43462	55186.1	49526.2
43463	55186.0	49526.0
43464	55185.9	49525.8
43465	55185.8	49525.6
43466	55185.7	49525.4
43467	55185.6	49525.2
43468	55185.5	49525.0
43469	55185.4	49524.8
43470	55185.3	49524.6
43471	55185.2	49524.4
43472	55185.1	49524.2
43473	55185.0	49524.0
43474	55184.9	49523.8
43475	55184.8	49523.6
43476	55184.7	49523.4
43477	55184.6	49523.2
43478	55184.5	49523.0
43479	55184.4	49522.8
43480	55184.3	49522.6
43481	55184.2	49522.4
43482	55184.1	49522.2
43483	55184.0	49522.0
43484	55183.9	49521.8
43485	55183.8	49521.6
43486	55183.7	49521.4
43487	55183.6	49521.2
43488	55183.5	49521.0
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43490	55183.3	49520.6
43491	55183.2	49520.4
43492	55183.1	49520.2
43493	55183.0	49520.0
43494	55182.9	49519.8
43495	55182.8	49519.6
43496	55182.7	49519.4
43497	55182.6	49519.2
43498	55182.5	49519.0
43499	55182.4	49518.8
43500	55182.3	49518.6
43501	55182.2	49518.4
43502	55182.1	49518.2
43503	55182.0	49518.0
43504	55181.9	49517.8
43505	55181.8	49517.6
43506	55181.7	49517.4
43507	55181.6	49517.2
43508	55181.5	49517.0
43509	55181.4	49516.8
43510	55181.3	49516.6
43511	55181.2	49516.4
43512	55181.1	49516.2
43513	55181.0	49516.0
43514	55180.9	49515.8
43515	55180.8	49515.6
43516	55180.7	49515.4
43517	55180.6	49515.2
43518	55180.5	49515.0
43519	55180.4	49514.8
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43522	55180.1	49514.2
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43525	55179.8	49513.6
43526	55179.7	49513.4
43527	55179.6	49513.2
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43530	55179.3	49512.6
43531	55179.2	49512.4
43532	55179.1	49512.2
43533	55179.0	49512.0
43534	55178.9	49511.8
43535	55178.8	49511.6
43536	55178.7	49511.4
43537	55178.6	49511.2
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43539	55178.4	49510.8
43540	55178.3	49510.6
43541	55178.2	49510.4
43542	55178.1	49510.2
43543	55178.0	49510.0
43544	55177.9	49509.8
43545	55177.8	49509.6
43546	55177.7	49509.4
43547	55177.6	49509.2
43548	55177.5	49509.0
43549	55177.4	49508.8
43550	55177.3	49508.6
43551	55177.2	49508.4
43552	55177.1	49508.2
43553	55177.0	49508.0
43554	55176.9	49507.8
43555	55176.8	49507.6
43556	55176.7	49507.4
43557	55176.6	49507.2
43558	55176.5	49507.0
43559	55176.4	49506.8
43560	55176.3	49506.6
43561	55176.2	49506.4
43562	55176.1	49506.2
43563	55176.0	49506.0
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43565	55175.8	49505.6
43566	55175.7	49505.4
43567	55175.6	49505.2
43568	55175.5	49505.0
43569	55175.4	49504.8
43570	55175.3	49504.6
43571	55175.2	49504.4
43572	55175.1	49504.2
43573	55175.0	49504.0
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43575	55174.8	49503.6
43576	55174.7	49503.4
43577	55174.6	49503.2
43578	55174.5	49503.0
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43580	55174.3	49502.6
43581	55174.2	49502.4
43582	55174.1	49502.2
43583	55174.0	49502.0
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43585	55173.8	49501.6
43586	55173.7	49501.4
43587	55173.6	49501.2
43588	55173.5	49501.0
43589	55173.4	49500.8
43590	55173.3	49500.6
43591	55173.2	49500.4
43592	55173.1	49500.2
43593	55173.0	49500.0
43594	55172.9	49499.8
43595	55172.8	49499.6
43596	55172.7	49499.4
43597	55172.6	49499.2
43598	55172.5	49499.0
43599	55172.4	49498.8
43600	55172.3	49498.6
43601	55172.2	49498.4
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43603	55172.0	49498.0
43604	55171.9	49497.8
43605	55171.8	49497.6
43606	55171.7	49497.4
43607	55171.6	49497.2
43608	55171.5	49497.0
43609	55171.4	49496.8
43610	55171.3	49496.6
43611	55171.2	49496.4
43612	55171.1	49496.2
43613	55171.0	49496.0
43614	55170.9	49495.8
43615	55170.8	49495.6
43616	55170.7	49495.4
43617	55170.6	49495.2
43618	55170.5	49495.0
43619	55170.4	49494.8
43620	55170.3	49494.6
43621	55170.2	49494.4
43622	55170.1	49494.2
43623	55170.0	49494.0
43624	55169.9	49493.8
43625	55169.8	49493.6
43626	55169.7	49493.4
43627	55169.6	49493.2
43628	55169.5	49493.0
43629	55169.4	49492.8
43630	55169.3	49492.6
43631	55169.2	49492.4
43632	55169.1	49492.2
43633	55169.0	49492.0
43634	55168.9	49491.8
43635	55168.8	49491.6
43636	55168.7	49491.4
43637	55168.6	49491.2
43638	55168.5	49491.0
43639	55168.4	49490.8
43640	55168.3	49490.6
43641	55168.2	49490.4
43642	55168.1	49490.2
43643	55168.0	49490.0
43644	55167.9	49489.8
43645	55167.8	49489.6
43646	55167.7	49489.4
43647	55167.6	49489.2
43648	55167.5	49489.0
43649	55167.4	49488.8
43650	55167.3	49488.6
43651	55167.2	49488.4
43652	55167.1	49488.2
43653	55167.0	49488.0
43654	55166.9	49487.8
43655	55166.8	49487.6
43656	55166.7	49487.4
43657	55166.6	49487.2
43658	55166.5	49487.0
43659	55166.4	49486.8
43660	55166.3	49486.6
43661	55166.2	49486.4
43662	55166.1	49486.2
43663	55166.0	49486.0
43664	55165.9	49485.8
43665	55165.8	49485.6
43666	55165.7	49485.4
43667	55165.6	49485.2
43668	55165.5	49485.0
43669	55165.4	49484.8
43670	55165.3	49484.6
43671	55165.2	49484.4
43672	55165.1	49484.2
43673	55165.0	49484.0
43674	55164.9	49483.8
43675	55164.8	49483.6
43676	55164.7	49483.4
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43680	55164.3	49482

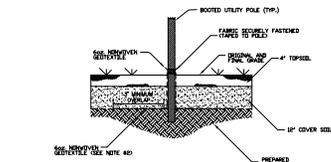
**COVER TYPE**



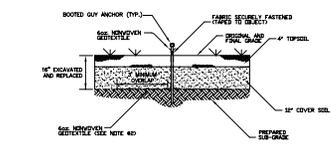
**A**  
A-25  
**TYPICAL TYPE & TRANSITION**  
NOT TO SCALE



**1**  
A-25  
**TYPICAL ABOVE GRADE ENGINEERED COVER AT PAVEMENT THE IN**  
NOT TO SCALE



**2**  
A-25  
**TYPICAL UTILITY POLE BOOT DETAIL**  
NOT TO SCALE



**3**  
A-25  
**TYPICAL GUY ANCHOR BOOT DETAIL**  
NOT TO SCALE

**LEGEND**

- — DETAIL/CROSS SECTION DESIGNATION
- — SHEET NO. WHERE DETAIL/CROSS SECTION IS PRESENTED

**NOTES**

- 1) FOR SLOPES FLATTER THAN 2% USE A 16# NONWOVEN GEOTEXTILE WAS INSTALLED ON HIDE FILES AND A 16# NONWOVEN GEOTEXTILE WAS INSTALLED ELSEWHERE.
- 2) FOR SLOPES 2% OR STEEPER, A GEOMETRIC DRAIN WAS INSTALLED AS FOLLOWS:
  - a. ON HIDE FILES, A GEOMETRIC DRAIN WAS INSTALLED FROM THE TOP OF SLOPE TO EDGE LINE TO A MIN BOOT CHAINING IN ELEVATION. A 16# NONWOVEN GEOTEXTILE WAS USED TO SLOPES AND FILL FROM TO THE CHAINING.
  - b. IF SLOPES ARE FLATTER THAN HIDE FILES, A 16# NONWOVEN GEOTEXTILE WAS USED THROUGHOUT.
- 3) SEE SPECIFICATIONS FOR DETAILS AND MATERIALS USED.
- 4) PLEASE REFER TO THE REGIONAL TRANSPORTATION CENTER COVER CERTIFICATION REPORT AND ALL SHALL REPORT FOR ADDITIONAL DETAILS RELATED TO THE REGIONAL TRANSPORTATION CENTER.

NO.	DATE	DESCRIPTION	BY	CHK
1	1/22/08	FINAL SUBMITTAL	JK	JK
2	1/22/08	FOR COMMENTS BY 2/22/08	JK	JK
3	2/11/08	FOR COMMENTS BY 2/22/08	JK	JK
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48	2/11/08	FOR COMMENTS BY 2/22/08	JK	JK
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50	2/11/08	FOR COMMENTS BY 2/22/08	JK	JK

PROFESSIONAL LAND SURVEYOR  
PROFESSIONAL ENGINEER

**ROUX ASSOCIATES, INC.**  
Environmental Consulting & Management

**MERIDIAN**  
Environmental Consulting & Management

**Coastal Associates**  
Environmental, New Hampshire  
Manchester, NH 03104  
603-688-0880 • FAX 603-688-1199

PROJECT RECORD (TAX MAP LOT 9-2-81)  
DETAILS & TRANSITIONS  
INDUSTRIAL-PLEX SITE REMEDIATION TRUST  
WOBBURN, MASSACHUSETTS

SCALE: 1" = 10'-0"  
AUGUST 8, 2000

DESIGNED BY: MJP  
DRAWN BY: MJP  
CHECKED BY: JJK  
FILE: 2000116.dwg  
PROJECT: 2000.00  
SHEET: 0 OF 5



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I  
ONE CONGRESS STREET SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

September 30, 2008

Aero Realty Trust

(property owners of 223 & 223R New Boston Street, Woburn, MA (Tax Maps 9-2-3 & 9-2-4))  
c/o Richard Mizzoni & Michael Zayyka, Trustees  
223 New Boston Street  
Woburn, MA 01801

Re: Industri-plex Superfund Site, Operable Unit 1: Final Property-Specific Cover Certification Report for 223 & 223R New Boston Street, Woburn, MA, (Tax Maps 9-2-3 & 9-2-4).

Dear Aero Realty Trust:

Please find attached the property-specific final Cover Certification Report (CCR) for your property located at 223 & 223R New Boston Street, Woburn, MA, (Tax Maps 9-2-3 & 9-2-4). This CCR documents the completion of a portion of the Remedial Action for soil, sediments, and air at the Industri-Plex Superfund Site, Operable Unit 1, Woburn, MA, in accordance with approved 100% Design Report, dated April 1992. The Remedial Action implemented on your property was required by the Consent Decree entered on April 24, 1989 by the United States District Court for the District of Massachusetts in the matter styled United States v. Stauffer Chemical Company et al., Civil Action No. 89-0195-MC, and Commonwealth of Massachusetts v. Stauffer Chemical Company et al., Civil Action No. 89-0196-MC.

The CCR contains detailed full-size Record Drawings illustrating the Remedial Action implemented on your property, such as the location of Engineered and/or Equivalent Covers which serve as barriers preventing contact to the underlying Contaminated Soils. The Record Drawings also illustrate the location of various land classifications designated on your property (i.e. Land Class A, B, C and/or D), which represent various conditions and restrictions. The details contained in the CCR, particularly the Record Drawings, will be useful towards ensuring the long protectiveness of the remedy and compliance with institutional controls (i.e. Grant of Environmental Restriction).

In addition to the CCR, you are also being provided:

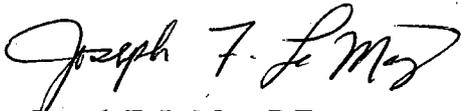
- 1) a set of half-size Record Drawings; and
- 2) a compact disc containing electronic versions of the CCR, as well as electronic CAD files of the Record Drawings.

The half-size drawings will be useful towards your periodic inspection of the remedial action implemented on your property, as well as any consideration you may have towards implementing future intrusive work on the property that may affect the remedial action. If you elect to alter the remedial action on your property (e.g. Engineered or Equivalent Covers), then you will be required to prepare As Built Records. The As Built Records are engineering drawings and other records depicting the location and details of remedial action alterations, and Clean Corridors, as constructed on the property. EPA expects the As Built Records to include engineering drawings which are similar in detail and quality as the Record Drawings. The electronic CAD files provided in the attached compact disc can be utilized by the owner and/or their designated surveyor to effectively and efficiently alter the Record Drawings and prepare adequate As Built Records.

The next steps in the superfund process for this property will be the inauguration and recording of the Grant of Environmental Restrictions (Grant). A package will be sent to you regarding the inauguration requirements for your property.

If you should have any questions regarding this letter, please contact me at (617) 918-1323.

Sincerely,



Joseph F. LeMay, P.E.  
Remedial Project Manager  
Office Site Remediation and Restoration

cc: Bob Cianciarulo, EPA (letter)  
David Peterson, EPA (letter)  
Jennifer McWeeney, MassDEP  
Andy Cohen, MassDEP (letter)  
Tim Cosgrave, ISRT Coordinator (letter)  
Carol Dickerson, SMC (letter)  
Randy Cooper, Monsanto (letter)  
Michael Leon, Nutter McClennen & Fish (letter)  
Neil Thurber, M&E (letter)