

# *Trestle Trail Shared-Use Path*

Coventry, Rhode Island

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## Introduction

On behalf of our client, Prime Engineering, Inc. (PEI), Vanasse Hangen Brustlin, Inc. (VHB) has completed this Remedial Action Work Plan (RAWP) for the property located along the railroad right-of-way in Coventry, Rhode Island (referred to herein as the Site or Trestle Trail). The Rhode Island Department of Environmental Management (RIDEM) Case Number is 2010-019. The proposed Trestle Trail Shared-Use Path (i.e. Trestle Trail) is approximately 10 miles in length and is located in the Town of Coventry. Its alignment is depicted in **Figure 1**.

The RAWP has been prepared in accordance with Section 9.0 of the *Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (Remediation Regulations)* to detail the remedy recommended in the Site Investigation Report (SIR) and approved by RIDEM on May 30, 2012 relative to impacts to soils identified during site investigation activities. This plan was prepared with consideration to the following reports and correspondence:

- Limited Subsurface Soil and Groundwater Investigation, prepared by VHB, dated November 17, 2008;
- Notification of Release, prepared by RIDEM Office of Planning and Development, dated May 5, 2010;
- Letter of Responsibility, prepared by RIDEM Office of Waste Management (OWM), dated March 12, 2010;
- Pre-Site Investigation Public Notice Letter, prepared by VHB, dated June 21, 2011;
- Response to Public Comments, prepared by VHB, dated August 18, 2011;
- Site Investigation Report Addendum, prepared by VHB, dated January 24, 2012;
- SIR Comments, prepared by RIDEM, dated February 12, 2012;
- Response to RIDEM SIR Comments, prepared by VHB, dated March 3, 2012;
- Program Letter, prepared by RIDEM, dated March 21, 2012;
- Post-Site Investigation Public Notice Letter, prepared by VHB, dated March 30, 2012; and
- Remedial Decision Letter, prepared by RIDEM, dated May 30, 2012.

VHB performed these investigations for PEI to support their efforts to construct a recreational facility along the 10-mile corridor of property to be used as a bikeway, walking and equestrian path beginning at the Connecticut-Rhode Island border and

extending east approximately one mile beyond the Flat River Reservoir Bridge in Coventry, Rhode Island. A Site location map is included as **Figure 1**.

Pursuant to the Rhode General Laws, Title 23, *Health and Safety*, Chapter 23-19.14, *Industrial Property Remediation and Reuse Act*, Section 23-19.14-5, *Environmental Equity and Public Participation*, a public meeting was advertized and held at the Coventry Community Center on July 12, 2011. Following the 10-day public comment period, VHB submitted a response to public comments on August 18, 2011.

Site investigation activities were summarized in a report submitted to RIDEM on January 24, 2012. Following responses to RIDEM comments regarding the site investigation, RIDEM issued a Program Letter on March 21, 2012.

Public notice was subsequently conducted to all abutting property owners, tenants, and the Town of Coventry, regarding the substantive findings of the completed investigation in accordance with Rules 7.07 and 7.09 of Remediation Regulations. The opportunity for public review and comment on the technical feasibility of the proposed remedial alternatives commenced on March 30, 2012 and the period closed May 11, 2012, with no comments received.

This RAWP presents a remedial action to eliminate direct exposure to impacted soils in portions of the railroad right-of-way. Direct exposure to impacted soils at the Site will be managed via soil excavation and an engineered soil cap. An Environmental Land Use Restriction (ELUR) will be recorded in the chain of title(s) for the entire Site.

VHB prepared a draft ELUR (attached as **Appendix E**) on behalf of the Client. The draft ELUR proposes:

- Prohibiting the use of groundwater at the Site for drinking water;
- The Site's capped areas remain in place and in good condition;
- RIDEM notification and appropriate response actions should future soil excavation be required; and
- Annual inspection of the Site.

Remedial work will commence concurrently with redevelopment of the Site. This RAWP has been prepared on behalf of and for the exclusive use of PEI, RIDOT and RIDEM. Limitations associated with this practice are included in **Appendix A**.

# Site Description and Overview

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## Location and Site Description

Trestle Trail, hereinafter referred to as the Site or the Trail, is located in rural Coventry, Rhode Island along the bed of a former railroad track. The Site consists of a 10-mile corridor of property that is proposed for use as a developed bike, walking, and equestrian path running from the Connecticut-Rhode Island border and continuing approximately one mile east beyond the Flat River Reservoir Bridge in Coventry, Rhode Island.

For design and construction purposes, the project has been divided into two sections, the West Section and the East Section. The East Section, beginning in the Village of Summit, west of Route 102, has been designed and will be constructed first to connect to the existing Coventry Greenway. Contaminated soil excavated as part of the eastern segment construction will be used as fill at Camp Westwood Road and placed under a cap. Construction of this section is expected to begin in Spring 2013. The West Section, beginning at the Connecticut-Rhode Island border and extending east to connect to the East Section is currently at the 10 percent design submission stage. Construction of the West Section is not scheduled at this time. Contaminated soil associated with the West Section is proposed to be utilized as fill beneath a cap on Site to support the western segment construction. This will be designed by the State's design engineer when they move beyond the 10 percent design submission in the future.

The Site was built as a railroad in 1854 by the Hartford, Providence, and Fishkill Railroad, which operated until 1968. From 1968 to the present, the Site has been used by area residents as an unpaved path for walking, biking, and horseback riding. Evidence of motorized use by dirt bikes and all terrain vehicles has been observed during Site Investigation activities conducted by VHB.

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## Environmental Setting

The Site's 10-mile path along the former railroad consists of four parcels in Coventry, Rhode Island. A Site Location Map is included as **Figure 1**. The Site is further identified by the Coventry Tax Assessor's Office as Assessor's Plat 313/ Lot 19, Plat



314/ Lot 92, and Plat 316/ Lots 133 and 142. According to the Coventry Tax Assessor, no property description cards are available for the Site because the Site is not taxed.

The mean surface elevation of the Site ranges from approximately 260 to 470 feet above the National Geodetic Vertical Datum of 1929 (USGS 7.5 minute series, Oneco, Connecticut and Coventry Center and Crompton, Rhode Island Quadrangle). The topography of the Site generally slopes to the east and to the west, away from the highest elevation of the Site, which is located near the Village of Summit in the central portion of the Site.

According to the Soil Survey of Rhode Island (Rector 1981), soil at the Site is identified as several different units including the following: Sudbury Sany Loam (Ss), Merrimac Sandy Loam (MmB), Hinckly gravelly, sandy loam (HkA and HkC), Merrimack-Urban land complex (MU), Scarborough mucky, sandy loam (Sb), Enfield silt loam (EfB), Canton and Charlton very stony, fine sandy loams (ChB0, Hinckley - Enfield complex (HnC), Narragansett silt loam (NaA), Ridgebury, Whitman, and Leicester extremely stony, fine sandy loam (Rf), Narragansett extremely stony, silt loam (NcC), Canton and Charlton extremely stony, fine sandy loam (CkC), Adrian muck (Aa), Canton and Charlton fine sandy loam, very rocky (CeC), Woodbridge very stony, fine sandy loam (WoB), Gloucester-Hinckley very stony, sandy loam (GhC), Windsor loamy sand (WgA and WgB), Pits, gravel (Pg), and Sutton very stony, fine sandy loam (SuB).

Groundwater within the Site vicinity is classified by RIDEM as GA. Groundwater areas classified as GA are those water resources that have been designated as suitable for public or private drinking water uses without treatment.

Numerous surface water bodies abut the Site including Carbuncle Pond, Moosup River, Bucks Horn Brook, Kaszela Pond, Quidneck Brook, Coventry Center Pond (Stump Pond), and Flat River Reservoir.

According to the RIDEM Water Quality Regulations, Moosup River, Carbuncle Pond, Flat River Reservoir are classified as Class A. According to RIDEM, Class A waters are designated as a source of public drinking water supply, for primary and secondary contact recreational activities and for fish and wildlife habitat. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.

According to the RIDEM Water Quality Regulations, Coventry Reservoir (Stump Pond) and Quidneck Brook are classified as a Class B. According to RIDEM, Class B waters are designated for fish and wildlife habitat and primary and secondary contact recreational activities. They shall be suitable for compatible industrial processes and cooling, hydropower, aquacultural uses, navigation, and irrigation and other agricultural uses. These waters shall have good aesthetic value.



According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the Town of Coventry (Community Panel No. 440004 0010A and 440004 0015 A, Panel 10 and 15 of 30, September 1, 1978), portions of the Site in the vicinity of water bodies are located in Zone A while the remaining portions of the Site not located in the vicinity of a water body are located in Zone C.

According to the FEMA Flood Insurance Rate Map, Zone A is defined as areas of the 100-year flood and Zone C are areas of minimal flooding.

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## **Site Operational History**

The Site was built for use as a railroad in 1854 by the Hartford, Providence, and Fishkill Railroad. The line operated until 1968. From 1968 to the present, the Site has been used by area residents as an unpaved path for walking, biking, and horseback riding. Evidence of use by motorized dirt bikes and all terrain vehicles was observed during Site Investigation activities.

## Summary of Site Soil and Groundwater Conditions

Site Investigation activities in accordance with the *Remediation Regulations* have been completed at the Site by VHB. Pertinent data from the assessment has been included in the following reports previously submitted to RIDEM.

- ▶ Limited Subsurface Soil and Groundwater Investigation, prepared by VHB, dated November 17, 2008;
- ▶ Site Investigation Report Addendum, prepared by VHB, dated January 24, 2012;
- ▶ SIR Comments, prepared by RIDEM, dated February 12, 2012; and
- ▶ Response to RIDEM SIR Comments, prepared by VHB, dated March 3, 2012.

The following section further outlines the constituents of concern identified in soil at the Site and the selected remedy to address the requirements of the RIDEM Site Remediation Regulations.

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### Soil

Laboratory analytical results of soil samples collected during the Site Investigation have identified six areas that do not meet RIDEM Residential Direct Exposure Criteria (RDEC) and/ or Industrial/ Commercial Direct Exposure Criteria (I/ CDEC) established in the *Remediation Regulations*. These areas (shown on **Figure 1**) and the substances that exceed RIDEM criteria are listed below:

#### RICONN Airport

- ▶ Residential Direct Exposure Criteria –arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i) perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene ; and
- ▶ Industrial/ Commercial Direct Exposure Criteria –arsenic and benzo(a)pyrene.

### **Greene**

- Residential Direct Exposure Criteria –arsenic, benzo(a)pyrene, and chrysene; and
- Industrial/ Commercial Direct Exposure Criteria –arsenic.

### **SS-3**

- Residential Direct Exposure Criteria –chrysene; and
- Industrial/ Commercial Direct Exposure Criteria –arsenic.

### **Camp Westwood Road**

- Residential Direct Exposure Criteria –arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i) perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene; and
- Industrial/ Commercial Direct Exposure Criteria –arsenic and benzo(a)pyrene.

### **RI Processing/SS-1**

- Residential Direct Exposure Criteria –arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene; and
- Industrial/ Commercial Direct Exposure Criteria –arsenic and benzo(a)pyrene.

### **Coventry Auto Body**

- Residential Direct Exposure Criteria –arsenic; and
- Industrial/ Commercial Direct Exposure Criteria –arsenic.

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## **Groundwater**

The Site is located in a GA Groundwater Classification area. According to the RIDEM Groundwater Quality Rules, RIDEM GA Groundwater Criteria are applicable in areas where groundwater is presumed to be suitable for potable uses without pre-treatment. Groundwater sampled from the vicinity of Rhode Island Processing (RIP) identified as RIP-1 and RIP-3 contained arsenic, beryllium, chromium and lead in excess of the RIDEM GA Groundwater Objectives.

Groundwater sampled from RIP-1 also contained nickel in excess of the RIDEM GA Groundwater Objective. No volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), or total petroleum hydrocarbons (TPH) were present in the groundwater samples above the RIDEM GA Groundwater Objectives.

Due to concerns associated with leaving a direct conduit to the groundwater in an unsecured, remote area, standard, permanent groundwater monitor wells were not installed. Instead, temporary wells consisting of polyvinyl chloride (PVC) well screen and riser pipe were placed in the borehole and backfilled with inert sand to approximately one foot above the well screen. Samples were then collected directly from the temporary wells with limited time to allow for the settling of suspended soil particles in the groundwater. Following groundwater sampling, the PVC well was pulled from the borehole and the boring was filled to grade with bentonite clay and native backfill. As such, the ground water samples collected from these temporary wells were turbid and the laboratory detection of metals in the groundwater sample may have been affected by metals absorbed to suspended soil particles.

The ELUR will prohibit the use of groundwater at the Site for drinking water.

## Remedial Activities

As detailed in Section 9.0 of the Remediation Regulations, this work plan describes the remedial action necessary under these regulations.

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### Remedial Objectives

The remedial objective for this Site as recommended in the SIR and approved by RIDEM is to reduce possible direct exposure to impacted soils via capping and institutional controls. For design and construction purposes, the project has been divided into two sections, the West Section and the East Section. Remediation will be conducted concurrent with construction.

In accordance with Section 9.02 of the Remediation Regulations, this Section addresses remedial objectives for all potentially impacted media (soil, groundwater, surface water/ sediment and air) for the entire Site. Remedial objectives for each of the media prescribed by the regulations are discussed below .



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### Soil

The remedial objective for soil is to reduce possible direct exposure to impacted soils and entrainment through wind and run off via limited excavation, capping and institutional controls. Exceedances of the RIDEM RDEC and/ or the I/ CDEC were detected in several areas along the proposed trail alignment. Where needed, remedial excavations will occur at the locations where soil data indicated exceedances of RIDEM criteria. The horizontal extent of the limited soil excavations and capping will generally be defined by the nearest adjacent soil sampling locations which did not exceed the RIDEM RDEC. In areas where excavation and/ or capping are proposed, the entire Limit of Disturbance (LOD) as defined in the attached plans will be excavated and/ or capped. Some areas will be excavated prior to capping to achieve the design grade and some will be capped directly, depending on existing and proposed grades. Impacted soils from those areas in the Eastern Section requiring excavation will be transferred to the Camp Westwood Road section of the Site to be used as fill to raise the grade up to approximately 11 feet prior to capping.

It should be noted that the design plans for the West Section are currently at 10 percent submission and, as such, do not contain information regarding proposed grades. It is not known at this time whether these areas will require excavation prior to capping or whether the cap can be applied to the existing grade.

**Appendix B** contains construction drawings which identify the soil excavation areas, and sample locations for each section of the trail as described below.

**RICONN Airport**

There were 15 soil sample locations along this section of the proposed trail with laboratory analytical results that indicated exceedances of RIDEM criteria. The following table summarizes the areas of impacts and the limits of the associated cap. The limits of the cap are shown are on Plan Nos. 1 through 4, attached as **Appendix B**.

| <b>Soil Sample Location(s)</b>  | <b>Proposed Cap Limits</b>       |
|---|----------------------------------|
| State Line and SB-139 to SB-138   | State line to Station 100+75     |
| SB-137, SB-136, SB-135, RICONN-3 to SB-134  | Station 101+25 to Station 103+25 |
| SB-129, SB-128, SB-127, SB-126, SB-125, SB-124, SB-123, SB-122, SB-121, SB-120, SB-119, RICONN-2, SB-118, SB-117, to SB-116 | Station 150+75 to Station 112+75 |
| SB-110, SB-109, SB-108, SB-107, SB-106, RICONN-1, to SB-105   | Station 115+75 to Station 118+75 |

**Greene**

There were four soil sample locations along this section of the proposed trail with laboratory analytical results that indicated exceedances of RIDEM criteria. These areas of impact are located on either side of Hopkins Hollow Road and are summarized in the following table. The limits of the cap are shown are on Plan No. 5, attached as **Appendix B**.

| <b>Soil Sample Location(s)</b> | <b>Proposed Cap Limits</b>            |
|--------------------------------|---------------------------------------|
| SB-211 to Hopkins Hollow Road  | Station 216+00 to Hopkins Hollow Road |
| Hopkins Hollow Road to SB-203  | Hopkins Hollow Road to Station 219+50 |

**SS-3**

There were five soil sample locations along this section of the proposed trail with laboratory analytical results that indicated exceedances of RIDEM criteria. These areas of impact are located approximately 675 feet from the eastern edge of Bucks Horn Brook and are summarized in the following table. The limits of the cap are shown are on Plan No. 6, attached as **Appendix B**.



| Soil Sample Location(s) | Proposed Cap Limits              |
|-------------------------|----------------------------------|
| SB-504 to SB-507        | Station 316+75 to Station 318+25 |
| SB-508 to SB-512        | Station 318+75 to Station 320+75 |

**Camp Westwood Road**

There were eight soil sample locations along this section of the proposed trail with laboratory analytical results that indicated exceedances of RIDEM criteria. These areas of impact are located on either side of Camp Westwood Road and are summarized in the following table. To meet the grades along Camp Westwood Road, approximately 0.5 to 13 feet of fill is needed. As such, only limited excavation is proposed on the western end (Station 545+50 to Station 545+64) to achieve a cap thickness of two foot. The remainder of the impacted area will be filled with impacted soil excavated from other areas of the Trail. An additional two feet of clean, imported fill will also be needed to construct the cap and achieve final grades. The limits of the cap are shown are on Plan Nos. 7 and 8, attached as **Appendix B**.

| Soil Sample Location(s)  | Proposed Cap Limits                  |
|--|--------------------------------------|
| SB-708 to Camp Westwood Road   | Station 544+85 to Camp Westwood Road |
| Camp Westwood Road, SB-703, SB-704, SB-713, SB-714, SB-715 to SB-716 | Camp Westwood Road to Station 552+00 |

**RI Processing/SS-1**

There were three soil sample locations along this section of the proposed trail with laboratory analytical results that indicated exceedances of RIDEM criteria. These areas of impact are located east of Hill Farm Road and are summarized in the following table. The limits of the cap are shown are on Plan Nos. 9 and 10, attached as **Appendix B**.

| Soil Sample Location(s)        | Proposed Cap Limits              |
|--------------------------------|----------------------------------|
| Hill Farm Road, RIP-1 to RIP-2 | Hill Farm Road to Station 702+15 |
| SB-405, SB-406 to SB-407       | Station 704+10 to Station 705+10 |
| SB-408, SS-1 to SB-409         | Station 705+60 to Station 706+60 |

The elevation at the Site east of Hill Farm Road is close to the proposed design grade and, as such, will require limited excavation to construct the cap. The area proximate to soil samples SB-406 and SS-1 are approximately one foot below the proposed design grade. Although some grading will be required, the cap can be constructed over the current grade. Excavated soil will be transferred to the Camp Westwood Road Section to be used to raise the grade prior to cap construction.

**Coventry Auto Body**

There were two soil sample locations along this section of the proposed trail with laboratory analytical results that indicated exceedances of RIDEM criteria. These areas of impact are located east of Pinehaven Road and are summarized in the

following table. The limits of the cap are shown are on Plan No. 11, attached as **Appendix B**.

| Soil Sample Location(s)                 | Proposed Cap Limits              |
|---|----------------------------------|
| CAB-2, SB-303, SB-302, CAB-3, to SB-301 | Station 747+81 to Station 750+11 |

The existing grade in this portion of the Trail is approximately at the proposed design grade and will require excavation to install a cap. Any excavated soil will be transferred to the Camp Westwood Road Section to raise the grade prior to cap construction.

**Environmental Land Use Restriction**

Since the contaminated soil will be left in place beneath a cap, an ELUR will be required for the Site. The ELUR will require that capped portions of the Site remain in place, any soil disturbed post-remediation be managed in accordance with a RIDEM approved Soil Management Plan (SMP), and that groundwater at the Site not be used as a source of drinking water.




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**Groundwater**

Groundwater was found to exceed RIDEM standards for arsenic, beryllium, chromium, lead and nickel in the vicinity of RI processing. Due to the relatively shallow depth of excavations, dewatering activities are not anticipated. Capping will limit infiltration of storm water through impacted soils. After construction of the trail, the ELUR will prohibit the use of groundwater below the Site for drinking water.




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**Air**

Constituents of concern identified during the Site investigation are not commonly associated with adverse impacts to ambient or indoor air. Therefore, no remedial objectives for air are proposed. However, dust control measures will be required during construction, and earthwork activities. Refer to the “Dust Control” sub-section below for information pertaining to fugitive dust issues.




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**Surface Water/Sediment**

Entrainment of impacted soil through wind and storm water runoff has the potential to impact adjacent surface water/ sediment. By capping impacted soil, the potential



for migration through entrainment will be eliminated. Surface and erosion runoff controls will also be provided as detailed in the “Soil Stockpile Management/ Erosion Control” sub-section below.

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## Proposed Remedy

Remedial actions will be conducted concurrently with Site redevelopment. The East Section is proposed for construction in the Spring of 2013. The West Section is currently at the 10 percent design stage. The remedial action will consist of the encapsulation of soil over most of the Site in order to eliminate direct exposure (refer to **Figure 3**).

The following encapsulation methods are proposed for the Trestle Trail in its entirety; however, cap option 1 is the preferred remedy for the East Section. Options 2 through 4 will only be used for the East Section if in-field conditions prevent installing two feet of clean fill. Deviation from the two feet of clean fill for the East Section must be approved by the State’s design engineer (Prime Engineering, Inc.) prior to implementation to ensure proper function of the trail design.

1. Two feet of clean fill;
2. A continuous layer of four inches of pavement placed in two perpendicular lifts above six inches of a clean fill sub-grade;
3. One-foot of clean fill underlain with a geotextile fabric; or
4. Four inches of stone dust underlain by eight inches of clean fill and a geotextile fabric.

Since impacted soil will be left in place with a cap, an ELUR will also be required for the Site. An ELUR is a legal document drafted for the purpose of placing a notice of restrictions on the use or physical condition of a property for the protection of human health. The ELUR will require that the capped portions of the property remain in place, any soil disturbed post-remediation will be managed in accordance with a RIDEM approved Soil Management Plan (SMP), and that groundwater at the Site is not used as a source of drinking water. A copy of the draft ELUR for this property is included in **Appendix E**. Upon completion of the proposed redevelopment construction activities and RIDEM approval, the ELUR will be filed in the town property records.

The proposed remedy will meet the remedial objectives as follows:

1. The use of a cap will prevent infiltration/ migration of hazardous substances by eliminating soil exposure to wind and rain;

2. The use of the cap will physically prevent direct contact with impacted soil beneath the cap;
3. Volatilization is not a concern for the Site; however, the cap will prevent entrainment of contaminants through wind and rain; and
4. Surface runoff will be controlled through the use of erosion controls during construction as described herein.

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## **Points of Compliance**

During Site construction activities, the construction superintendent, along with the assistance of a VHB representative, will monitor construction to document that the engineered controls are properly constructed in accordance with the RAWP. Operation logs will be kept and submitted upon the completion of the project.

The proper installation and documented maintenance of the cap is the Point of Compliance. The area subject to the ELUR, which includes the engineered barrier, will be inspected on a yearly basis to document the long-term integrity of the cap. The inspection will be documented in a written report, which will be forwarded to the Department on a yearly basis.

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## **Proposed Schedule**

The proposed Site remedy consists of soil encapsulation via engineered controls and implementation of an ELUR. The remedial actions will be completed concurrently with Site redevelopment construction. Construction of the East Section is targeted to begin in the Spring of 2013. Construction of the West Section is not scheduled at this time.

The Remedial Action Closure Report, draft ELUR and draft SMP will be submitted within 30 days following the completion of the remedial action. The ELUR and SMP will be finalized by the Client within 60 days following the approval by RIDEM and will be recorded with the Town of Coventry. A recorded copy of the ELUR will be forwarded to RIDEM by RIDOT within 15 days of filing.

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## **Contractors and/or Consultants**

The project is still in the design stage and a Site contractor has not been selected yet. VHB will document construction activities and installation of the engineered cap and is available to conduct the yearly cap inspections as requested.

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## Design Standards and Technical Specifications

The following encapsulation methods are proposed for the Trestle Trail in its entirety; however, cap option 1 is the preferred remedy for the East Section. Options 2 through 4 will only be used for the East Section if in-field conditions prevent installing two feet of clean fill. Deviation from the two feet of clean fill for the East Section must be approved by the State's design engineer (Prime Engineering, Inc.) prior to implementation to ensure proper function of the trail design.

1. Two feet of clean fill overlying impacted soil.
2. Six inches of clean fill subbase underlying two, two inch lifts of asphalt.
- 3.
4. Geotextile overlain with one foot of clean fill material; or
5. Four inches of stone dust underlain by eight inches of clean fill and a geotextile fabric.

Figure depicting the specifications of these cap types is attached as Exhibit D of the ELUR (located in **Appendix E** of this document). **Appendix B** contains engineering drawings provided by Prime Engineering, Inc. (PEI) showing typical cross sections of the impacted trail segments, impacted soil sample locations, and compliance points.

In areas where geotextile will be used as the engineered barrier/ cap, the fabric will possess a minimum puncture strength of 120 pounds and minimum burst strength of 400 pounds per square inch in accordance with RIDEM guidance.

All soil to construct the cap will meet the RDEC or will be certified to be non-jurisdictional. Clean fill and loam proposed to be used at the Site will be sampled and approved prior to importation to the Site. Clean fill and loam will be sampled for arsenic at a frequency of one sample per 500 cubic yards. One-quarter of the total number of compliance samples of clean fill and loam will be sampled for VOCs, Polycyclic Aromatic Hydrocarbons (PAHs), Total Metals (RCRA 13) and TPH.

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## Soil Stockpile Management

Temporary stockpiling of Site soil may be necessary for the work to be conducted at the Site. Proposed stockpile locations are shown on the attached plans in **Appendix B**. All excavated material which requires stockpiling (with the exception of clean fill/ loam imported to the Site) as detailed in the previous section, will be temporarily stockpiled on 6-mil polyethylene sheeting and covered with 6-mil polyethylene sheeting in a contractor-designated stockpile area on Site. The stockpiles will be covered

whenever there is no active excavation being conducted. Stockpiles of clean imported soil will be sufficiently separated from impacted Site soil to avoid comingling of the materials.

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## Dust Control

All reasonable precautions will be taken to prevent the excessive generation of dust during soil excavation, stockpiling, loading, and other soil handling activities. Work at the site must comply with all applicable federal, state, and local regulations, including the RIDEM Air Pollution Control Regulations, and specifically Regulation No.5 regarding control of fugitive dust. Dust control measures must be implemented, as required, to prevent airborne particulate matter from leaving the site at all times. Dust control measures (wetting soils and the use of calcium chloride) shall be implemented on an as needed basis (i.e. visual evidence of airborne dust) throughout the project. All stockpiles shall be inspected on a daily basis to ensure compliance with RIDEM Air Pollution Control Regulations. VHB will conduct periodic inspections of the Site to ensure all dust control measures are in place. This information will then be recorded in the operating log.

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## Sedimentation and Erosion Control

Prior to the start of excavation activities, sediment and erosion controls consisting of compost filter socks, silt fencing or other equivalent methods proposed by the construction contractor will be installed at the Site. A stabilized construction entrance to reduce the tracking of or flowing of sediment into the area roadways will also be installed in areas where the Site intersects public roadways. The construction entrance will be installed consistent with the *Rhode Island Soil Erosion and Sediment Control Handbook* (1989).

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## Contingency Plan (Health and Safety Plan)

A Contingency Plan (Health and Safety Plan) will be developed by the contractor for implementation with consideration to OSHA regulations. A copy of VHB's site-specific plan is attached as **Appendix C**.

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## Operating Log

An Operating Log that conforms with the requirements of Rule 9.14 of the Remediation Regulations will be utilized and maintained during all remedial actions. The Operating Log will detail information such as the thickness, composition and location of the cap and will also document earthwork activities and monitoring to

ensure that the appropriate regulations are complied with. A copy of the Operating Log template is included as **Appendix D**. The Operating Log will be readily available at the Site during construction. The Responsible Party will keep a copy of the Operating Log for a minimum of three years following completion of the remedy.

---

## Management of Remediation Waste

Any remediation waste generated will be managed in accordance with state and federal requirements and disposal documentation will be provided to RIDEM.

If excess Site soil is generated, the material will be sampled for the appropriate disposal parameters and disposed of at a permitted facility. Any disposal manifests will be included in the Remedial Action Closure Report.

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## Security Procedures

Security will be addressed by the utilization of temporary construction fencing. Access will be controlled by the use of a gate. The fence will be secured at the conclusion of each workday during the construction project by the construction superintendent.

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## Shutdown, Closure and Post-Closure Requirements

Upon completion of the project, a Closure Report will be submitted to the department outlining all field activities that were completed. The report will also include a schedule for yearly cap inspection and the results. Any maintenance necessary will also be noted.

---

## Institutional Controls and Notices

As indicated, an ELUR will be recorded for the property in the Town of Coventry Land Evidence records. The ELUR and SMP will be finalized by the Client within 60 days following the approval by RIDEM and will be recorded with the Town of Coventry. A recorded copy of the ELUR will be forwarded to RIDEM by the Responsible Party within 15 days of filing. A copy of the draft ELUR and SMP are attached as **Appendix E**.

---

## Compliance Determination

Successful completion of the Site capping activities documented in the periodic Operating Logs will be used to demonstrate compliance with the work plan. All information associated with these actions will be submitted to RIDEM as required.

# Certification Statements


VHB submits the following statements of certification.

### Certification by Preparer:

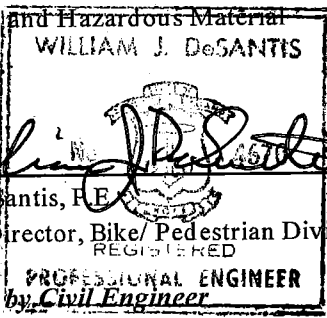
Vanasse Hangen Brustlin, Inc. has prepared this RAWP for contaminated soil in accordance with the requirements of Section 9.00 of the Remediation Regulations and certifies the accuracy of the information contained in the report to the best of our knowledge.


2/1/13  
 \_\_\_\_\_  
 Suzanne C. Courtemanche, LSP, CHMM Date

Director, Oil and Hazardous Material Services


2/1/13  
 \_\_\_\_\_  
 William DeSantis, P.E. Date

Corporate Director, Bike/ Pedestrian Division

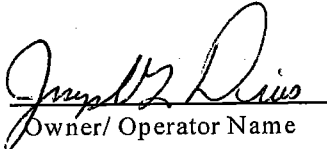
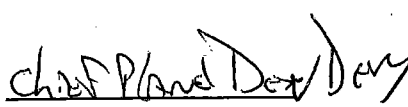


Certification by Civil Engineer

Engineering drawings and cross sectional views of the proposed trail provided in Appendix B are designed and stamped by Prime Engineering, Inc. (PEI) of East Providence, Rhode Island. Bid specifications/ contract documents including soil volumes, quantities, estimating and formal construction drawings are to be provided by PEI on behalf of the State of Rhode Island.

### Certification by Owner/Operator

I certify that the information contained in this report is a complete and accurate representation of the conditions at the Site and the proposed remedial activities to the best of my knowledge.


2/1/2013
  
 \_\_\_\_\_  
 Owner/ Operator Name Title

# 6

## References

*Coventry Assessor, June 2007.*

*Coventry Zoning/Building Department, June 2007.*

*Coventry Fire Department, June 2007.*

*Environmental Data Resources (EDR™) Radius Map with Geocheck May 29, 2007.*

*Federal Emergency Management Agency Flood Insurance Rate Map, Town of Coventry (Community Panel No. 440004 0010A and 440004 0015 A, Panel 10 and 15 of 30, September 1, 1978)*

*Hermes, O.D., L.P. Gromet and D.P. Murray. Bedrock Geologic Map of Rhode Island, 1994.*

*RIDEM Wellhead Protection Areas. 1997.*

*Rector, Dean D. 1981. Soil Survey of Rhode Island. US Department of Agriculture, Soil Conservation Service in cooperation with the Rhode Island Agricultural Experiment Station.*

*University of New Hampshire Diamond Library, Topographic Maps: 1939, 1944 USGS 7.5 minute series Fall River, MA-RI Quadrangle.*

*Statewide Planning Program Aerial Photographs dated 1939, 1951-1952, 1962, 1972, 1976, 1981, 1988, 1997 and 2003.*

*Coventry Celebration: A Pictorial History, written by Donald A. D'Amato, Coventry, Rhode Island, 1991.*

*A History of Green and Vicinity 1845-1929, by Squire G. Wood, privately printed in Providence, RI, 1936.*

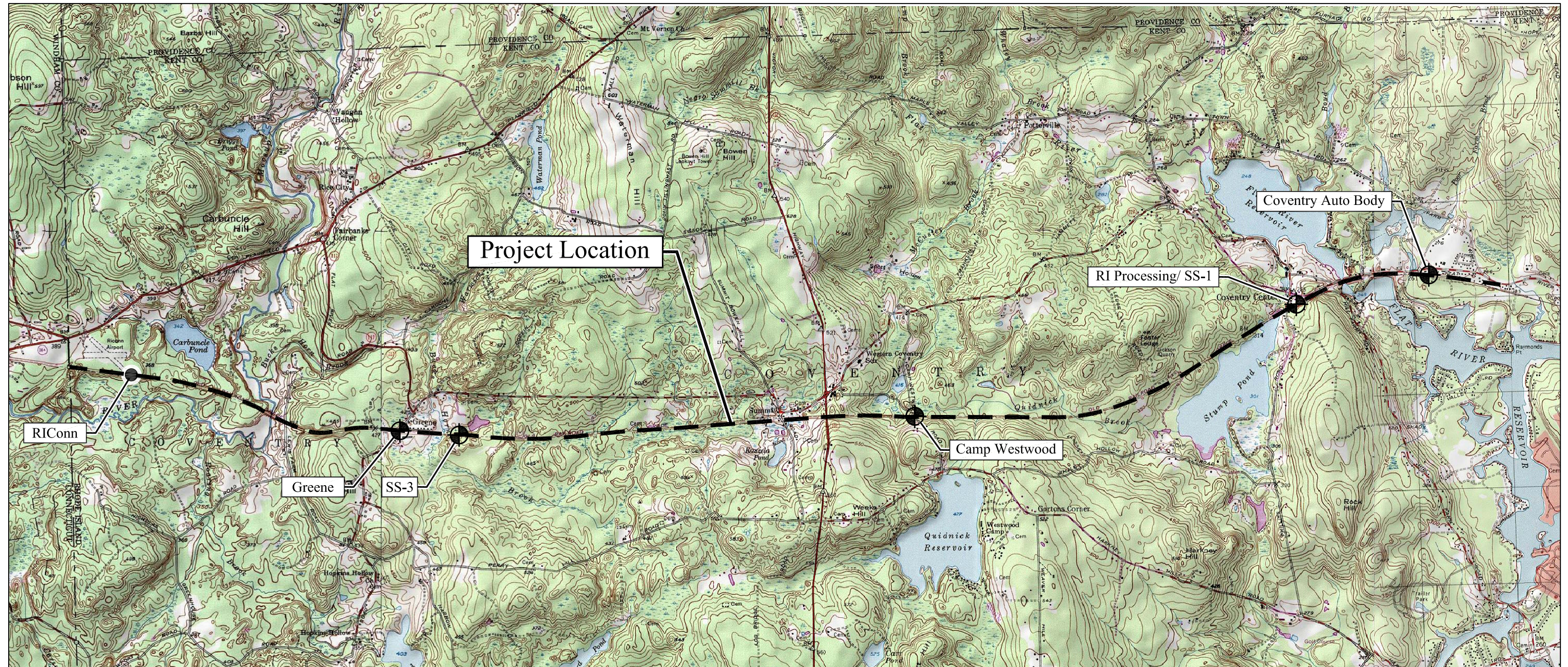
*Reflections of Coventry's Yesterdays (1741-1900), published by Coventry Public Library, 1976.*



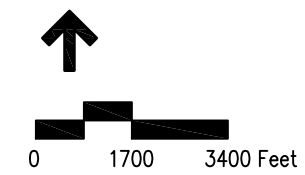


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# Figures



Source: USGS Quadrangles



**Vanasse Hangen Brustlin, Inc.**

Figure 1  
Site Location Map  
Trestle Trail  
Coventry, Rhode Island



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# Appendix A – Limitations

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## Limitations



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### Trestle Trail Shared-Use Path, Coventry, Rhode Island

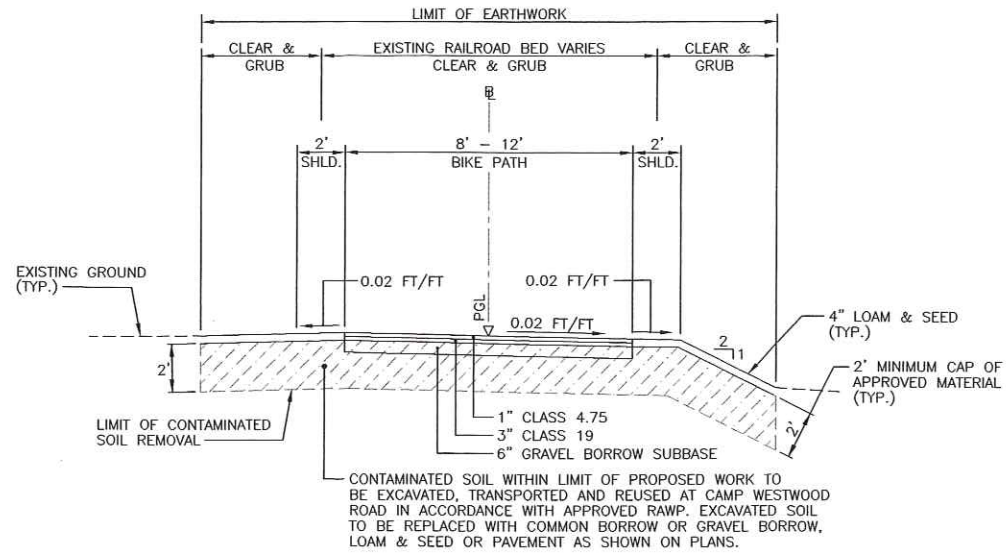
- This report has been prepared for the sole and exclusive use of Prime Engineering, Inc. (Client), the Rhode Island Department of Transportation and the Rhode Island Department of Environmental Management and is subject to and issued in connection with the Agreement and the provisions thereof. Any use or reliance upon information provided in this report, without the specific written authorization of Client and VHB, shall be at the User's sole risk.
- In conducting this work plan, VHB has obtained and relied upon information from multiple sources to form certain conclusions regarding potential environmental issues at and in the vicinity of the subject property. Except as otherwise noted, no attempt has been made to verify the accuracy or completeness of such information. VHB has not provided civil engineering, design services, or contract documents in association with this project. Engineering drawings provided by Prime Engineering, Inc.
- No attempt has been made to assess the compliance status of any past or present Owner or Operator of the Site with any federal, state, or local laws or regulations.
- The findings, observations, and conclusions presented in this report are limited by the scope of services outlined in our Agreement, which reflects schedule and budgetary constraints imposed, by the Client for the current phase of environmental assessment. Furthermore, the assessment has been performed in accordance with generally accepted engineering practices. No other warranty, expressed or implied, is made.
- The assessment presented in this report is based solely upon information gathered to date. Should further environmental or other relevant information be developed at a later date, the Client should bring the information to the attention of VHB as soon as possible. Based upon an evaluation, VHB may modify the report and its conclusions.



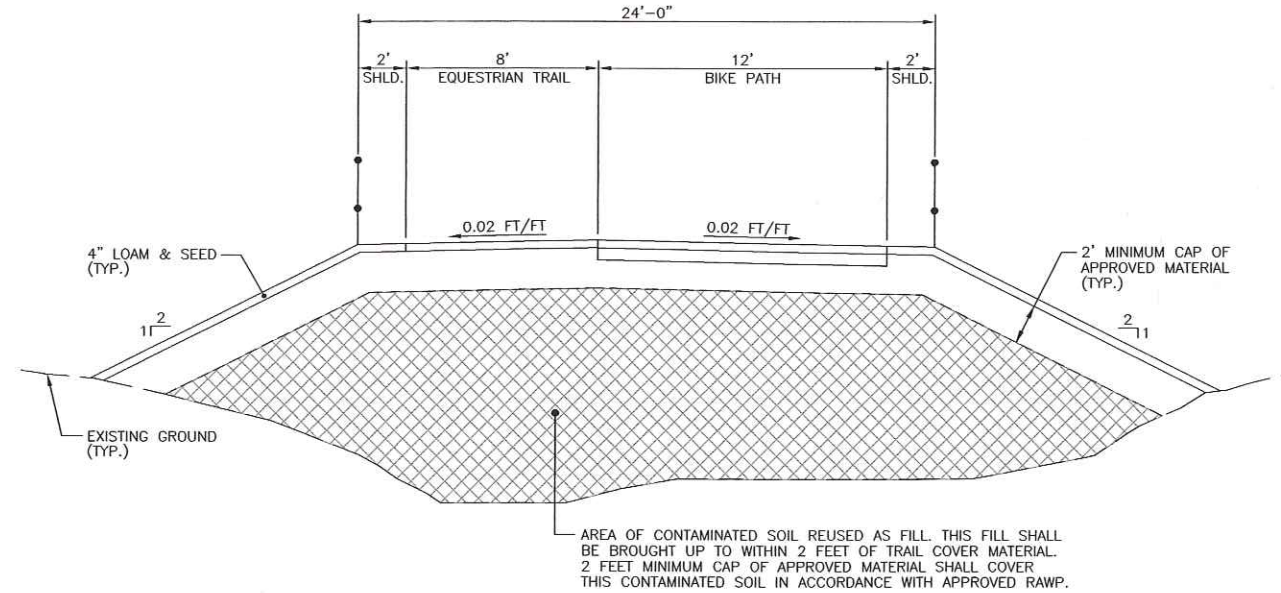
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# **Appendix B – Prime Engineering, Inc. Construction Plans**

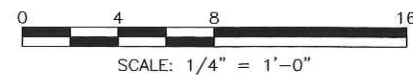
NOTE:  
 2' OF CLEAN FILL WILL BE PLACED ABOVE CONTAMINATED SOIL. CUT AMOUNTS WILL VARY BY SEGMENT. CONTAMINATED SOIL MAY BE TEMPORARILY STOCKPILED AT HOPKINS HOLLOW ROAD OR CAMP WESTWOOD ROAD PER SECTION 4 OF THE APPROVED REMEDIAL ACTION WORK PLAN.



TYPICAL EAST SECTION OF PROPOSED SHARED-USE PATH  
 IN AREA OF CONTAMINATED SOIL



TYPICAL SECTION OF PROPOSED SHARED-USE PATH  
 IN AREA WHERE CONTAMINATED SOIL IS REUSED  
 (CAMP WESTWOOD ROAD)



HUGH J. NEENAN  
 No. 4679  
 REGISTERED PROFESSIONAL ENGINEER

01-17-13


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| TRESTLE TRAIL SHARED-USE PATH<br>WEST AND EAST SECTION<br>CONNECTICUT STATE LINE TO<br>TOWN FARM ROAD (NEAR)<br>COVENTRY, RHODE ISLAND |  |
| TYPICAL SECTION  |  |
| CHECKED BY <u>  PEI  </u> DATE <u>  JAN 2013  </u> SCALE <u>  AS NOTED  </u>   |  |



**pei** PRIME Engineering, Inc.  
 392 Wampanoag Trail, East Providence, RI 02915  
 Tel: 401.233.2993 Fax: 401.383.0773



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### RICONN AIRPORT

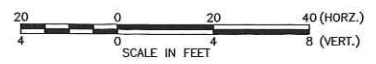
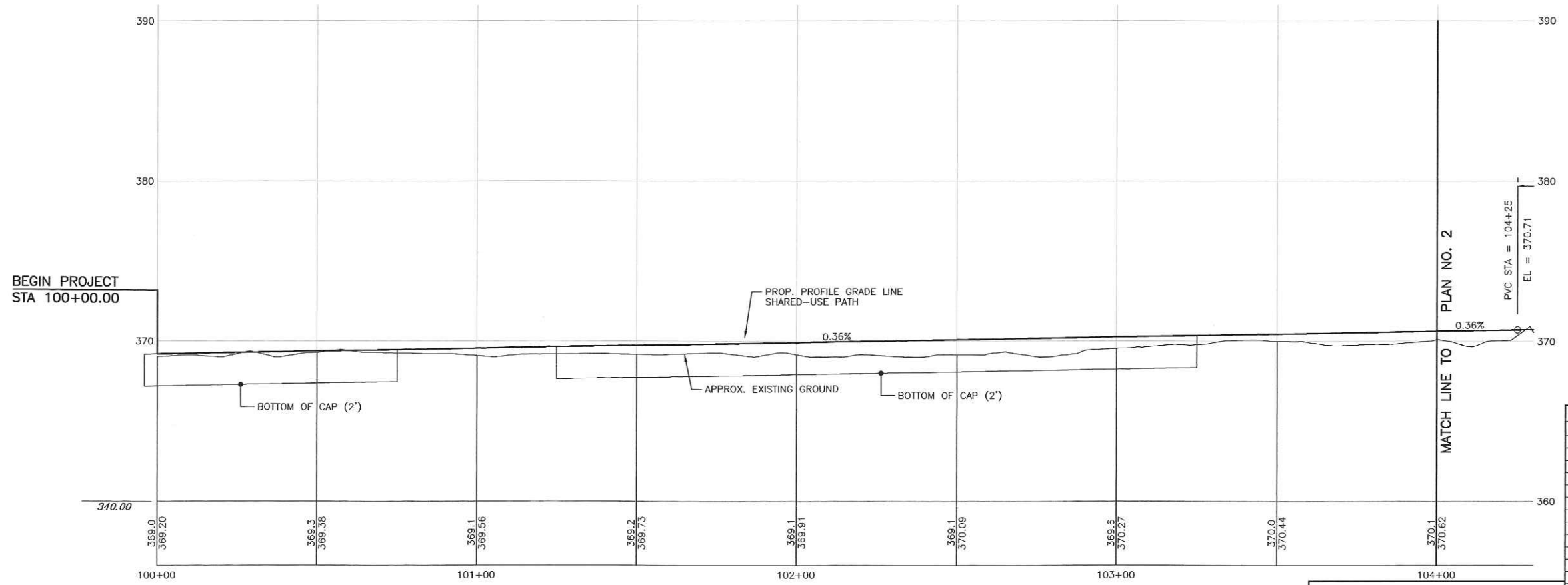
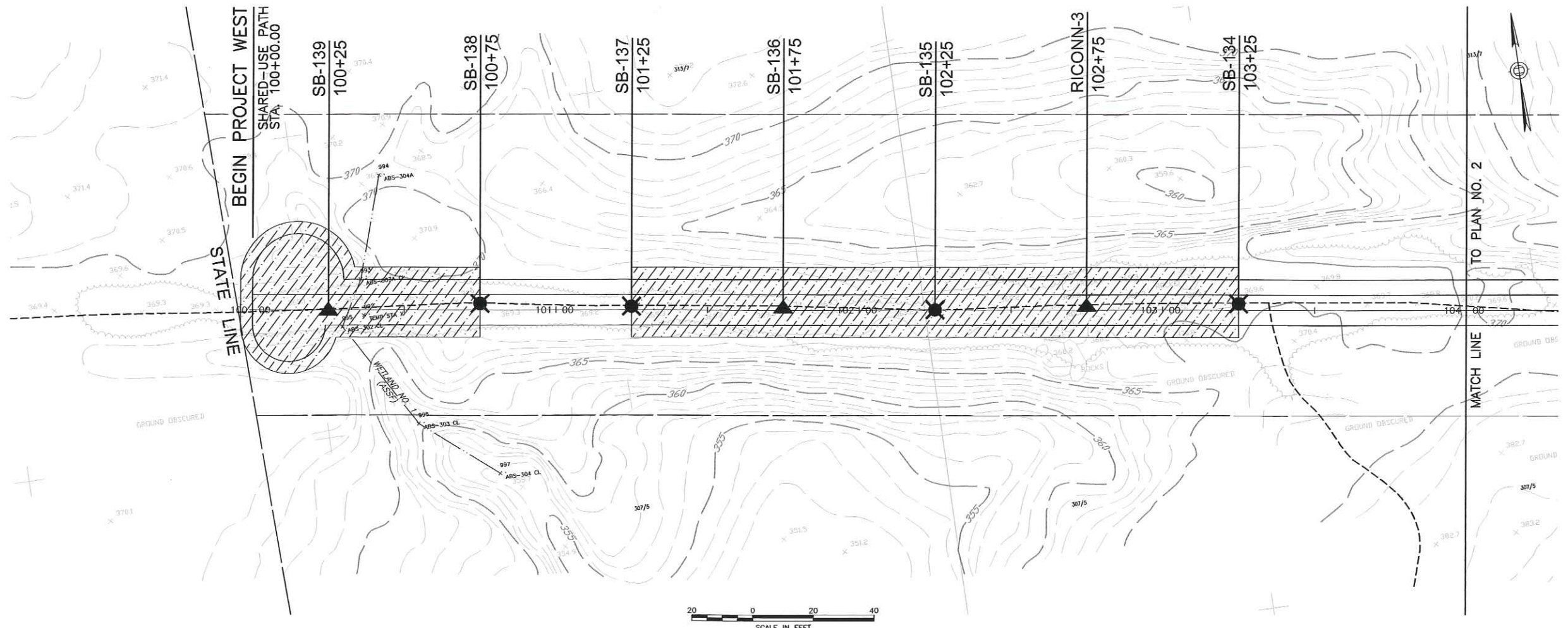
 APPROXIMATE LOCATION OF EXCAVATION OF CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.


**PROPOSED CAP LIMITS**  
 STATE LINE to STA. 100+75  
 STA. 101+25 to STA. 103+25

 EXISTING TRAIL  
 PROPOSED TRAIL

**SAMPLE LOCATION**  
 EXCEEDING THE RDEC  
 COMPLIANT WITH THE RDEC

**NOTE:**  
 2' OF CLEAN FILL WILL BE PLACED ABOVE CONTAMINATED SOIL. CUT AMOUNTS WILL VARY BY SEGMENT. CONTAMINATED SOIL MAY BE TEMPORARILY STOCKPILED AT HOPKINS' HOLLOW ROAD OR CAMP WESTWOOD ROAD PER SECTION 4 OF THE APPROVED REMEDIAL ACTION WORK PLAN.



HUGH J. NEENAN  
 No. 4679  
  
 REGISTERED PROFESSIONAL ENGINEER

01-17-13

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RHODE ISLAND  
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**TRESTLE TRAIL SHARED-USE PATH  
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 CONNECTICUT STATE LINE TO  
 TOWN FARM ROAD (NEAR)  
 COVENTRY, RHODE ISLAND

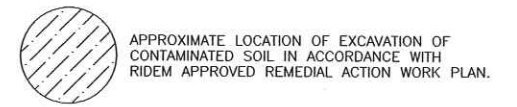
### PLAN NO. 1

CHECKED BY: PEI DATE JAN 2013 SCALE AS SHOWN

 392 Wampanoag Trail, East Providence, RI 02915  
 Tel: 401.233.2993 Fax: 401.383.0773  
**PRIME Engineering, Inc.**

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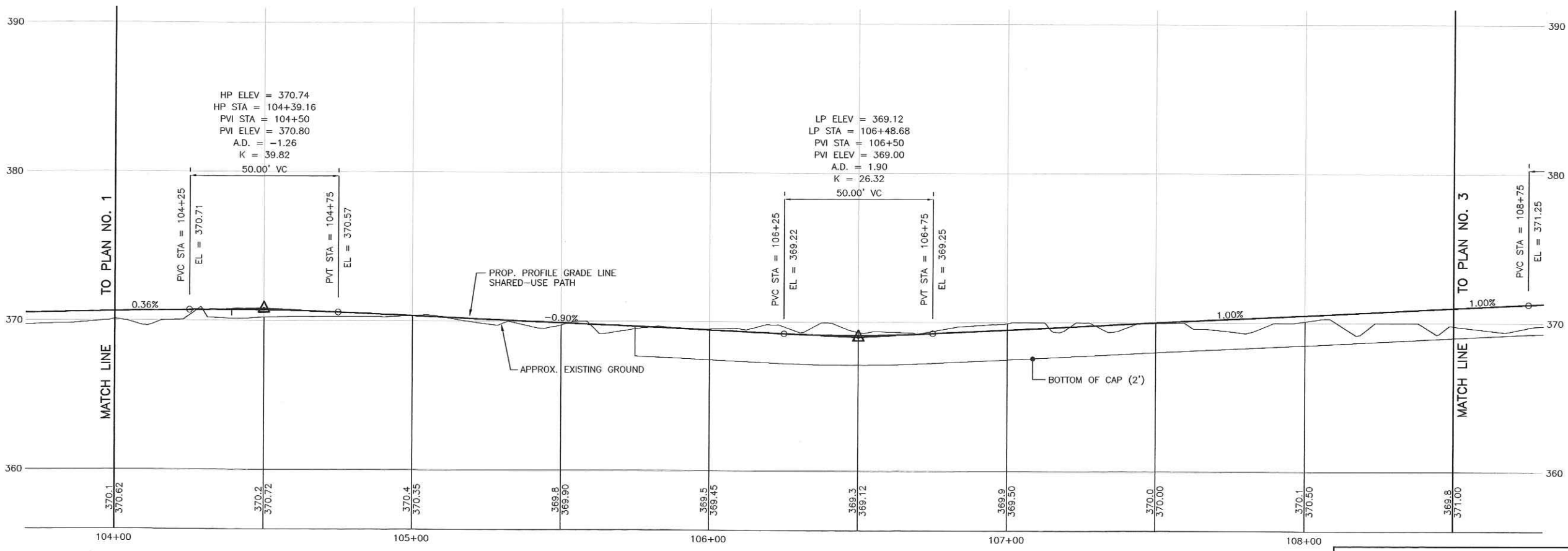
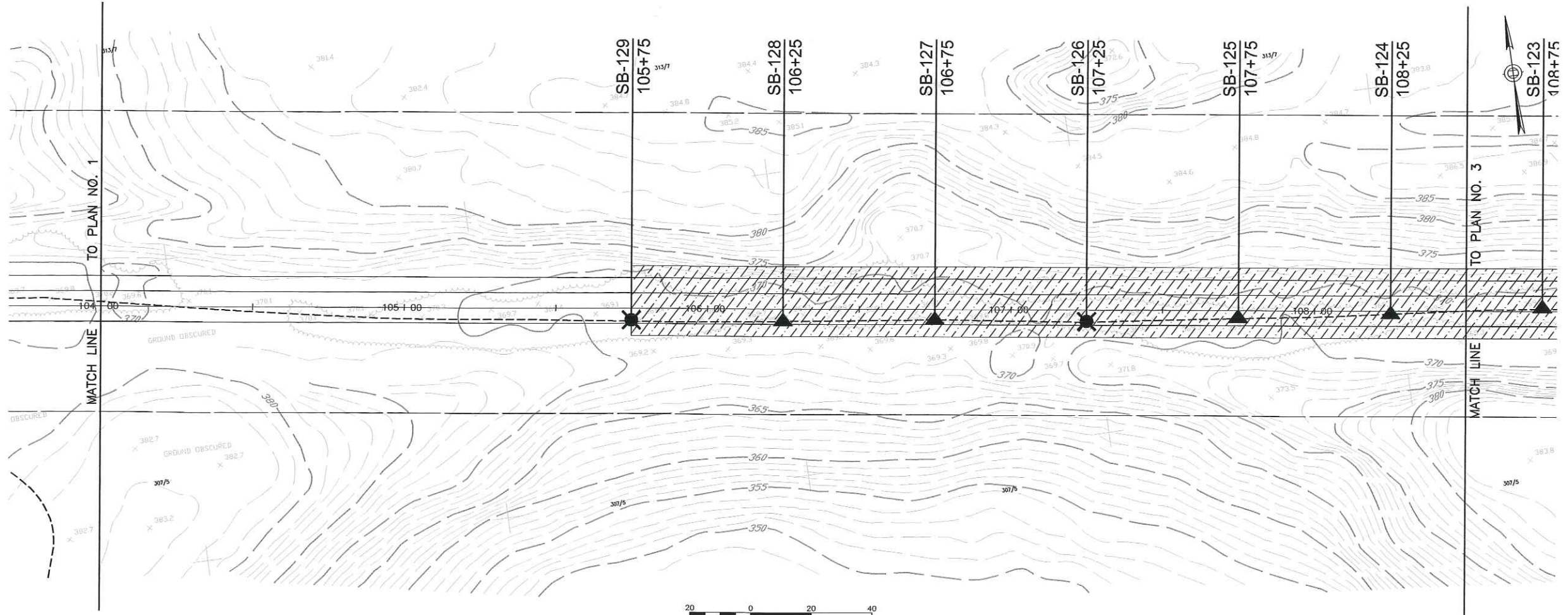


PROPOSED CAP LIMITS  
STA. 105+75 TO STA. 112+75

--- EXISTING TRAIL  
— PROPOSED TRAIL

SAMPLE LOCATION  
▲ EXCEEDING THE RDEC  
● COMPLIANT WITH THE RDEC

NOTE:  
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HUGH J. NEENAN  
No. 4679  
REGISTERED PROFESSIONAL ENGINEER  
01-17-13

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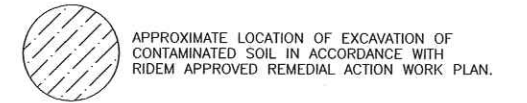
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
TRESTLE TRAIL SHARED-USE PATH WEST AND EAST SECTION  
CONNECTICUT STATE LINE TO TOWN FARM ROAD (NEAR)  
COVENTRY, RHODE ISLAND  
PLAN NO. 2  
CHECKED BY PEI DATE JAN 2013 SCALE AS SHOWN

Pei 392 Wampanoog Trail, East Providence, RI 02915  
Tel: 401.233.2993 Fax: 401.383.0773  
PRIME Engineering, Inc.



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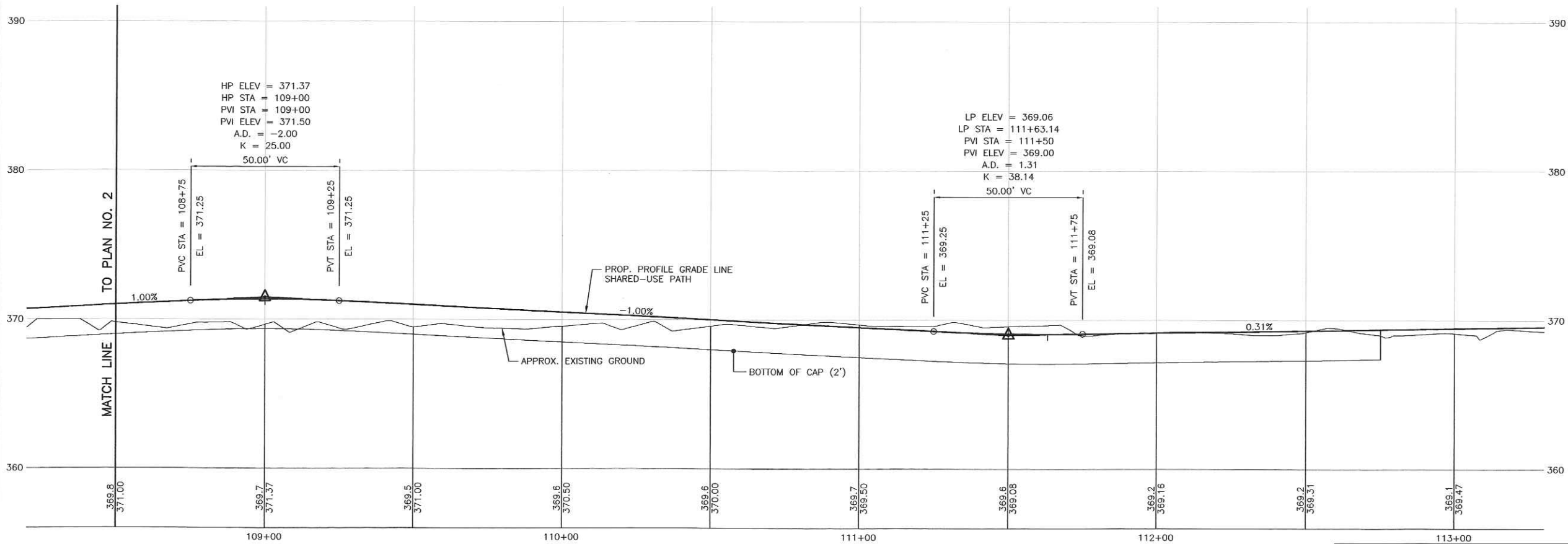
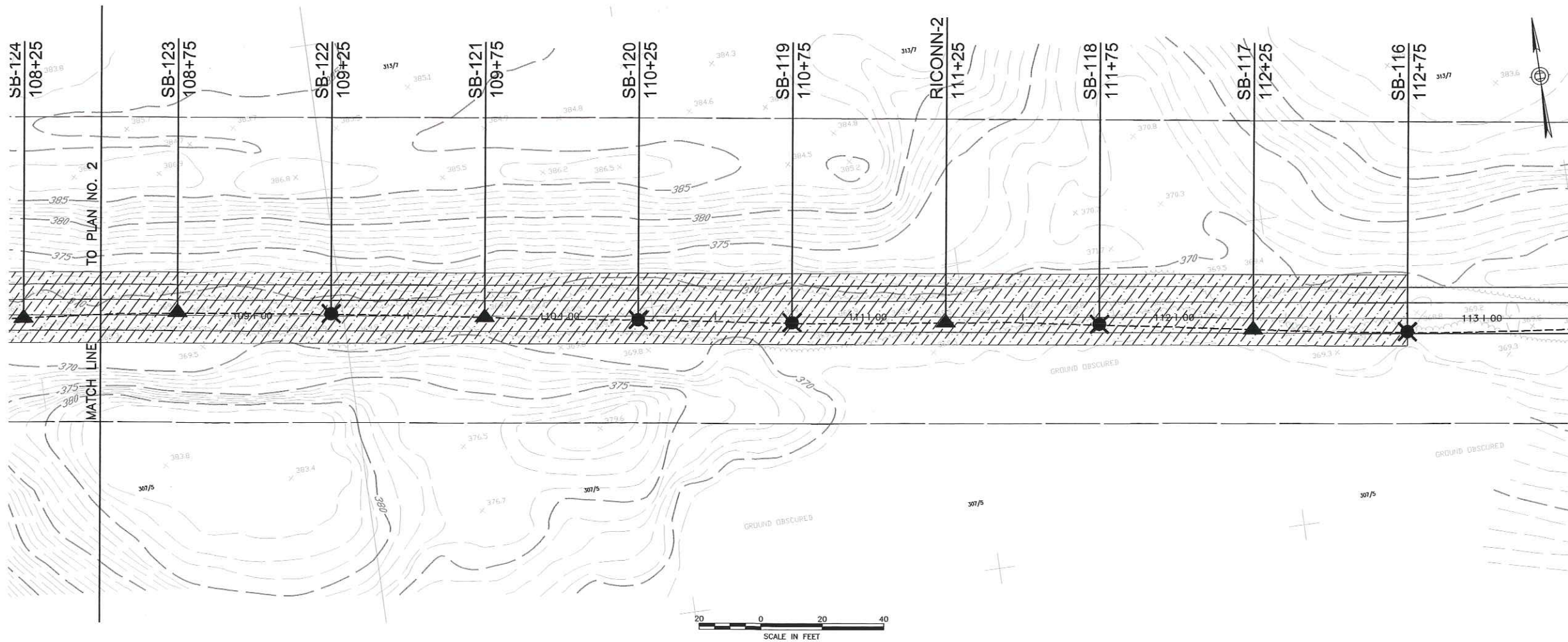


**PROPOSED CAP LIMITS**  
STA. 105+75 to STA. 112+75

--- EXISTING TRAIL  
—— PROPOSED TRAIL

**SAMPLE LOCATION**  
▲ EXCEEDING THE RDEC  
⊗ COMPLIANT WITH THE RDEC

**NOTE:**  
2' OF CLEAN FILL WILL BE PLACED ABOVE CONTAMINATED SOIL. CUT AMOUNTS WILL VARY BY SEGMENT. CONTAMINATED SOIL MAY BE TEMPORARILY STOCKPILED AT HOPKINS HOLLOW ROAD OR CAMP WESTWOOD ROAD PER SECTION 4 OF THE APPROVED REMEDIAL ACTION WORK PLAN.



**HUGH J. NEENAN**

No. 4679

REGISTERED PROFESSIONAL ENGINEER

01-17-13

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**RHODE ISLAND  
DEPARTMENT OF ENVIRONMENTAL  
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**TRESTLE TRAIL SHARED-USE PATH  
WEST AND EAST SECTION**  
CONNECTICUT STATE LINE TO  
TOWN FARM ROAD (NEAR)  
COVENTRY, RHODE ISLAND

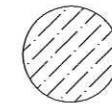
## PLAN NO. 3

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392 Wampanoag Trail, East Providence, RI 02915  
Tel: 401.233.2993 Fax: 401.383.0773  
**PRIME Engineering, Inc.**

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## RICONN AIRPORT



APPROXIMATE LOCATION OF EXCAVATION OF CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.

**PROPOSED CAP LIMITS**

STA. 115+75 to STA. 118+75

--- EXISTING TRAIL

— PROPOSED TRAIL

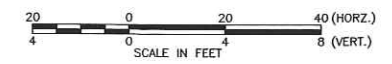
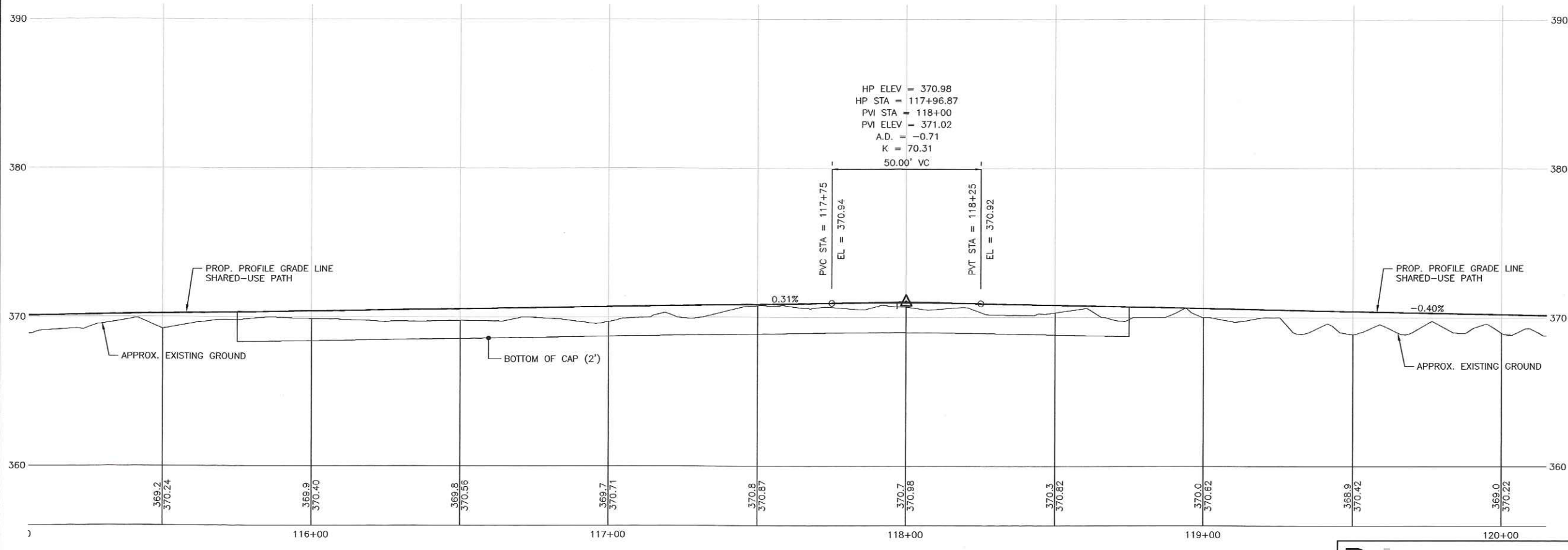
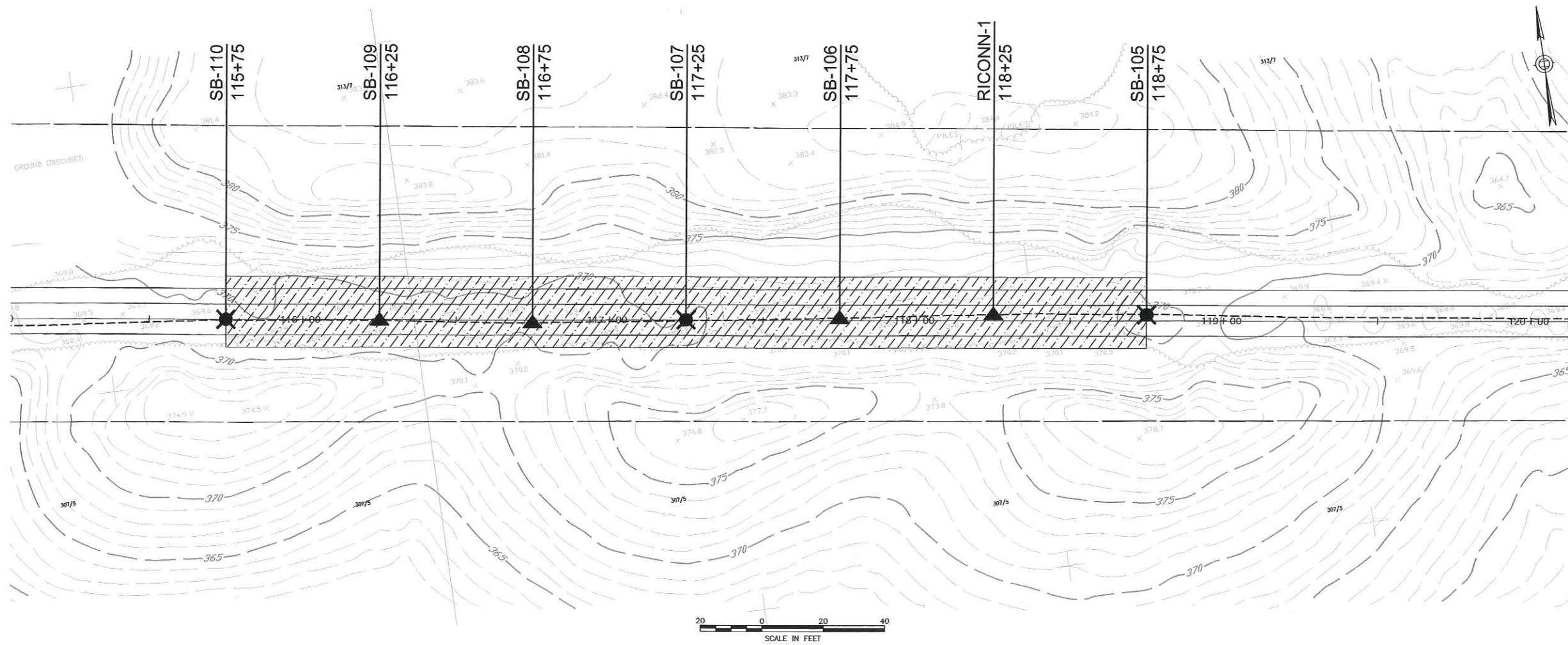
**SAMPLE LOCATION**

▲ EXCEEDING THE RDEC

⊗ COMPLIANT WITH THE RDEC

**NOTE:**

2' OF CLEAN FILL WILL BE PLACED ABOVE CONTAMINATED SOIL. CUT AMOUNTS WILL VARY BY SEGMENT. CONTAMINATED SOIL MAY BE TEMPORARILY STOCKPILED AT HOPKINS HOLLOW ROAD OR CAMP WESTWOOD ROAD PER SECTION 4 OF THE APPROVED REMEDIAL ACTION WORK PLAN.



**HUGH J. NEENAN**

No. 4679

REGISTERED PROFESSIONAL ENGINEER

01-17-13

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|  | RHODE ISLAND<br>DEPARTMENT OF ENVIRONMENTAL<br>MANAGEMENT  |
|  | TRESTLE TRAIL SHARED-USE PATH<br>WEST AND EAST SECTION<br>CONNECTICUT STATE LINE TO<br>TOWN FARM ROAD (NEAR)<br>COVENTRY, RHODE ISLAND |
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|  | CHECKED BY <u>PEI</u> DATE <u>JAN 2013</u> SCALE <u>AS SHOWN</u>   |

392 Wampanoag Trail, East Providence, RI 02915

Tel: 401.233.2993 Fax: 401.383.0773

**PRIME Engineering, Inc.**

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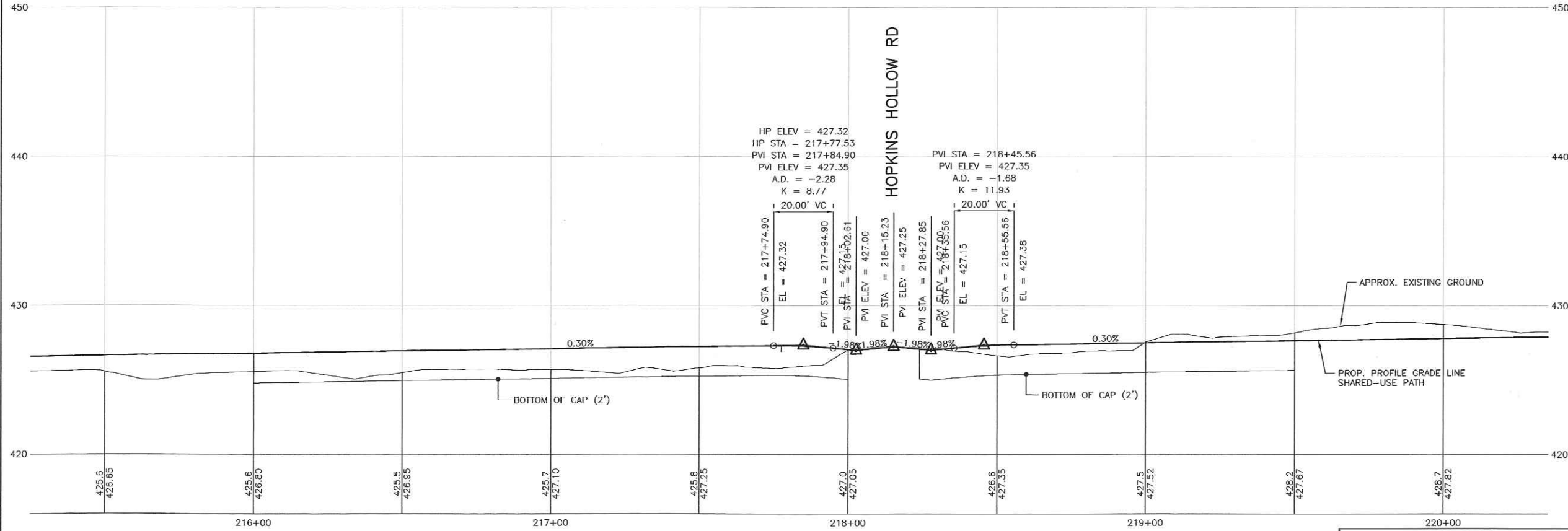
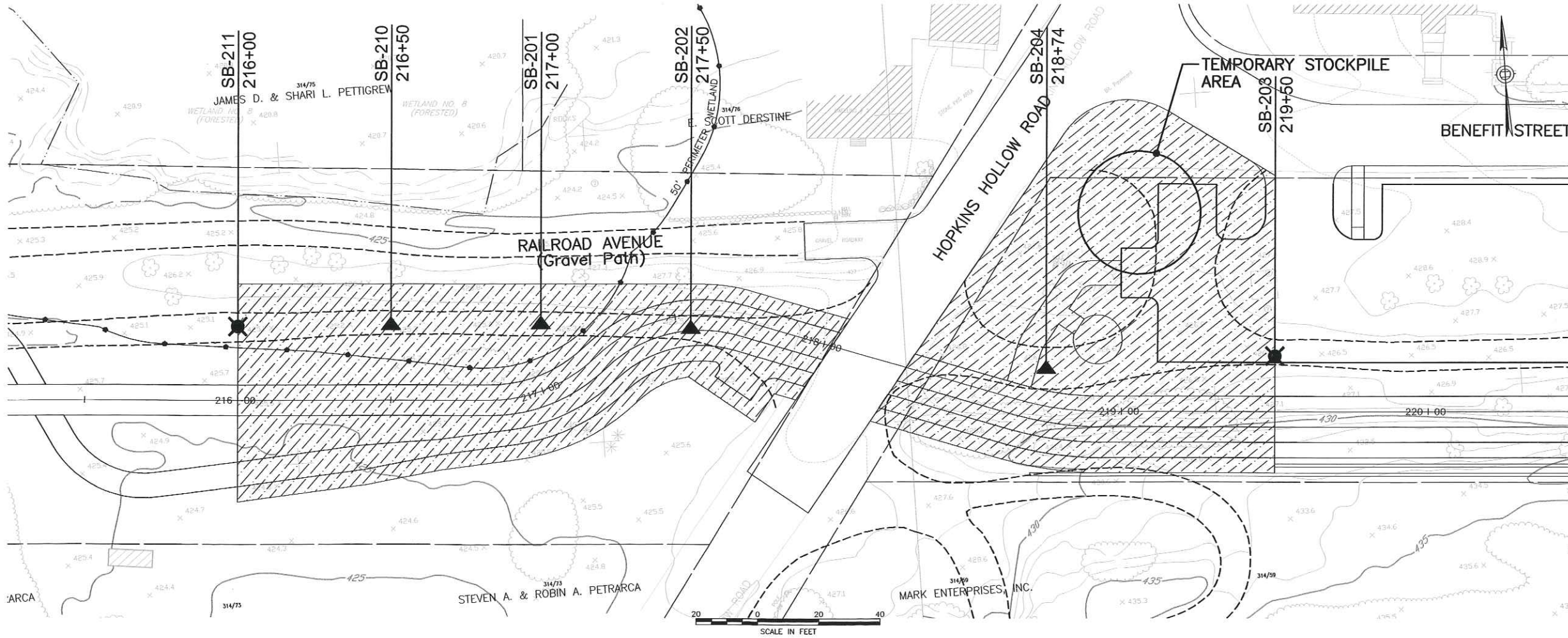
APPROXIMATE LOCATION OF EXCAVATION OF CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.

PROPOSED CAP LIMITS  
 STA. 216+00 TO HOPKINS HOLLOW ROAD  
 HOPKINS HOLLOW ROAD TO STA. 219+50

EXISTING TRAIL  
 PROPOSED TRAIL

SAMPLE LOCATION  
 EXCEEDING THE RDEC  
 COMPLIANT WITH THE RDEC

NOTE:  
 2' OF CLEAN FILL WILL BE PLACED ABOVE CONTAMINATED SOIL. CUT AMOUNTS WILL VARY BY SEGMENT. CONTAMINATED SOIL MAY BE TEMPORARILY STOCKPILED AT HOPKINS HOLLOW ROAD OR CAMP WESTWOOD ROAD PER SECTION 4 OF THE APPROVED REMEDIAL ACTION WORK PLAN.



HUGH J. NEENAN

REGISTERED PROFESSIONAL ENGINEER

01-17-13

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**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

**TRESTLE TRAIL SHARED-USE PATH WEST AND EAST SECTION**

CONNECTICUT STATE LINE TO TOWN FARM ROAD (NEAR)  
 COVENTRY, RHODE ISLAND

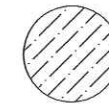
**PLAN NO. 5**

CHECKED BY PEI DATE JAN 2013 SCALE AS SHOWN

PRIME Engineering, Inc.  
 392 Wampanoag Trail, East Providence, RI 02915  
 Tel: 401.233.2993 Fax: 401.383.0773

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 APPROXIMATE LOCATION OF EXCAVATION OF CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.

**PROPOSED CAP LIMITS**

STA. 316+75 to STA. 318+25  
STA. 318+75 to STA. 320+75

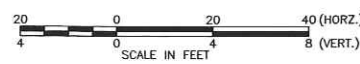
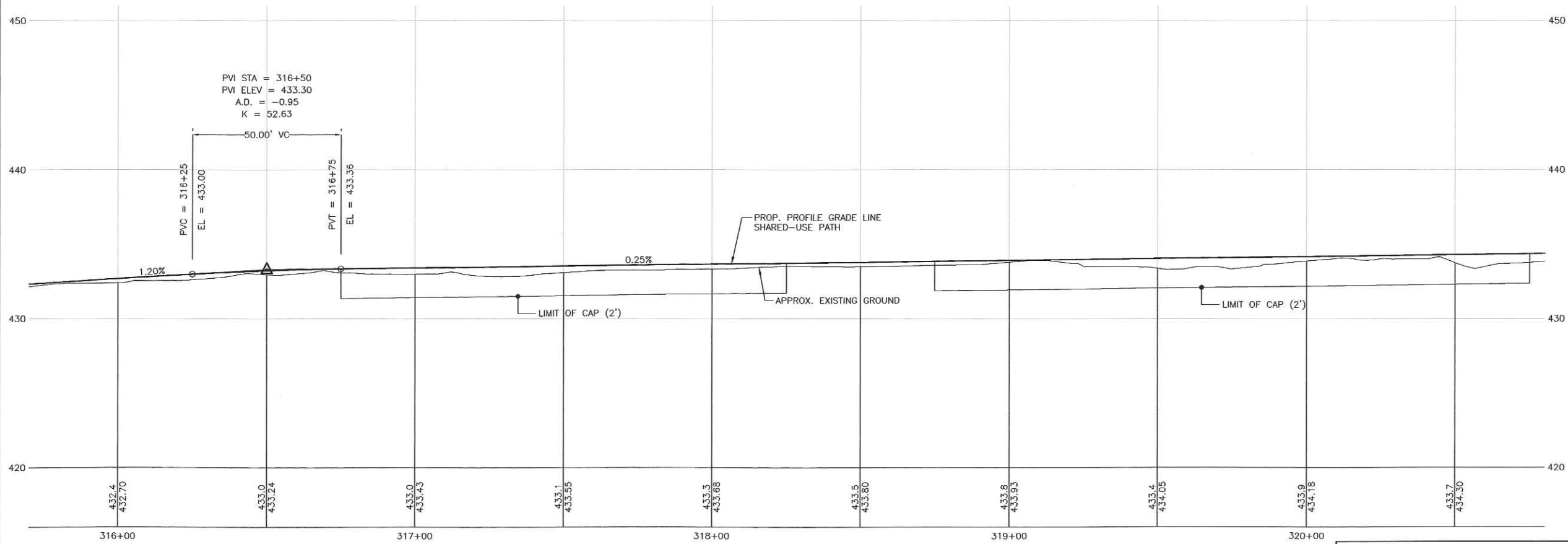
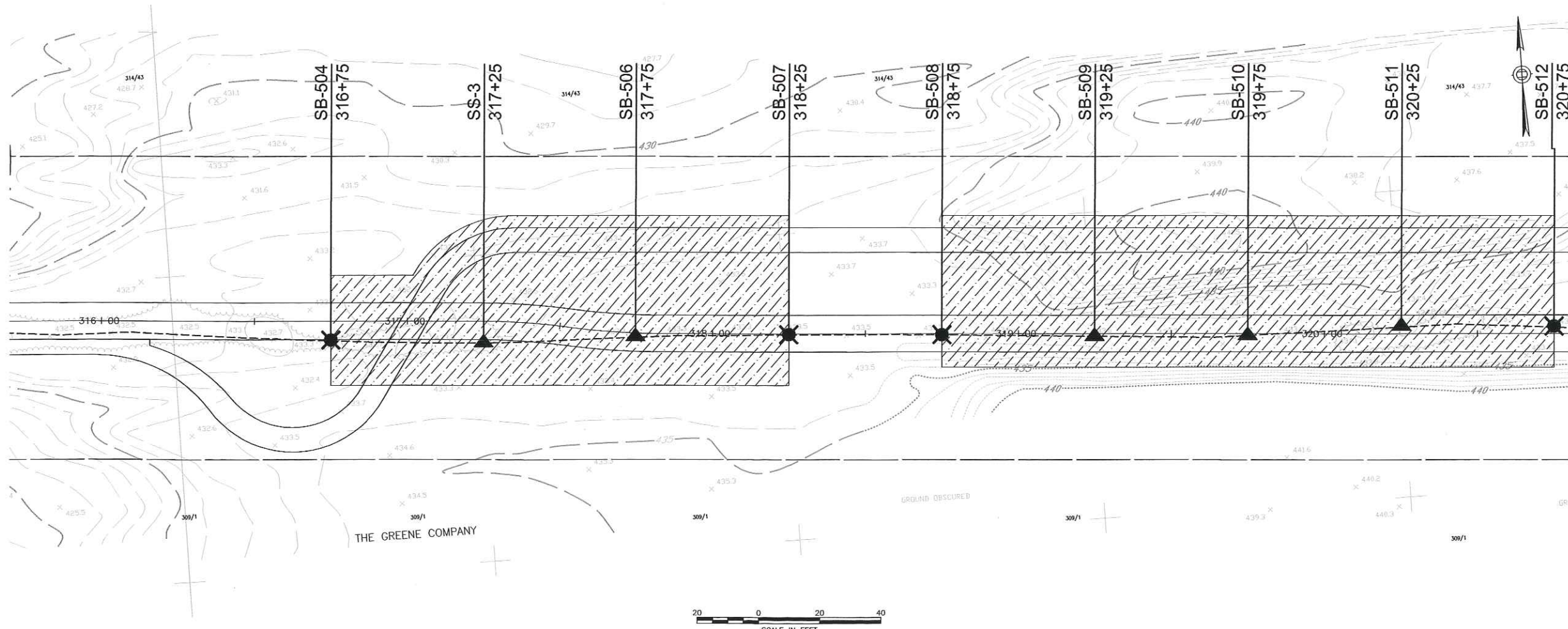
--- EXISTING TRAIL  
— PROPOSED TRAIL


**SAMPLE LOCATION**

▲ EXCEEDING THE RDEC  
⊗ COMPLIANT WITH THE RDEC

**NOTE:**

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**HUGH J. NEENAN**  
No. 4679  
  
REGISTERED PROFESSIONAL ENGINEER

01-17-13

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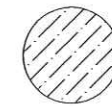
**RHODE ISLAND  
DEPARTMENT OF ENVIRONMENTAL  
MANAGEMENT**  
**TRESTLE TRAIL SHARED-USE PATH  
WEST AND EAST SECTION**  
CONNECTICUT STATE LINE TO  
TOWN FARM ROAD (NEAR)  
COVENTRY, RHODE ISLAND

**PLAN NO. 6**

 392 Wampanoag Trail, East Providence, RI 02915  
Tel: 401.233.2993 Fax: 401.383.0773  
**PRIME Engineering, Inc.**

CHECKED BY PEI DATE JAN 2013 SCALE AS SHOWN

### CAMP WESTWOOD ROAD



APPROXIMATE LOCATION OF EXCAVATION AND FILL WITH STOCKPILED CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.

#### PROPOSED CAP LIMITS

STA. 544+85 TO CAMP WESTWOOD ROAD  
CAMP WESTWOOD ROAD TO STA. 552+00

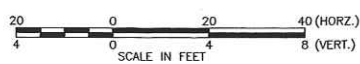
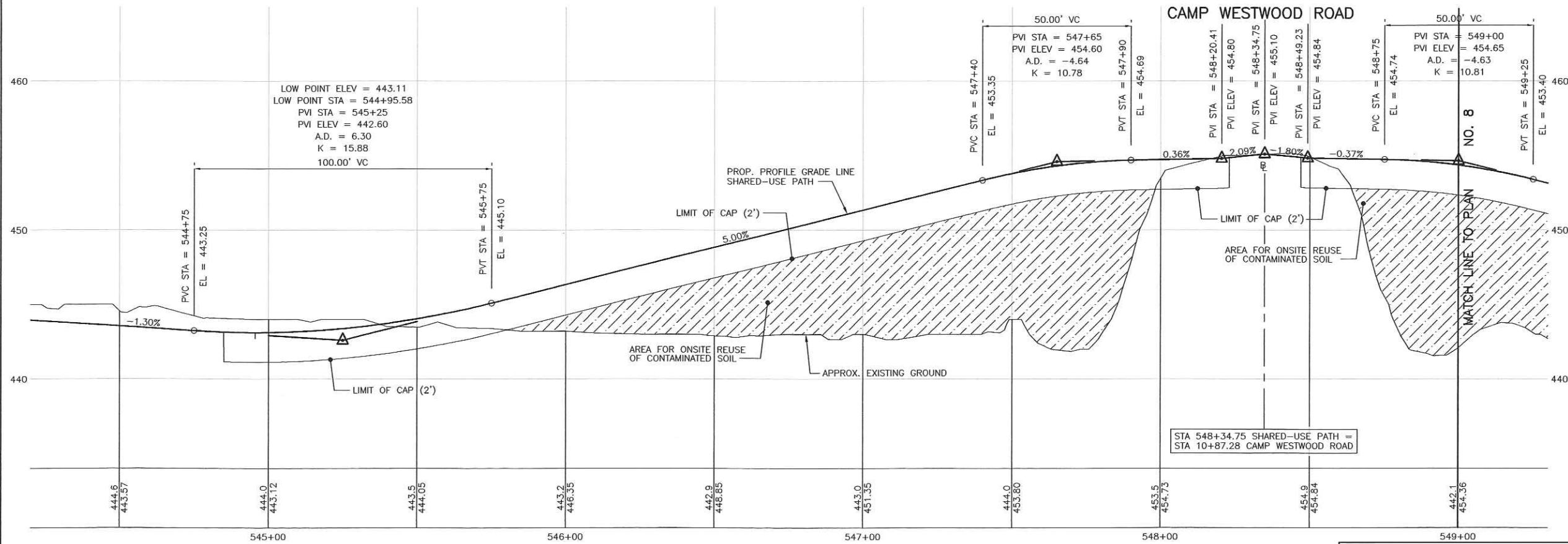
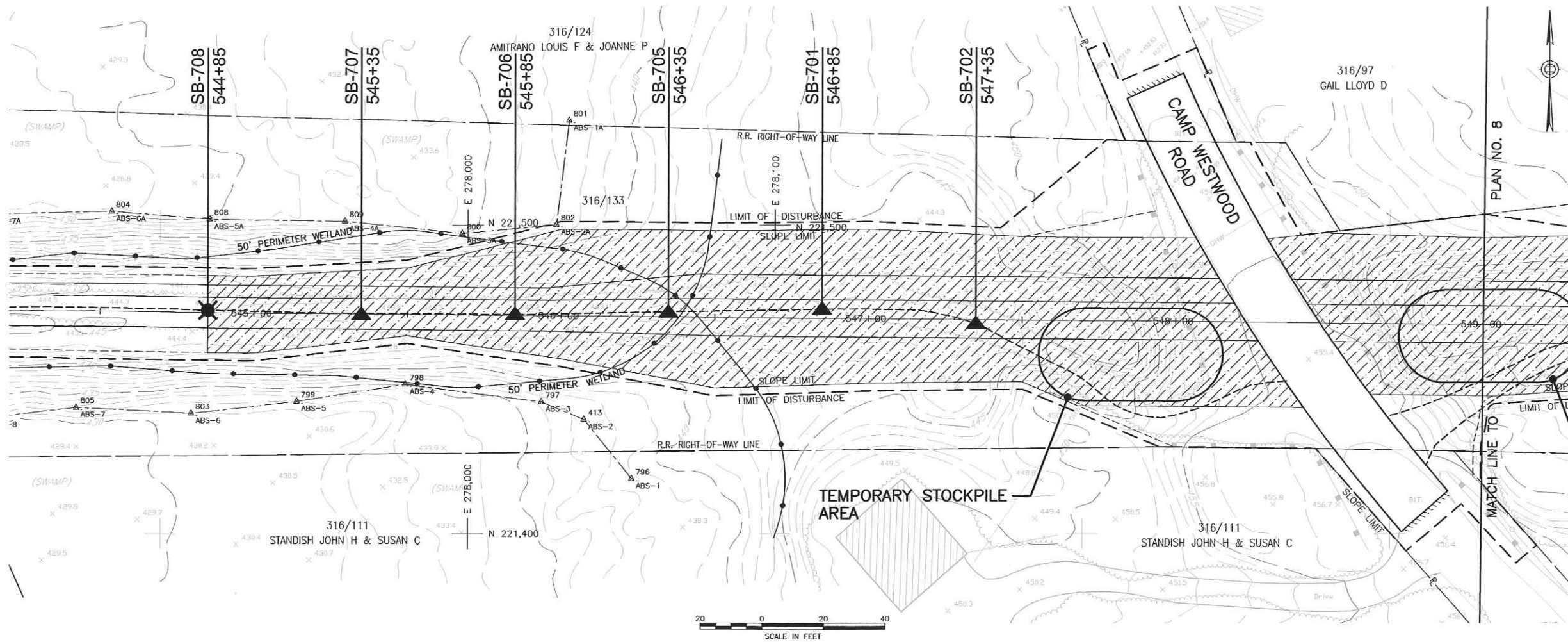
--- EXISTING TRAIL  
— PROPOSED TRAIL

#### SAMPLE LOCATION

▲ EXCEEDING THE RDEC  
⊗ COMPLIANT WITH THE RDEC

#### NOTE:

2' OF CLEAN FILL WILL BE PLACED ABOVE CONTAMINATED SOIL. CUT AMOUNTS WILL VARY BY SEGMENT. CONTAMINATED SOIL MAY BE TEMPORARILY STOCKPILED AT HOPKINS HOLLOW ROAD OR CAMP WESTWOOD ROAD PER SECTION 4 OF THE APPROVED REMEDIAL ACTION WORK PLAN.



**HUGH J. NEENAN**  
No. 4679  
REGISTERED PROFESSIONAL ENGINEER

01-17-13

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**RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**  
**TRESTLE TRAIL SHARED-USE PATH WEST AND EAST SECTION**  
CONNECTICUT STATE LINE TO TOWN FARM ROAD (NEAR)  
COVENTRY, RHODE ISLAND

**PLAN NO. 7**

CHECKED BY PEI DATE JAN 2013 SCALE AS SHOWN

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Tel: 401.233.2993 Fax: 401.383.0773

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## CAMP WESTWOOD ROAD

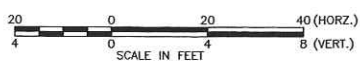
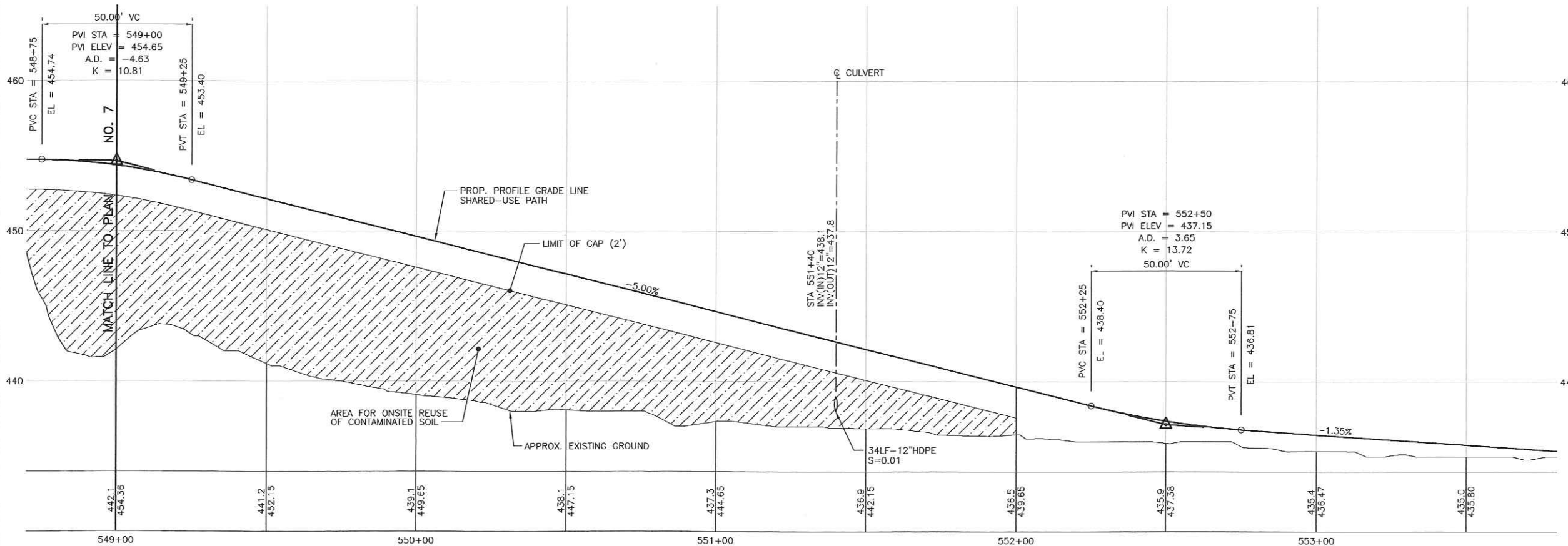
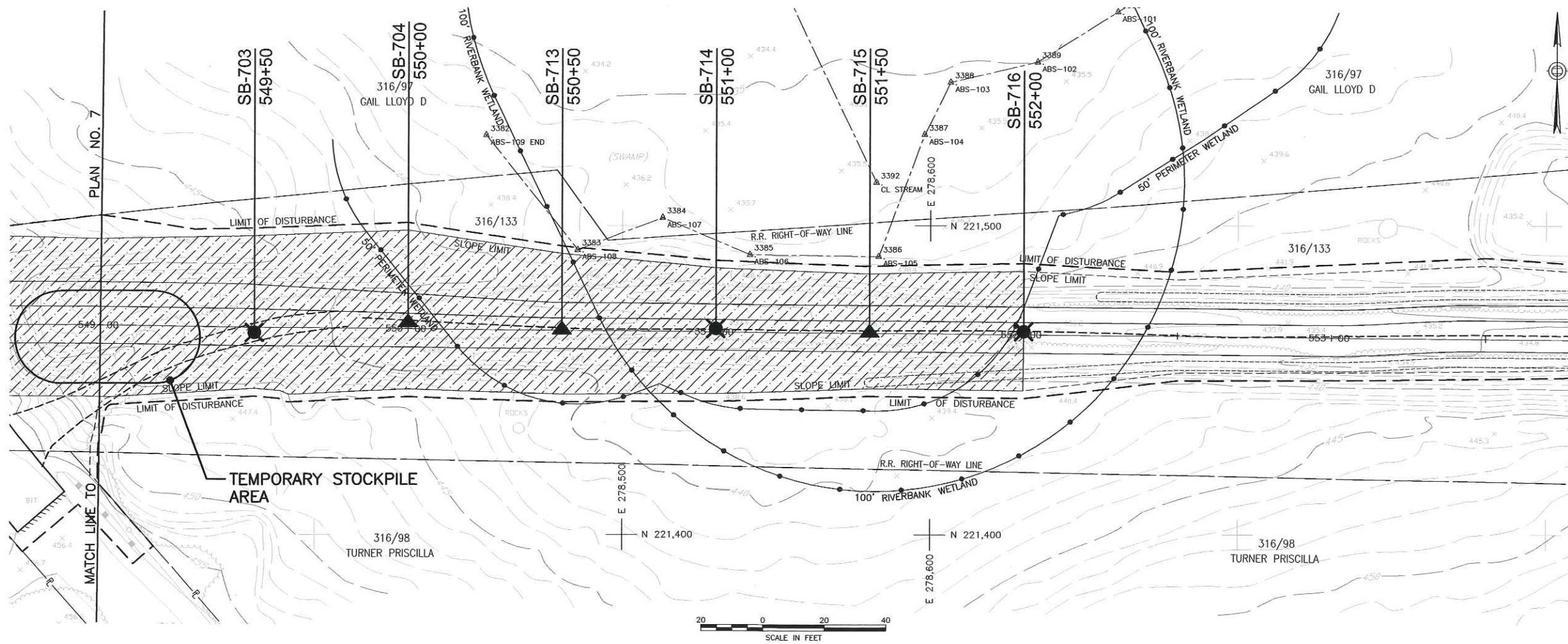
APPROXIMATE LOCATION OF EXCAVATION AND FILL WITH STOCKPILED CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.

PROPOSED CAP LIMITS  
CAMP WESTWOOD ROAD TO STA. 552+00

--- EXISTING TRAIL  
— PROPOSED TRAIL

SAMPLE LOCATION  
▲ EXCEEDING THE RDEC  
● COMPLIANT WITH THE RDEC

NOTE:  
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**HUGH J. NEENAN**  
No. 4679  
REGISTERED PROFESSIONAL ENGINEER

01-17-13

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RI PROCESSING / SS-1



APPROXIMATE LOCATION OF EXCAVATION OF CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.

PROPOSED CAP LIMITS

HILL FARM ROAD to STA. 702+15

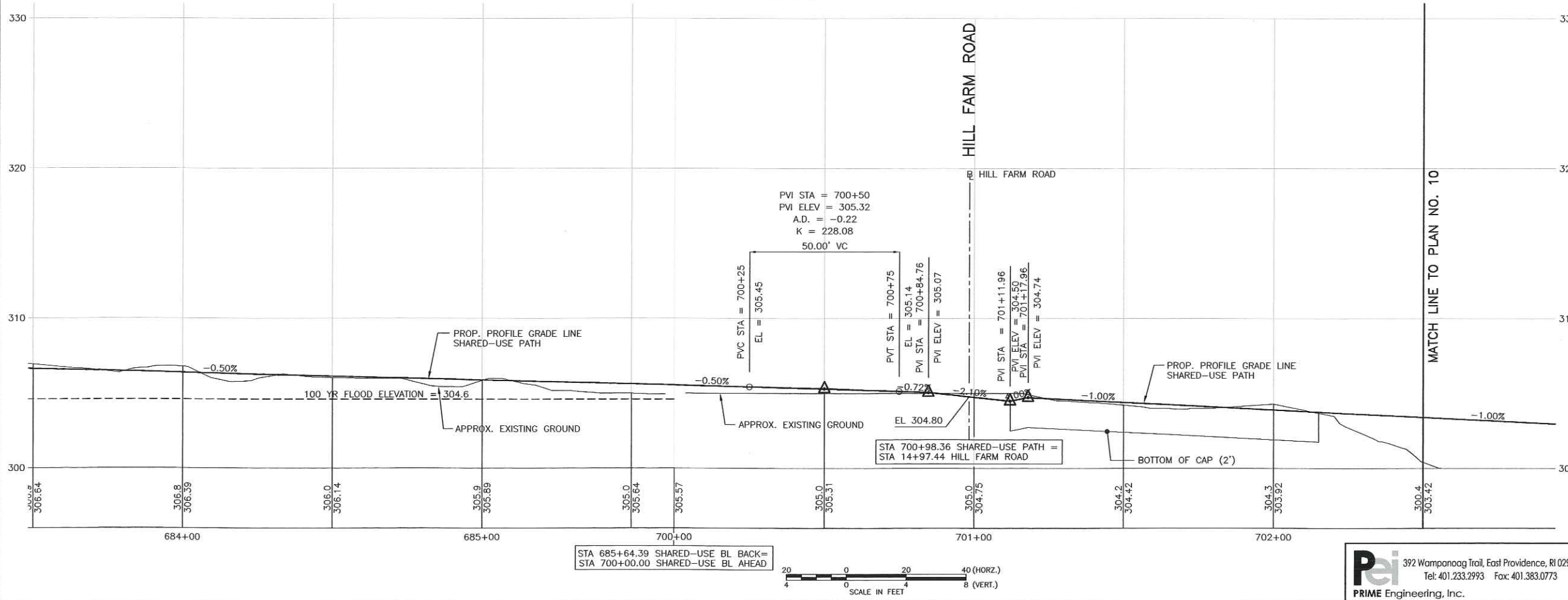
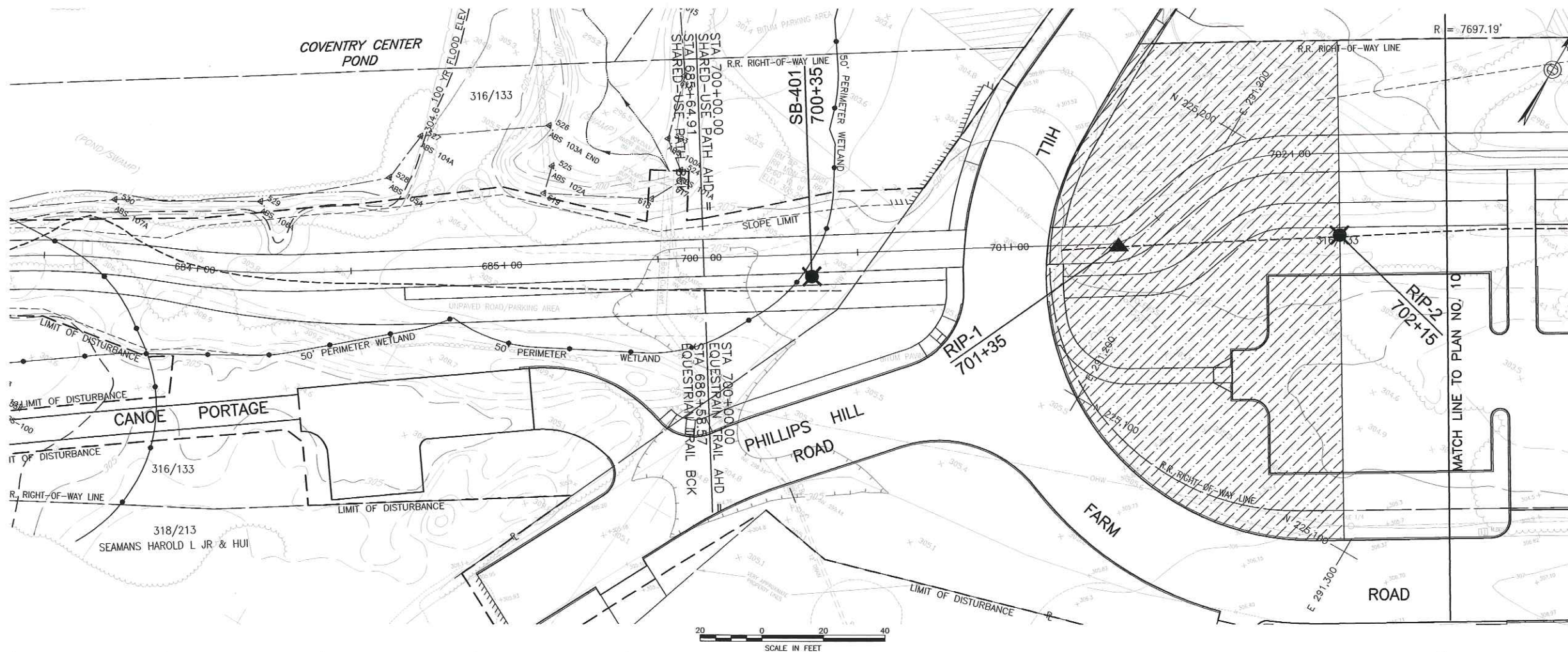
--- EXISTING TRAIL  
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SAMPLE LOCATION

▲ EXCEEDING THE RDEC  
 ● COMPLIANT WITH THE RDEC

NOTE:

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HUGH J. NEENAN  
 No. 4679  
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01-17-13

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RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 TRESTLE TRAIL SHARED-USE PATH WEST AND EAST SECTION  
 CONNECTICUT STATE LINE TO TOWN FARM ROAD (NEAR)  
 COVENTRY, RHODE ISLAND


PLAN NO. 9

PRIME Engineering, Inc.  
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| FED. ROAD DIV. NO. | STATE | FEDERAL AID PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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RI PROCESSING / SS-1

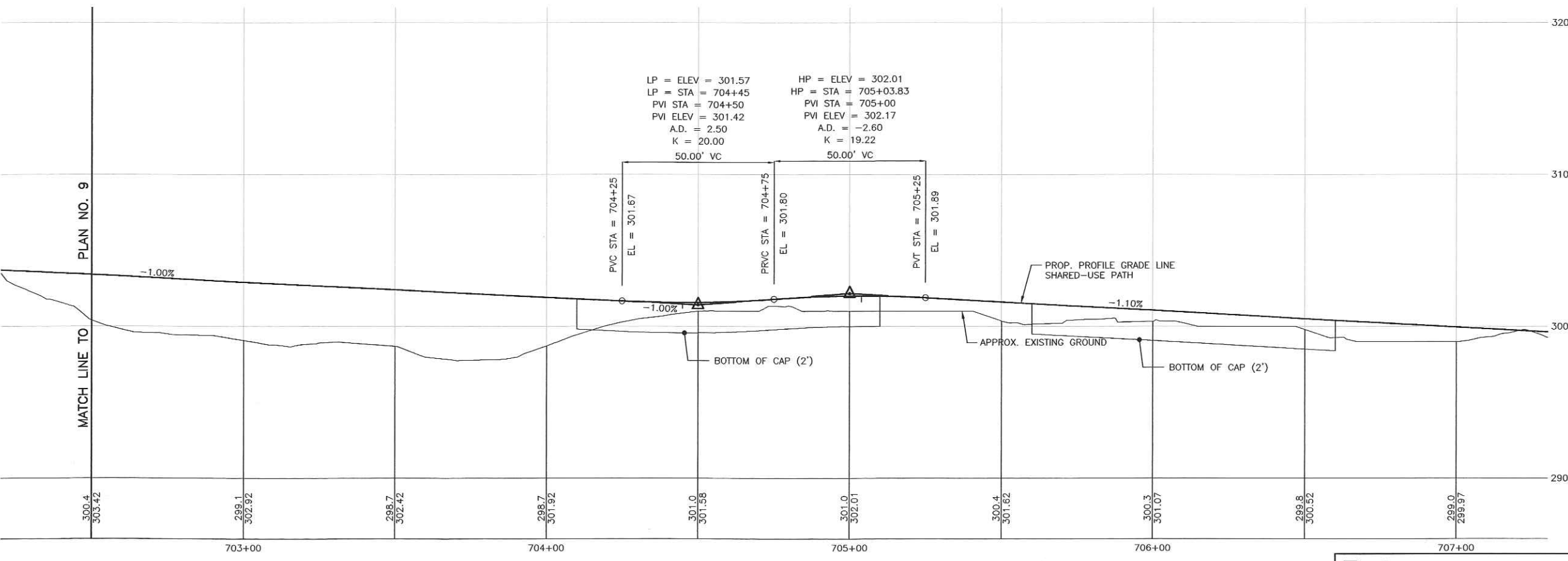
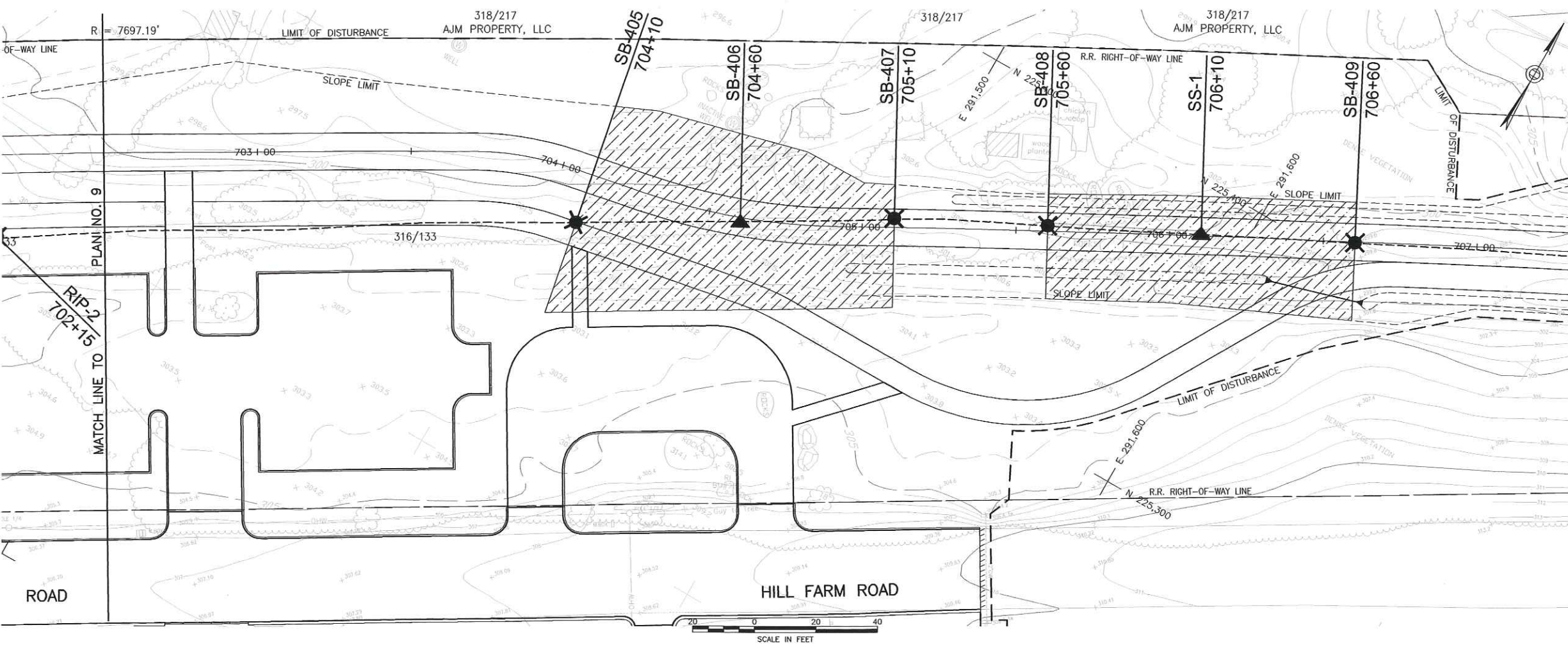
 APPROXIMATE LOCATION OF EXCAVATION OF CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.


PROPOSED CAP LIMITS  
 STA. 704+10 to STA. 705+10  
 STA. 705+60 to STA. 706+60

 EXISTING TRAIL  
 PROPOSED TRAIL

SAMPLE LOCATION  
 EXCEEDING THE RDEC  
 COMPLIANT WITH THE RDEC

NOTE:  
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HUGH J. NEENAN  
  
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RHODE ISLAND  
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 TRESTLE TRAIL SHARED-USE PATH  
 WEST AND EAST SECTION  
 CONNECTICUT STATE LINE TO  
 TOWN FARM ROAD (NEAR)  
 COVENTRY, RHODE ISLAND

PLAN NO. 10

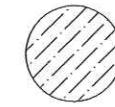
CHECKED BY PEI DATE JAN 2013 SCALE AS SHOWN

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 PRIME Engineering, Inc.



| FED. ROAD DIV. NO. | STATE | FEDERAL AID PROJECT NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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### COVENTRY AUTO BODY



APPROXIMATE LOCATION OF EXCAVATION OF CONTAMINATED SOIL IN ACCORDANCE WITH RIDEM APPROVED REMEDIAL ACTION WORK PLAN.

#### PROPOSED CAP LIMITS

STA. 747+81 to STA. 750+11

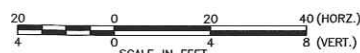
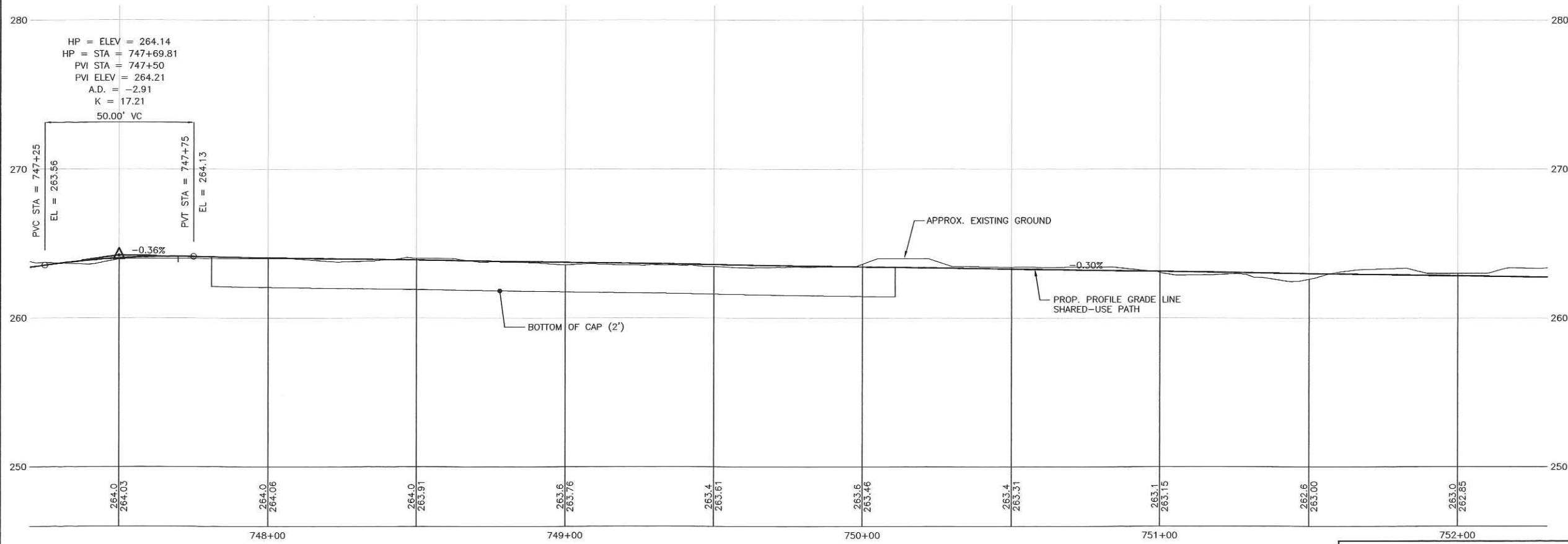
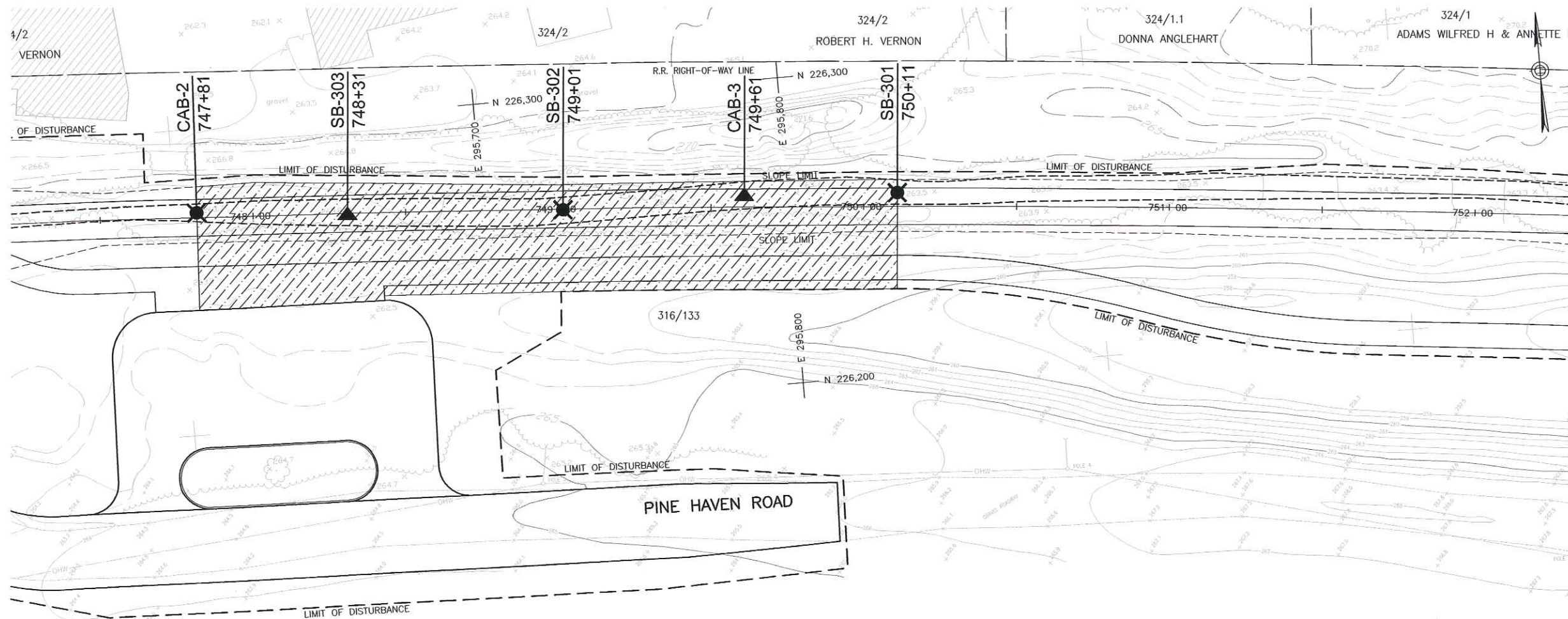
- EXISTING TRAIL
- PROPOSED TRAIL

#### SAMPLE LOCATION

- ▲ EXCEEDING THE RDEC
- ⊗ COMPLIANT WITH THE RDEC

#### NOTE:

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**HUGH J. NEENAN**  
 No. 4679  
 REGISTERED PROFESSIONAL ENGINEER  
 01-17-13

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RHODE ISLAND  
 DEPARTMENT OF ENVIRONMENTAL  
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**TRESTLE TRAIL SHARED-USE PATH  
 WEST AND EAST SECTION**  
 CONNECTICUT STATE LINE TO  
 TOWN FARM ROAD (NEAR)  
 COVENTRY, RHODE ISLAND  
**PLAN NO. 11**  
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**Pei**  
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# Appendix C – Contingency Plan

# *Trestle Trail Shared-Use Path*

Coventry,  
Rhode Island

June 2012

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## Emergency Hospital Route

## Hazardous Substance Fact Sheet for Suspected Site Contaminants

# VHB Site-Specific Contingency Plan/Health and Safety Plan

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## Introduction

This Site-Specific Plan has been prepared by Vanasse Hangen Brustlin Inc. (VHB) for the sole and exclusive use by VHB personnel while working at the Trestle Trail Shared-Use Path in Coventry, Rhode Island (the Site or Trestle Trail). VHB's work at the Site is being conducted at the request of Prime Engineering, Inc. (PEI). Use or reliance upon information provided in this Plan by any party other than VHB, shall be at the User's sole risk.

In preparing this Plan, VHB has obtained and relied upon information from multiple sources to form certain conclusions regarding potential environmental issues at and in the vicinity of the Site. Except as otherwise noted, no attempt has been made to verify the accuracy or completeness of such information.

In preparing this Plan, no attempt has been made to assess the compliance status of any past or present Owner or Operator of the Site with any federal, state, or local laws or regulations.

The guidance presented in this Plan is based solely upon information gathered to date. Should further environmental or other relevant information be developed at a later date, VHB may modify the report and its conclusions

## General Site Information

**Site Name:** Trestle Trail Shared-Use Path  
Coventry, Rhode Island

**Table 1**  
**Emergency Information and Local Resources Trestle Trail, Coventry, Rhode Island**

| Public and Private Resources           | Telephone Numbers              |
|--|--------------------------------|
| Ambulance                              | 911                            |
| Kent Hospital                          | 911 or (401) 737-7000          |
| Coventry Fire Department (Emergency)   | 911                            |
|  | Business Calls: (401) 825-7800 |
| Coventry Police Department (Emergency) | 911 or (401) 826-1100          |
| National Poison Control Center         | 800-682-9211                   |
| DIG SAFE Reporting Line                | 888-344-7233                   |

**Nearest Hospital:** Kent Hospital  
455 Toll Gate Road  
Warwick, Rhode Island  
Phone: 401-737-7000

**Directions (from approximate center of project at Routes 102 and 117):**

1. Start going south on Victory Highway/ Route 102 (0.8 mi);
2. Take second left onto Harkney Hill Road (5.5 mi);
3. Turn right onto Nooseneck Hill Road/ RI-3 (1.4 mi.);
4. Merge onto I-95 North (8.4 mi.);
5. Take Exit 10, RI-117, toward Warwick/ West Warwick (0.5 mi);
6. Turn left onto Centerville Road/ RI-117 (0.4 mi);
7. Take second right onto Leon E Whipple Road (0.2 mi);
8. Turn left onto Toll Gate Road/ RI-115 (0.06mi); and
9. Kent Hospital is on the right.

A map depicting the emergency hospital route is attached.

## Site/Hazard Overview



### Site Description and History

Trestle Trail is located in rural Coventry, Rhode Island along the bed of a former railroad track. The Site consists of a ten-mile corridor of property that is proposed for

use as a developed bike, walking, and equestrian path located at the Connecticut-Rhode Island border and extending approximately one mile beyond the Flat River Reservoir Bridge in Coventry, Rhode Island.

The Site was built for use as a railroad in 1854 by the Hartford, Providence, and Fishkill Railroad. It operated until 1968. From 1968 to the present, the Site has been used by area residents as an unpaved path for walking, biking, and horseback riding. Evidence of motorized dirt bikes and all terrain vehicles being used at the Site has been observed during Site Investigation activities.



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## Regulatory Exceedances Summary

Soil at certain locations at the Site contains hazardous materials at concentrations that represent Method 1 exceedances as defined by the *Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations)*. Specifically, the following exceedances have been documented:

- Residential Direct Exposure Criteria – arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i) perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene.
- Industrial/ Commercial Direct Exposure Criteria – arsenic and benzo(a)pyrene.
- GB Leachability Criteria – none.
- Upper Concentration Limits – none.
- GA Groundwater Objectives – arsenic, beryllium, chromium, lead and nickel.

---

## Tasks

VHB will document encapsulation of the impacted Site soil in accordance with the RIDEM-approved Remedial Action Work Plan (RAWP). The work will be conducted pursuant to VHBs Remedial Action Work Plan and the RIDEM Remedial Approval Letter.

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## Hazard Assessment

### Hazards of Concern (Check as many as apply):

|  |   |   |
|--|---|---|
| <input checked="" type="checkbox"/> Heat Stress                                  | <input checked="" type="checkbox"/> Excavation/Trenching                              | Radiological  |
| <input checked="" type="checkbox"/> Cold Stress                                  | <input checked="" type="checkbox"/> General Construction                              | Biological  |
| Explosion/ Flammable<br>Confined Space   | <input checked="" type="checkbox"/> Inorganic Chemicals<br>Volatile Organic Chemicals | <input checked="" type="checkbox"/> Noise<br>Corrosives |
| <input checked="" type="checkbox"/> Physical Hazards<br>Other (Specify): Unknown |   |   |

The dangers that may be attributed to these hazards are discussed below.



---

### Heat Stress

During the summer months, warm weather may become a health factor. Personnel working on-site may have to wear protective clothing and respirators, which would increase the chance of workers suffering from heat-related problems. The situation will be monitored on days when the ambient temperature exceeds 70°F. Workers must be briefed on the signs and symptoms of heat-related problems and on preventive measures.

The three levels of Heat Stress are:

- Heat Cramps
- Heat Exhaustion
- Heat Stroke

Symptoms of heat cramps include painful muscle spasms. Treatment includes providing liquid with electrolytes.

Weakness, fatigue, dizziness, heavy sweating, headache, nausea, fainting and pale, cool moist skin are all symptoms of heat exhaustion. Treatment includes resting in a cool place and providing plenty of liquids with electrolytes if the person is conscious; if unconscious, get medical help immediately.

Symptoms of heat stroke are very dry, hot skin, mottled blue or red appearance, confusion, convulsions, rapidly rising temperature and unconsciousness. If any person experiences these symptoms get medical attention immediately. **Heat stroke is a life-threatening emergency.**





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## Cold Stress

During the winter months, cold weather may become a health factor. Personnel working on-site may have to wear protective clothing to protect themselves from wind and other cold weather exposures that may lead to hypothermia and frostbite. The situation will be monitored periodically on days when the ambient temperature is below 32° F, or when the local weather forecasting agencies suggest a wind chill factor of 32° F or lower. Workers must be briefed on the signs and symptoms of frostbite and on preventive measures if work is performed when the ambient temperature is below 32°.

Frostbite occurs when skin tissue and blood vessels are damaged from exposure to temperatures below 32 degrees Fahrenheit. It most commonly affects the toes, fingers, earlobes, chin, cheeks and nose, body parts that are often left uncovered in cold temperatures. Frostbite can occur gradually or rapidly. The speed with which the process progresses depends upon how cold or windy the temperature conditions are and the duration of exposure to those conditions.

Frostbite has three stages of progression:

- Frostnip
- Superficial Frostbite
- Deep Frostbite

***Frostnip*** – In this stage, the individual experiences a pins and needles sensation with the skin turning very white and soft. No blistering occurs. This stage produces no permanent damage and may be reversed by soaking in warm water or breathing warm breath on the affected area.

***Superficial Frostbite*** – In this stage, blistering may occur. The skin feels numb, waxy and frozen. Ice crystals form in the skin cells and the rest of the skin remains flexible.

***Deep Frostbite*** – This is the most serious stage of frostbite. In this stage, blood vessels, muscles, tendons, nerves and bone may be frozen. This stage can lead to permanent damage, blood clots and gangrene, in severe cases. No feeling is experienced in the affected area and there is usually no blistering. Serious infection and loss of limbs frequently occurs after frostbite reaches this stage. However, even with deep frostbite, some frozen limbs may be saved if medical attention is obtained as soon as possible.

Frostbite risk can be reduced by practicing the following:

- Wear several layers of clothing when in extremely cold conditions since the air pockets between the layers will help to retain warmth.



- Limit the use of alcohol and smoking tobacco. Alcohol causes the blood to cool quickly and tobacco inhibits circulation to extremities.
- Avoid going outdoors during extremely cold weather.
- When outside, shield the face and other body parts from the cold wind and temperatures by wearing protective clothing, scarves, earmuffs, gloves, etc.
- Wear waterproof skin moisturizer on exposed areas.
- Do not spend extended periods in extreme temperatures when exhausted, or when wet.

If, after being in extremely cold conditions, any of the following are experienced, seek emergency care.

- skin swelling
- loss of limb function and absence of pain
- drastic skin color changes
- blisters
- slurred speech
- memory loss



---

## Physical Hazards

The operation of heavy equipment poses hazards. Physical hazards may be associated with the malfunction, misuse, or improper operation of such equipment. Personnel not directly involved with equipment operation should stand a safe distance away from the machinery. **Personnel should wear hard-hats whenever working within established work zones.** Personnel should be aware of these physical obstacles at all times and take the necessary precautions to avoid them while at the Site.

The Site may contain rough or unfamiliar terrain that can lead to injury. Slips, trips and falls are the most common accidents caused by varying terrain. These accidents may result in cuts, bruises, and sprains. Falls may result in broken bones. Carefully examine unfamiliar terrain. Look out for holes, undergrowth and open water. Avoid banks of rivers, creeks and ponds.

Wear boots with good ankle support and good traction. Wear long pants, long sleeved shirts and socks in the field. Do not wear shorts, tube tops, muscle shirts or sandals.



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## **Excavation/Trenching**

Personnel should stand upwind of soil excavations to avoid being exposed to any dust generated during the excavation. During soil excavation operations, if any unusual odors or other unexpected observations are noted, all work must stop immediately. All personnel will retreat to a safe distance away from the excavation, and the VHB project manager will be notified of the situation before any additional action is taken.



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## **General Construction**

The greatest potential hazard at most sites is related to the operation of heavy equipment, especially in the case of malfunction, misuse or improper operation. Personnel not directly involved with equipment operation should stand a safe distance away from the machinery. Personnel should wear hard-hats and steel toe boots when working near heavy equipment and any time there is a potential hazard from overhead or falling objects.



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## **Inorganic Chemicals and Semi-Volatile Organic Compounds**

Contaminants may be encountered in the form of soil dusts containing various metals (lead, arsenic, antimony etc.) and semi-volatile organic compounds (anthracene, benzo(a)pyrene, chrysene, etc.). Care shall be taken not to disturb dusty areas during the site investigation. In the event that visible emissions are released during site activities, dust control in the form of applying water or a water mist shall be sufficiently sprayed to reduce visible emissions.



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## **Volatile Organic Compounds**

VOCs were not detected in the soil at the Site. However VOCs may be encountered during soil excavations that extend beyond the water table or groundwater sampling activities. Total VOCs will be routinely monitored in ambient air within various work zones on the property if excavations reach any impacted groundwater.



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## **Noise**

Elevated noise levels may be encountered during the project due to construction equipment. Persons working in close proximity to construction equipment shall wear sufficient hearing protection. This equipment may include foam earplugs or

foam earmuffs. Hand signals must be used for communication in these situations. Hand signals shall be established and practiced prior to donning protective hearing equipment.




---

## Chemical Exposures

**Table 3** summarizes the more toxic chemicals known or suspected to be present at the site, including the associated symptoms of acute exposure to such contaminants. Since additional unsuspected hazards may exist at the Site, periodic evaluation of site conditions will be performed during all on-site activities.

**Table 3  
Known and Suspect Chemical Contaminants in Soil, Trestle Trail, Coventry, Rhode Island**

| Chemical Contaminants    | Potential Hazards  | OSHA PEL (8-Hour TWA)   | NIOSH REL (10-Hour TWA)* |
|--------------------------|--|-------------------------|--------------------------|
| Arsenic                  | Toxic by inhalation, skin absorption, skin and/or eye contact and ingestion. Affects liver, kidneys, skin, lungs and lymphatic system.   | 0.010 mg/m <sup>3</sup> | 0.002 mg/m <sup>3</sup>  |
| PAHs (as coal tar pitch) | Toxic by inhalation and skin contact. May cause dermatitis, bronchitis and is a carcinogen. Affects respiratory system, skin, bladder and kidneys. Lung, kidney and skin cancer. | 0.2 mg/m <sup>3</sup>   | 0.1 mg/m <sup>3</sup>    |

\* - See Appendix A and Appendix C (NIOSH Pocket Guide) for chemical properties and hazards. Minimize workplace exposure concentrations; limit number of workers exposed.




---

## Symptoms of Chemical Exposure

On-site workers should be aware of the specific symptoms of acute chemical exposure listed in **Table 3**. In general, workers should also be aware of some indications of toxic effects of chemical exposure which are described below:

Observable by others:

- Changes in complexion, skin discoloration
- Lack of coordination
- Changes in demeanor
- Papillary response
- Changes in speech pattern
- Difficulty breathing

Non-observable by others:

- Headaches
- Dizziness
- Blurred vision

- Cramps
- Irritation of eyes, skin, or respiratory tract
- Nausea
- Chills




---

## First Aid

General first aid procedures for exposure include, but are not limited to, the following procedures:

- If contaminant contacts the eyes, irrigate immediately with large amounts of water;
- If contaminant contacts skin, wash with soap and water promptly;
- If contaminant is inhaled, move the exposed person to fresh air at once. If the worker's breathing has stopped, perform artificial respiration **ONLY** if appropriately trained and currently certified by the Red Cross or equivalent. Request appropriate medical attention as soon as possible by dialing 911.

On-site personnel shall keep a First-Aid kit at the Site during remediation activities.

---

## On-Site Control

A Site safety officer will be designated to coordinate access control to the work zone. No unauthorized personnel should enter the work zone to perform waste site cleanup activities without appropriate 40 hour OSHA site worker safety training. Control boundaries have been established as follows:

- **Exclusion Zone:** A 10-foot perimeter around the soil excavations will be treated as the Exclusion Zone.
- **Contaminant Reduction Zone:** A designated area outside of the Exclusion Zone will be treated as the Contaminant Reduction Zone. All equipment will be decontaminated in this zone prior to being transferred to the Support Zone.
- **Support Zone:** The remainder of the Site outside of the Contaminant Reduction Zone will be considered the Support Zone.

### On-Site Personnel

|                       |  |
|-----------------------|--|
| Site Safety Officer:  | <u>To be determined</u>                                |
| Regulatory Authority: | <u>RIDEM – Office of Waste Management 401-222-2797</u> |
| State Agency Reps.:   | <u>RIDEM – Tim Fleury 401-222-2797 ext. 7147</u>       |
| Local Agency Reps.:   | <u>N/ A</u>  |
| Contractors:          | <u>To be determined</u>                                |



|   |                           |
|---|---------------------------|
| PEI Contact:                                  | Hugh Neenan, 401-233-2993 |
| Emergency Contact:                            | To be determined          |
| Rescue Team (in entries to IDLH environment): | N/ A                      |
| Decontamination Team:                         | N/ A                      |

## Action Levels and Personnel Protection

The initial level of personnel protection will be Level D.

### Level D personnel protection will include:

- Chemical-resistant or leather gloves.
- Boots/ shoes, leather or chemical-resistant, steel toe and shank.
- Safety glasses or chemical splash goggles (optional unless required for specific job function).
- Hardhat.
- Hearing Protection.

Field monitoring action levels are presented in the following table.

| Location       | Action Level                             | Response  |
|----------------|--|---|
| Exclusion Zone | 10 ppm TVOC in the ambient air           | Shut down operations and verify proper operation of equipment. Allow area to equilibrate with background air quality and then re-start operations. If conditions above 10 ppm persist, VHB personnel should leave the work area and the Project Manager should be contacted. It is possible that personnel may upgrade to level C           |
| Exclusion Zone | 0.1 mg/m <sup>3</sup> particulate        | Shut down operations and verify proper operation of equipment. Allow area to equilibrate with background air quality and then re-start operations. If conditions above the action level persist, VHB personnel should leave the work area and the Project Manager should be contacted. It is possible that personnel may upgrade to level C |
| Exclusion Zone | Any detection of TVOC in the ambient air | Modify work practices to minimize volatilization of contaminants  |
| Exclusion Zone | 5 ppm TVOC                               | Stop work until controls are identified that will reduce volatilization of contaminants. Do not restart work unless authorized by the project manager, department director, and/or the health and safety coordinator.   |

---

## General Safety Requirements

All persons entering and/ or working on the site shall follow the following General Safety Procedures:

- No employee or subcontractor may be allowed on-site without the prior knowledge and consent of the Site Safety Officer and review of these Health and Safety Procedures. All VHB personnel engaged in this project will sign the Health and Safety plan to acknowledge that they have read and understand the Health and Safety Plan.
- There will be no activities conducted on-site without sufficient backup personnel. At a minimum, two persons must be present at the site.
- All contractor or subcontractor personnel shall bring to the attention of the Site Safety Officer or Supervisors any unsafe condition or practice associated with the site activities that they are unable to correct themselves.
- There will be no smoking, eating, drinking, chewing gum or tobacco, or applying cosmetics in the restricted area.
- Hands shall be thoroughly cleaned prior to smoking, eating or other activities outside the restricted area.
- Team members must avoid unnecessary contamination (i.e., walking through known or suspected "hot" zones or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated barrels or equipment).
- Respiratory devices may not be worn with beards, long sideburns, or under other conditions that prevent a proper seal.
- No visitors will be allowed access without the knowledge and consent of the Site Manager and/ or Safety Officer. All visitors will be required to be briefed on safety procedures and will be required to be escorted while on-site.
- All excavations will be conducted in compliance with EPA/ OSHA and RIDEM Standards. Excavation greater than four feet deep which require people to work in the excavation will have sides sloped no greater than 45° (1 to 1) or be shored pursuant to OSHA.

---

## Personal Protective Equipment

Based on an evaluation of potential hazards, the following levels of personal protection have been designated for the applicable work areas or tasks.



| Location                   | Job Function               | Level of Protection |   |   |          |       |
|----------------------------|----------------------------|---------------------|---|---|----------|-------|
| Exclusion Zone             | Excavation Observation     | A                   | B | C | <b>D</b> | Other |
| Contaminant Reduction Zone | Decontamination            | A                   | B | C | <b>D</b> | Other |
| Support Zone               | Field Vehicle and Supplies | A                   | B | C | <b>D</b> | Other |



### Decontamination Procedures

All non-expendable equipment will be cleaned according to Standard Operating Protocols. This protocol includes:

- Rinse with tap water
- Wash with Alconox detergent (or soap ) and water
- Rinse with distilled or tap water

Construction equipemnt leaving the Exclusion Zone will be decontaminated in the Support Zone by brushing soil from the equipment using a long-handled brush. The decontamination procedure for Level D requires the disposal of gloves, tyvek suits (if used), and boot covers (if used) in plastic lined containers on-site. All non-disposal equipment used on-site that becomes contaminated will be cleaned by the protocol referenced above.

### Emergency Medical Care

The following are qualified on-site First Aid Responders and/ or EMTs: None

First Aid equipment is available on-site at the following locations:

First Aid Kit: Located in field vehicle

Emergency EyeWash: Water is kept in the field vehicle

Emergency Shower: Water is kept in the field vehicle

Other (Specify): \_\_\_\_\_



Site Resource(s) and Locations:

Water Supply: Water supplies are available at nearby municipal facilities.

Telephones: Portable telephone in field vehicle

Communication Systems: mobile telephone

Other: \_\_\_\_\_

---

## Emergency Procedures

On-site personnel will use the following standard emergency procedures. These procedures may be modified as appropriate and required for each incident. The Site Safety Officer will be notified of any on-site emergencies and will be responsible for ensuring that the appropriate procedures are followed.

- **Fire/Explosion:** The fire department will be notified and all personnel moved to a safe distance from the involved area.
- **Personal Protective Equipment Failure:** If any site worker experiences a failure or malfunction of personal protective equipment that adversely affects the protection factor, that person and his/ her buddy will immediately leave the Exclusion Zone. Re-entry will not be permitted until the equipment has been repaired or replaced.
- **Other Equipment Failure:** If any other equipment on-site fails to operate properly, the Site Manager and Site Safety Officer will be notified and will then evaluate the effect of such failure on continuing operations. If the failure affects personnel safety or prevents completion of the investigation activities, all personnel will leave the Exclusion Zone until the situation is remedied through appropriate action(s).

---

## Signature Page

I have read, understood, and agree to comply with the provisions set forth in this Site-specific Health and Safety Plan and as reviewed in the Health and Safety Briefing by the Site Safety Officer.

\_\_\_\_\_  
Site Safety Officer

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



**Approved By:**

\_\_\_\_\_   
Project Manager

\_\_\_\_\_   
Signature

\_\_\_\_\_   
Date

---

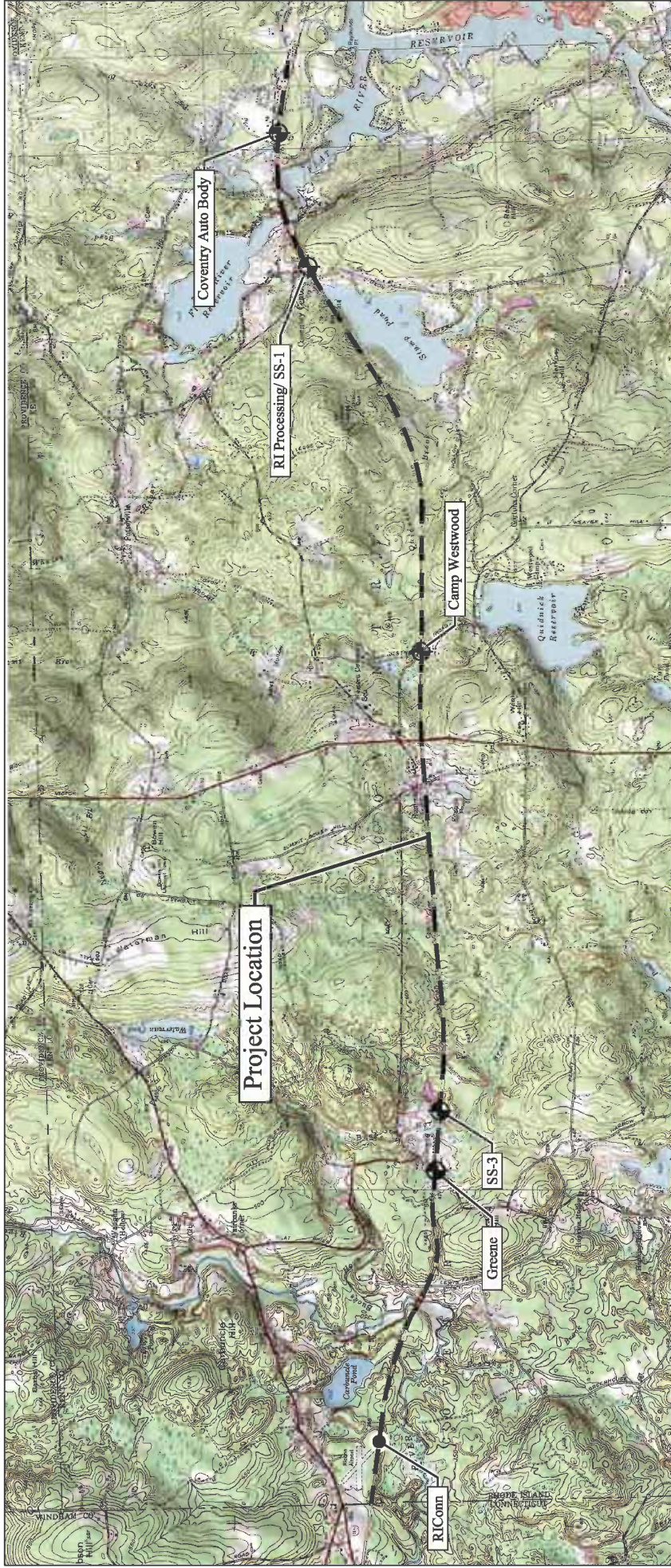
**VHB Site Personnel**

| <b>Signature</b> | <b>Affiliation</b> | <b>Date</b> |
|------------------|--------------------|-------------|
| _____            | _____              | _____       |
| _____            | _____              | _____       |
| _____            | _____              | _____       |
| _____            | _____              | _____       |
| _____            | _____              | _____       |
| _____            | _____              | _____       |
| _____            | _____              | _____       |
| _____            | _____              | _____       |



---

# Figures



Source: USGS Quadrangles



Vanasse Hangen Brustlin, Inc.

Figure 1  
Site Location Map  
Trestle Trail  
Coventry, Rhode Island



---

# Emergency Hospital Route



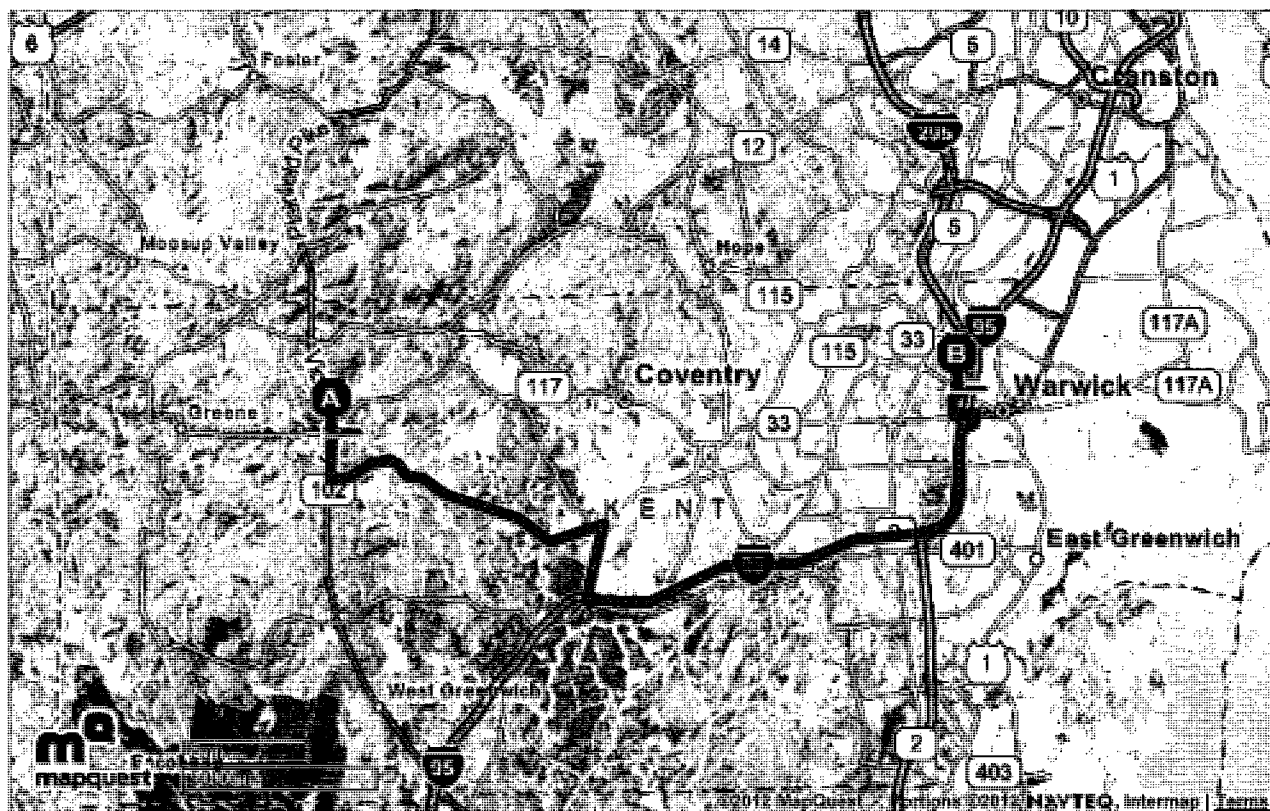
Trip to:  
**455 Toll Gate Rd**  
 Warwick, RI 02886-2759  
 17.55 miles / 25 minutes

Notes

**A** Victory Hwy & Flat River Rd, Coventry, RI 02827

- |          |  |                      |
|----------|--|----------------------|
|          | 1. Start out going <b>south</b> on <b>Victory Hwy / RI-102</b> toward <b>Raven Blvd.</b> <a href="#">Map</a>   | <b>0.8 Mi</b>        |
|          |  | <i>0.8 Mi Total</i>  |
|          | 2. Take the 2nd <b>left</b> onto <b>Harkney Hill Rd.</b> <a href="#">Map</a><br><i>Harkney Hill Rd is 0.3 miles past Raven Blvd</i><br><i>If you reach Kivranta Rd you've gone about 1.1 miles too far</i>                                   | <b>5.5 Mi</b>        |
|          |  | <i>6.3 Mi Total</i>  |
|          | 3. Turn <b>right</b> onto <b>Nooseneck Hill Rd / RI-3.</b> <a href="#">Map</a>   | <b>1.4 Mi</b>        |
|          |  | <i>7.7 Mi Total</i>  |
|          | 4. Merge onto <b>I-95 N</b> via the ramp on the <b>left</b> toward <b>Providence.</b> <a href="#">Map</a><br><i>If you reach Division Rd you've gone a little too far</i>  | <b>8.4 Mi</b>        |
|          |  | <i>16.1 Mi Total</i> |
|          | 5. Take the <b>RI-117</b> exit, <b>EXIT 10</b> , toward <b>Warwick / West Warwick.</b> <a href="#">Map</a>   | <b>0.5 Mi</b>        |
|          |  | <i>16.6 Mi Total</i> |
|          | 6. Turn <b>left</b> onto <b>Centerville Rd / RI-117.</b> <a href="#">Map</a>   | <b>0.4 Mi</b>        |
|          |  | <i>17.0 Mi Total</i> |
|          | 7. Turn <b>right</b> onto <b>Commonwealth Ave.</b> <a href="#">Map</a><br><i>If you reach Hardig Rd you've gone a little too far</i>   | <b>0.3 Mi</b>        |
|          |  | <i>17.3 Mi Total</i> |
|          | 8. Take the 2nd <b>right</b> onto <b>Leon E Whipple Rd.</b> <a href="#">Map</a><br><i>Leon E Whipple Rd is 0.1 miles past Whitehall Dr</i><br><i>If you are on Commonwealth Ave and reach Nicolas Ln you've gone about 0.1 miles too far</i> | <b>0.2 Mi</b>        |
|          |  | <i>17.5 Mi Total</i> |
|          | 9. Turn <b>left</b> onto <b>Toll Gate Rd / RI-115.</b> <a href="#">Map</a>   | <b>0.06 Mi</b>       |
|          |  | <i>17.5 Mi Total</i> |
|          | 10. <b>455 TOLL GATE RD</b> is on the <b>right.</b> <a href="#">Map</a><br><i>If you reach Health Ln you've gone about 0.1 miles too far</i>   |                      |
|          |  |                      |
| <b>B</b> | <b>455 Toll Gate Rd, Warwick, RI 02886-2759</b>  |                      |

Total Travel Estimate: 17.55 miles - about 25 minutes



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# **Hazardous Substance Fact Sheets for Suspected Site Contaminants**





Centers for Disease Control and Prevention  
Your Online Source for Credible Health Information

Search the Pocket Guide

SEARCH

Enter search terms separated by spaces.

**Arsenic (inorganic compounds, as As)**

**Synonyms & Trade Names** Arsenic metal; Arsenia  
Other synonyms vary depending upon the specific As compound. [Note: OSHA considers "Inorganic Arsenic" to mean copper acetoarsenite and all inorganic compounds containing arsenic except ARSINE.]

|                           |   |   |
|---------------------------|---|---|
| CAS No. 7440-38-2 (metal) | RTCS No. CG0525000 (metal) (/niosh-rtcs/CG802C8.html) | DOT ID & Guide 1558 152 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (metal) 1562 152 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=152) (dust) |
|---------------------------|---|---|

|                    |            |  |
|--------------------|------------|--|
| Formula As (metal) | Conversion | IDLH Ca [5 mg/m <sup>3</sup> (as As)]<br>See: 7440382 (/niosh/idlh/7440382.html) |
|--------------------|------------|--|

|   |   |
|---|---|
| <b>Exposure Limits</b><br>NIOSH REL : Ca C 0.002 mg/m <sup>3</sup> [15-minute] See Appendix A (nengapdx.html)<br>OSHA PEL : [1910.1018] TWA 0.010 mg/m <sup>3</sup> | <b>Measurement Methods</b><br>NIOSH 7300 (/niosh/docs/2003-154/pdfs/7300.pdf), 7301 (/niosh/docs/2003-154/pdfs/7301.pdf), 7303 (/niosh/docs/2003-154/pdfs/7303.pdf), 7900 (/niosh/docs/2003-154/pdfs/7900.pdf), 9102 (/niosh/docs/2003-154/pdfs/9102.pdf);<br>OSHA ID105 (http://www.osha.gov/dts/sltc/methods/inorganic/id105/id105.html)<br>See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html) |
|---|---|

**Physical Description** Metal: Silver-gray or tin-white, brittle, odorless solid.

|                     |              |                        |                |                     |        |
|---------------------|--------------|------------------------|----------------|---------------------|--------|
| MW: 74.9            | BP: Sublimes | MLT: 1135°F (Sublimes) | Sol: Insoluble | VP: 0 mmHg (approx) | IP: NA |
| Sp.Gr: 5.73 (metal) | FLP: NA      | UEL: NA                | LEL: NA        |                     |        |

**Metal:** Noncombustible Solid in bulk form, but a slight explosion hazard in the form of dust when exposed to flame.

**Incompatibilities & Reactivities** Strong oxidizers, bromine azide [Note: Hydrogen gas can react with inorganic arsenic to form the highly toxic gas arsine.]

**Exposure Routes** inhalation, skin absorption, skin and/or eye contact, ingestion

**Symptoms** Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen]

**Target Organs** Liver, kidneys, skin, lungs, lymphatic system

**Cancer Site** [lung & lymphatic cancer]

|   |   |
|---|---|
| <b>Personal Protection/Sanitation</b> (See protection codes (protect.html))<br><b>Skin:</b> Prevent skin contact<br><b>Eyes:</b> Prevent eye contact<br><b>Wash skin:</b> When contaminated/Daily<br><b>Remove:</b> When wet or contaminated<br><b>Change:</b> Daily<br><b>Provide:</b> Eyewash, Quick drench | <b>First Aid</b> (See procedures (firstaid.html))<br><b>Eye:</b> Irrigate immediately<br><b>Skin:</b> Soap wash immediately<br><b>Breathing:</b> Respiratory support<br><b>Swallow:</b> Medical attention immediately |
|---|---|

**Respirator Recommendations**

(See Appendix E) ([nengapdx.html](#))

**NIOSH**

**At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:**  
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode  
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

**Escape:**

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted acid gas canister having an N100, R100, or P100 filter.

[Click here \(pgintrod.html#nrp\)](#) for information on selection of N, R, or P filters.

Any appropriate escape-type, self-contained breathing apparatus

[Important additional information about respirator selection \(pgintrod.html#mustread\)](#)

See also: [INTRODUCTION \(/niosh/npg/pgintrod.html\)](#) See ICSC CARD: [0013 \(/niosh/ipcsneng/neng0013.html\)](#) See [MEDICAL TESTS: 0017 \(/niosh/docs/2005-110/nmed0017.html\)](#)

Page last reviewed: April 4, 2011

Page last updated: November 18, 2010

Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Rd. Atlanta, GA 30333, USA  
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348, 24 Hours/Every Day - [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov)





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Enter search terms separated by spaces.

Coal tar pitch volatiles

**Synonyms & Trade Names** Synonyms vary depending upon the specific compound (e.g., pyrene, phenanthrene, acridine, chrysene, anthracene & benzo(a)pyrene). [Note: NIOSH considers coal tar, coal tar pitch, and creosote to be coal tar products.]

|                    |  |   |
|--------------------|--|---|
| CAS No. 65996-93-2 | RTECS No. <a href="#">GF8655000 (/niosh-rtecs/GF841098.html)</a> | DOT ID & Guide 2713 153 <a href="#">(http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx?guide=153)</a> (acridine) |
|--------------------|--|---|

|  |            |  |
|--|------------|--|
|  | Conversion | IDLH Ca [80 mg/m <sup>3</sup> ]<br>See: <a href="#">65996932 (/niosh/idlh/65996932.html)</a> |
|--|------------|--|

|  |  |
|--|--|
| <p><b>Exposure Limits</b><br/>NIOSH REL : Ca TWA 0.1 mg/m<sup>3</sup> (cyclohexane-extractable fraction)<br/>See <a href="#">Appendix A (nengapdx.html)</a> See <a href="#">Appendix C (nengapdx.html)</a><br/>OSHA PEL : TWA 0.2 mg/m<sup>3</sup> (benzene-soluble fraction) [1910.1002] See <a href="#">Appendix C (nengapdx.html)</a></p> | <p><b>Measurement Methods</b><br/><b>OSHA 58</b> <a href="#">(http://www.osha.gov/dts/sltc/methods/organic/org058/org058.html)</a><br/>See: <a href="#">NMAM (/niosh/docs/2003-154/)</a> or <a href="#">OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html)</a></p> |
|--|--|

**Physical Description** Black or dark-brown amorphous residue.

|   |  |  |  |  |  |
|---|--|--|--|--|--|
| Properties vary depending upon the specific compound. |  |  |  |  |  |
|---|--|--|--|--|--|

**Combustible Solids**

**Incompatibilities & Reactivities** Strong oxidizers

**Exposure Routes** inhalation, skin and/or eye contact

**Symptoms** dermatitis, bronchitis, [potential occupational carcinogen]

**Target Organs** respiratory system, skin, bladder, kidneys

**Cancer Site** [lung, kidney & skin cancer]

|  |  |
|--|--|
| <b>Personal Protection/Sanitation</b> (See <a href="#">protection codes (protect.html)</a> ) | <b>First Aid</b> (See <a href="#">procedures (firstaid.html)</a> )<br><b>Eye:</b> Irrigate immediately |
|--|--|

**Skin:** Prevent skin contact  
**Eyes:** Prevent eye contact  
**Wash skin:** Daily  
**Remove:** No recommendation  
**Change:** Daily

**Skin:** Soap wash immediately  
**Breathing:** Respiratory support  
**Swallow:** Medical attention immediately

**Respirator Recommendations**

**NIOSH**

**At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:**

(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode

(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

**Escape:**

(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having an N100, R100, or P100 filter.

[Click here \(pgintrod.html#nrp\)](#) for information on selection of N, R, or P filters.

Any appropriate escape-type, self-contained breathing apparatus

[Important additional information about respirator selection \(pgintrod.html#mustread\)](#)

See also: [INTRODUCTION \(/niosh/npg/pgintrod.html\)](#) See ICSC CARD: [1415 \(/niosh/ipcsneng/neng1415.html\)](#) See MEDICAL TESTS: [0054 \(/niosh/docs/2005-110/nmed0054.html\)](#)

Page last reviewed: April 4, 2011

Page last updated: November 18, 2010

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# Appendix D – Operating Log Template

**Trestle Trail, Coventry, Rhode Island  
OPERATING LOG SUMMARY**

---

**NAME:**

**WEATHER:**

**DATE & TIME:**

**WIND:**

---

**GENERAL CONSTRUCTION ACTIVITY:**

- 

**EARTHWORK ACTIVITY:**

- 

**SOIL AND EROSION MONITORING:**

- 

**DUST MONITORING:**

- 

**HEALTH AND SAFETY MONITORING:**

- 

**CONVERSATION NOTES:**

-



---

# **Appendix E – Draft ELUR and SMP**

**Appendix G**  
**ENVIRONMENTAL LAND USAGE RESTRICTION**

This Declaration of Environmental Land Usage Restriction ("Restriction") is made on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_ by ~~{property owner}~~the State of Rhode Island, and its successors and/or assigns (hereinafter, the "Grantor").

**WITNESSETH:**

WHEREAS, the Grantor \_\_\_\_\_ (name) is the Owner in fee simple of certain real property identified as ~~{specify Plat, Lot(s), address and Town or City}~~Plat 313, Lot 19; Plat 314, Lot 92; and Plat 316, Lots 133 and 142, Trestle Trail Shared-Use Path, Coventry, Rhode Island (the "Property"), more particularly described in Exhibit A (Legal Description) which is attached hereto and made a part hereof;

WHEREAS, the Property (or portion thereof identified in the Class I survey which is attached hereto as Exhibit 2A and is made a part hereof) has been determined to contain soil and/or groundwater which is contaminated with certain Hazardous Materials and/or petroleum in excess of applicable ~~{residential and/or industrial/commercial Direct Exposure Criteria, and/or applicable groundwater objective}~~ criteria pursuant to the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases ("Remediation Regulations");

WHEREAS, the Grantor ~~and the Department have~~ has determined that the environmental land use restrictions set forth below are consistent with the regulations adopted by the Rhode Island Department of Environmental Management ("Department") pursuant to R.I.G.L. § 23-19.14-1 ~~and that this restriction shall be a Conservation Restriction pursuant to R.I.G.L. § 34-39-1 et. seq. and shall not be subject to the 30 year limitation provided in R.I.G.L. § 34-4-21;~~

WHEREAS, the Department's written approval of this Restriction is contained in the document entitled: ~~{Remedial Decision Letter/ Settlement Agreement/ Order of Approval/ Remedial Approval Letter}~~ issued pursuant to the Remediation Regulations;

WHEREAS, to prevent exposure to or migration of Hazardous Substances and to abate hazards to human health and/or the environment, and in accordance with the ~~{Remedial Decision Letter/ Remedial Agreement/ Order of Approval/ Remedial Approval Letter}~~, the Grantor desires to impose certain restrictions upon the use, occupancy, and activities of and at the ~~{Property/Contaminated-Site}~~;

WHEREAS, the Grantor believes that this Restriction will effectively protect public health and the environment from such contamination; and

WHEREAS, the Grantor intends that such restrictions shall run with the land and be binding upon and enforceable against the Grantor and the Grantor's successors and assigns.



NOW, THEREFORE, Grantor agrees as follows:

A. **Restrictions Applicable to the ~~{Property/Contaminated-Site}~~:** In accordance with the ~~{Remedial Decision Letter/ Remedial Agreement/ Order of Approval/ Remedial Approval Letter}~~, the use, occupancy and activity of and at the ~~{Property/Contaminated-Site}~~ is restricted as follows:

~~i. No residential use of the ~~{Property/Contaminated-Site}~~ shall be permitted that is contrary to Department approvals and restrictions contained herein;~~

Formatted: Bullets and Numbering

~~ii. i. No groundwater at the ~~{Property/Contaminated-Site}~~ shall be used as potable water;~~

Formatted: Bullets and Numbering

~~iii. ii. \_\_\_\_\_ No soil at the ~~{Property/Contaminated-Site}~~ shall be disturbed in any manner without written permission of the Department's Office of Waste Management, except as permitted in the Remedial Action Work Plan (RAWP) or Soil Management Plan (SMP) approved by the Department in a written approval letter dated \_\_\_\_\_ (date) Exhibit B and attached hereto;~~

Formatted: Bullets and Numbering

~~[iv. Humans engaged in activities at the ~~{Property/Contaminated-Site}~~ shall not be exposed to soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved Direct Exposure Criteria set forth in the Remediation Regulations;~~

~~[v. Water at the ~~{Property/Contaminated-Site}~~ shall be prohibited from infiltrating soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved leachability criteria set forth in the Remediation Regulations;~~

~~[vi. No subsurface structures shall be constructed on the ~~{Property/Contaminated-Site}~~ over groundwater containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department approved GB Groundwater Objectives set forth in the Remediation Regulations;~~

~~[vii. The engineered controls at the ~~{Property/Contaminated-Site}~~ described in the ~~{RAWP or Soil Management Plan (SMP)}~~ contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained to prevent humans engaged in ~~{residential or industrial/commercial}~~ activity from being exposed to soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department-approved ~~{residential or industrial/commercial}~~ Direct Exposure Criteria in accordance with the Remediation Regulations; and~~

~~[viii. The engineered controls at the ~~{Property/Contaminated-Site}~~ described in the ~~{RAWP or Soil Management Plan} SMP~~ contained in Exhibit B attached hereto shall not be disturbed and shall be properly maintained so that water does not infiltrate soils containing Hazardous Materials and/or petroleum in concentrations exceeding the applicable Department-approved leachability criteria set forth in the~~

Remediation Regulations.

**B. No action shall be taken, allowed, suffered, or omitted at the ~~{Property/Contaminated-Site}~~ if such action or omission is reasonably likely to:**

- i. Create a risk of migration of Hazardous Materials and/or petroleum;
- ii. Create a potential hazard to human health or the environment; or
- iii. Result in the disturbance of any engineering controls utilized at the ~~{Property/Contaminated-Site}~~, except as permitted in the Department-approved ~~{RAWP or SMP}~~ contained in Exhibit B.

**C. Emergencies:** In the event of any emergency which presents a significant risk to human health or to the environment, including but not limited to, maintenance and repair of utility lines or a response to emergencies such as fire or flood, the application of Paragraphs A (iii.-viii.) and B above may be suspended, provided such risk cannot be abated without suspending such Paragraphs and the Grantor complies with the following:

- i. Grantor shall notify the Department's Office of Waste Management in writing of the emergency as soon as possible but no more than three (3) business days after Grantor's having learned of the emergency. (This does not remove Grantor's obligation to notify any other necessary state, local or federal agencies.);
- ii. Grantor shall limit both the extent and duration of the suspension to the minimum period reasonable and necessary to adequately respond to the emergency;
- iii. Grantor shall implement reasonable measures necessary to prevent actual, potential, present and future risk to human health and the environment resulting from such suspension;
- iv. Grantor shall communicate at the time of written notification to the Department its intention to conduct the Emergency Response Actions and provide a schedule to complete the Emergency Response Actions;
- v. Grantor shall continue to implement the Emergency Response Actions, on the schedule submitted to the Department, to ensure that the ~~{Property/Contaminated-Site}~~ is remediated in accordance with the Remediation Regulations (or applicable variance) or restored to its condition prior to such emergency. Based upon information submitted to the Department at the time the ELUR was recorded pertaining to known environmental conditions at the ~~{Property/Contaminated-Site}~~, emergency maintenance and repair of utility lines shall only require restoration of the ~~{Property/Contaminated-Site}~~ to its condition prior to the maintenance and repair of the utility lines; and
- vi. Grantor shall submit to the Department, within ten (10) days after the completion of the Emergency Response Action, a status report describing the emergency activities that have been completed.

**D. Release of Restriction; Alterations of Subject Area:** The Grantor shall not make, or allow or suffer to be made, any alteration of any kind in, to, or about any portion of the ~~{Property/Contaminated-Site}~~ inconsistent with this Restriction unless the Grantor has received the Department's prior written approval for such alteration. If the Department determines that the proposed alteration is significant, the Department may require the amendment of this Restriction. Alterations deemed insignificant by the Department will be approved via a letter from the Department. The Department shall not approve any such alteration and shall not release the ~~{Property/Contaminated-Site}~~ from the provisions of this Restriction unless the Grantor demonstrates to the Department's satisfaction that Grantor has managed the ~~{Property/Contaminated-Site}~~ in accordance with applicable regulations.

**E. Notice of Lessees and Other Holders of Interests in the ~~{Property/Contaminated-Site}~~:** The Grantor, or any future holder of any interest in the ~~{Property/Contaminated-Site}~~, shall cause any lease, grant, or other transfer of any interest in the ~~{Property/Contaminated-Site}~~ to include a provision expressly requiring the lessee, grantee, or transferee to comply with this Restriction. The failure to include such provision shall not affect the validity or applicability of this Restriction to the ~~{Property/Contaminated-Site}~~.

**F. Enforceability:** If any court of competent jurisdiction determines that any provision of this Restriction is invalid or unenforceable, the Grantor shall notify the Department in writing within fourteen (14) days of such determination.

**G. Binding Effect:** All of the terms, covenants, and conditions of this Restriction shall run with the land and shall be binding on the Grantor, its successors and assigns, and each Owner and any other party entitled to control, possession or use of the ~~{Property/Contaminated-Site}~~ during such period of Ownership or possession.

**H. Inspection & Non-Compliance:** It shall be the obligation of the Grantor, or any future holder of any interest in the ~~{Property/Contaminated-Site}~~, to provide for annual inspections of the ~~{Property/Contaminated-Site}~~ for compliance with the ELUR in accordance with Department requirements.

[An officer or Director of the company with direct knowledge of past and present conditions of the ~~{Property/Contaminated-Site}~~ (the "Company Representative"), or] A qualified environmental professional will, on behalf of the Grantor or future holder of any interest in the ~~{Property/Contaminated-Site}~~, evaluate the compliance status of the ~~{Property/Contaminated-Site}~~ on an annual basis. Upon completion of the evaluation, the ~~{Company Representative or}~~ environmental professional will prepare and simultaneously submit to the Department and to the Grantor or future holder of any interest in the ~~{Property/Contaminated-Site}~~ an evaluation report detailing the findings of the inspection, and noting any compliance violations at the ~~{Property/Contaminated-Site}~~. If the ~~{Property/Contaminated-Site}~~ is determined to be out of compliance with the terms of the ELUR, the Grantor or future holder of any interest in the ~~{Property/Contaminated-Site}~~ shall submit a corrective action plan in writing to the Department within ten (10) days of receipt of the evaluation report, indicating the plans to bring the ~~{Property/Contaminated-~~

~~Site~~ into compliance with the ELUR, including, at a minimum, a schedule for implementation of the plan.

In the event of any violation of the terms of this Restriction, which remains uncured more than ninety (90) days after written notice of violation, all Department approvals and agreements relating to the ~~Property/Contaminated-Site~~ may be voided at the sole discretion of the Department.

I. **Terms Used Herein:** The definitions of terms used herein shall be the same as the definitions contained in Section 3 (DEFINITIONS) of the Remediation Regulations.

IN WITNESS WHEREOF, the Grantor has hereunto set (his/her) hand and seal on the day and year set forth above.

~~[Name of Person(s), company, LLC or LLP]~~ The State of Rhode Island

By: \_\_\_\_\_  
Grantor (signature) \_\_\_\_\_ Grantor (typed name)

STATE OF RHODE ISLAND  
COUNTY OF \_\_\_\_\_

In (CITY/TOWN), in said County and State, on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_,  
before me Personally appeared \_\_\_\_\_, to me known and known by me to be the  
party executing the foregoing instrument and (he/she) acknowledged said instrument by  
(him/her) executed to be (his/her) free act and deed.

Notary Public: \_\_\_\_\_

My Comm. Expires: \_\_\_\_\_



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## Exhibit A – Legal Description

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## Exhibit 2A – Class I Survey

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**Exhibit B – Soil Management  
Plan**

**DRAFT**

## SOIL MANAGEMENT PLAN

### Trestle Trail Shared-Use Path

Coventry, Rhode Island

RIDEM Case #2010-019

This *Soil Management Plan* (SMP) has been prepared to establish procedures that will be followed during future construction activities that will require the need to manage soils excavated from or at the subsurface for the Trestle Trail Shared-Use Path in Coventry, Rhode Island (the Site). The SMP will be initiated by notification to the Rhode Island Department of Environmental Management (RIDEM) in accordance with the Environmental Land Usage Restriction (ELUR) for the property.

### BACKGROUND

This SMP was prepared to address future earthwork or disturbance of the cap following proposed redevelopment in accordance with an ELUR, to be recorded with the Town of Coventry Land Evidence Records. Previous investigations indicated elevated levels of arsenic and polycyclic aromatic hydrocarbons (PAHs) above the RIDEM Method 1 criteria for both residential and industrial/ commercial uses as described below.

### ENVIRONMENTAL EVALUATION

Previous environmental investigations performed at the Site have identified soil that contains substances that exceed the RIDEM Method 1 Criteria as defined by the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations). Specifically, the following exceedances have been documented in Site soil:

- Residential Direct Exposure Criteria –arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i) perylene, benzo(k)fluoranthene, chrysene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene;
- Industrial/ Commercial Direct Exposure Criteria –arsenic and benzo(a)pyrene.
- GB Leachability Criteria – none.
- Upper Concentration Limits – none.
- GB Groundwater Objectives – arsenic, beryllium, chromium, lead and nickel.

### REMEDIAL PROGRAM

The remedial objectives for this Site are to reduce possible direct exposure to impacted soils via encapsulation and institutional controls. Remedial actions will be conducted concurrently with Site redevelopment. The East Section is proposed for construction in the Spring of 2013. The West Section is currently at the 10 percent design stage.

The following encapsulation methods are proposed for the Trestle Trail in its entirety; however, cap option 1 is the preferred remedy for the East Section. Options 2 through 4 will only be used for the East Section if in-field conditions prevent installing two feet of clean fill. Deviation from the two feet of clean fill for the East Section must be approved by the State's design engineer (Prime Engineering, Inc.) prior to implementation to ensure proper function of the trail design. Portions of the property are restricted by an ELUR and are capped with one of the following RIDEM approved caps:

1. Two feet of clean fill.
2. A continuous layer of four inches of pavement placed in two perpendicular lifts above six inches of a clean fill sub-grade.
3. One-foot of clean fill underlain with a geotextile fabric.
4. Four inches of stone dust underlain by eight inches of clean fill and a geotextile fabric. The ELUR requires that the capped portions of the property remain in place.

Refer to **Figure 1** entitled, “Engineered Controls Details” for specifications of the RIDEM approved cap in addition to the attached Prime Engineering, Inc. Plans entitled “Typical Section” and Plans 1 through 11.

### **SOIL MANAGEMENT PLAN**

The following procedures will be implemented to govern soil stockpiling, management, and disposal procedures. Soil generated from an excavation on Site may be placed back into its original excavation for backfill upon completion of the excavation. However, so as to maintain known exposure scenarios, every attempt shall be made to backfill the excavation so that the corresponding depth and location of the backfilled soil resembles the depth and location at which the soil originally existed. Alternatively, soil generated from an excavation can be disposed of at an appropriate off-Site disposal/ treatment recycling facility as appropriate. Soil generated from an on-Site excavation will not be used as RIDEM approved capping material without prior analytical testing to confirm that the concentrations of chemical constituents in the soil are below applicable RIDEM Method 1 Residential Direct Exposure Criteria and GB Leachability Criteria.

#### Soil Stockpiling/ Storage Practices

Excess soil generated from an excavation will either be immediately transported off-site to an appropriately licensed facility or will be temporarily stockpiled on two layers of at least 6-mil polyethylene sheeting or placed within Department of Transportation-approved 55-gallon steel drums or similarly secure containers. The containers will be labeled with regard to the classification of the soil (hazardous or non-hazardous), the date of generation, hazards associated with the soil, and the name of a person to contact with questions, in addition to any other state or federal labeling and/ or marking requirements.

If stockpiled on polyethylene sheeting, the stockpile will also be completely covered with at least 6-mil polyethylene sheeting, which will be sufficiently weighed down with solid objects and will be surrounded by hay bales or other equivalent erosion control. All stockpiled soil will be located within a secured, fenced-in area.

#### Soil Stockpile Maintenance

Soil stockpiles shall be inspected daily. Should rips or punctures be observed in either the polyethylene sheeting covering or underlying the piles, repairs will be made immediately. The inspection shall also confirm that, to the extent possible, storm water runoff is diverted away from the piles.

#### Soil Analysis/ Re-Use or Disposal

In order to select the appropriate method of re-use or disposal for excess soil, one soil sample will be collected from the soil stockpile for every 100 cubic yards of excess soil generated. The soil

sample will be analyzed by a Rhode Island-certified laboratory for one or more of the following waste characterization parameters (at a minimum):

| <b>Analyte/Parameter</b>        | <b>Test Method</b>   |
|---------------------------------|--|
| Petroleum hydrocarbons          | EPA Method 8100M   |
| Volatile organic compounds      | EPA Method 8260B   |
| Semi-volatile organic compounds | EPA Method 8270C   |
| Polychlorinated Biphenyls       | EPA Method 8081  |
| Total RCRA Metals               | EPA Method 6010 & 7471A                                    |
| Flashpoint                      | EPA Method 1010M   |
| Corrosivity (pH)                | EPA Method 9045C   |
| Reactivity                      | EPA Methods SW-846 7.3.3.2/ 9014 and SW-846 7.3.4.2/ 376.2 |

Additional parameters may be required by the receiving facility. Upon receipt of the results of laboratory analysis, appropriate methods of soil re-use or disposal will be determined. If necessary, the soil will be transported off-site for disposal under a Uniform Hazardous Waste Manifest, Material Shipping Record & Log, Bill of Lading or other appropriate documentation. All excess contaminated soil will be removed from the Site within 60 days of its date of generation.

#### **BASIC HEALTH AND SAFETY PROCEDURES**

The basic health and safety procedures outlined below will be implemented while performing excavation work at the Site. The procedures are intended as a general guideline for basic, short-term excavation activity conducted at the Site and it should be noted that more site-specific health and safety procedures may be warranted for complex or long-duration subsurface work. Additionally, it must be recognized that others who may be involved in subsurface excavation work at the Site will be responsible for the preparation of their own health and safety procedures.

Based on the type of chemical constituents present at the Site, the potential routes of exposure to workers whose activities involve working with Site soil include dermal contact (absorption) or accidental ingestion of impacted soil, inhalation of air-borne soil particles and the possible injection of contaminants through broken skin. Utilization of the appropriate personal protective equipment (PPE) and the general safety guidelines provided below will minimize the potential for worker exposure to petroleum-impacted media while performing work within the ELUR area.

#### Personal Protective Equipment (PPE)

In general, the level of protection which will be used by workers will be determined by the task which the person is performing; however, at a minimum Level D PPE will be worn at all times while performing excavation activities within the ELUR area. Level D PPE will, at a minimum, consist of the following PPE:

1. Steel-toe work boots with over-boots as needed;
2. Eye protection (safety glasses or chemical splash goggles);
3. Nitrile gloves/ inner latex or PVC gloves; and
4. Hard hat.

#### Site Operating Procedures/ Safety Guidelines

Regardless of the level of PPE necessary to complete work in the ELUR area, the following general health and safety guidelines should be followed during the performance of any excavation activities conducted within the ELUR area. Adherence to these guidelines will reduce the potential worker exposure to impacted media.

1. All work conducted on-Site shall be conducted in accordance with the requirements of this SMP (including all health and safety procedures);
2. The location of all utilities in the vicinity of the excavation will be established prior to beginning work;
3. All spectators will remain at a safe distance from the excavation and under no circumstances will approach the excavation or designated Exclusion Zone without the consent of the Safety Officer for the Site;
4. A pre-work meeting will be conducted at the beginning of each day to discuss the health and safety procedures;
5. Practice contamination avoidance: never sit down or kneel in an excavation; never lay equipment on the ground; avoid obvious sources of contamination such as puddles; and avoid unnecessary contact with objects in an excavation;
6. Be alert to any unusual changes in your physical condition; never ignore warning signs. Notify the responsible employee as to suspected exposures;
7. Conduct field monitoring (i.e. dust, photoionization detector (PID), personal, etc) as established by the Health & Safety Plan and consistent with action levels for contaminants of concern in effect at the time work is performed.
8. All equipment used in an excavation shall be properly cleaned prior to leaving the Site and in accordance with Health & Safety Plan and maintained in good working order. Equipment shall be inspected for signs of defect and/ or contamination before use;
9. Eating, drinking, chewing gum, and smoking shall be prohibited in active excavation areas; and,
10. The discovery of any condition that would suggest the existence of a situation more hazardous than anticipated shall result in the evacuation of site personnel from the excavation and the re-evaluation of the hazard and the level of protection.

#### In Case of Serious Exposure of Injury

In the event of serious chemical exposure or worker injury, the appropriate employee will immediately be alerted. This person will follow the steps indicated below:

1. Summon appropriate emergency response agency by using the emergency phone numbers provided as provided below. Convey the following information:
  - a. Nature of emergency,
  - b. Location of victim,
  - c. Specific information about exposure or accident (gases, chemical, asphyxiation, etc.),
  - d. Length of exposure, and
  - e. Hazards which may be involved in rescue or treatment.
2. If taken to a hospital, notify the hospital of the background of the problem:
  - a. Potential for hospital contamination,
  - b. Any contaminated items and the nature of the contamination, and
  - c. Estimated arrival time.

#### Emergency Phone Numbers

Emergency telephone numbers and the directions to the nearest hospital are included below.

| <b>Response Agency</b>  | <b>Phone Number</b>                                     |
|---|---|
| Ambulance   | 911   |
| Police  | 911   |
| Fire  | 911   |
| RIDEM/ Office of Compliance & Inspection/<br>Emergency Response Program | (401)222-1360 or<br>(401) 222-3070 (non-business hours) |
| USEPA/ Hazardous Materials Spills                                       | (800) 424-8802  |
| Poison Control Center   | (800) 562-8236  |
| Dig Safe (Utility Clearance)  | 1-888-DIGSAFE   |

**Nearest Hospital:** Kent Hospital  
455 Toll Gate Road  
Warwick, Rhode Island  
Phone: 401-737-7000

**Directions:**

1. Start going south on Victory Highway/ Route 102 (0.8 mi);
2. Take second left onto Harkney Hill Road (5.5 mi);
3. Turn right onto Nooseneck Hill Road/ RI-3 (1.4 mi.);
4. Merge onto I-95 North (8.4 mi.);
5. Take Exit 10, RI-117, toward Warwick/ West Warwick (0.5 mi);
6. Turn left onto Centerville Road/ RI-117 (0.4 mi);
7. Take second right onto Leon E Whipple Road (0.2 mi);
8. Turn left onto Toll Gate Road/ RI-115 (0.06mi); and
9. Kent Hospital is on the right.