July 5, 2012

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2012-CH-056

FEDERAL-AID PROJECT NO. FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

1R Impr. to Rte. 44 Cont. - 3C (Chepachet)

From Victory Highway to Tourtellot Hill Road

CITY/TOWN OF Glocester

COUNTY OF PROVIDENCE

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 1 Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

A. Clarification

1. Drainage Trenches

   Upon the completion of the drainage installations, the Contractor shall backfill the trench and provide pavement of the material and depths specified in the trench details included in the Plans prior to opening this area to traffic. Item 410.1000 "Temporary Patching Material/Trenches" has been included in the Proposal as a method to provide a temporary paved surface to allow traffic to pass over the trench prior to the full-depth pavement being placed.

   Item 410.1000 "Temporary Patching Material/Trenches" shall conform to all of the requirements of the RI Standard Specifications for Road and Bridge Construction except the material shall not conform to Class I-1 Surface Course. The material shall conform to the Contract Special Provision Code 401.9920 "Modified Class 12.5 with Pay Factors" except that the "Modification and Pay Factor" requirements will be waived for this use only.

2. Pre-Bid Conference

   A copy of the Pre-Bid Conference sign-in sheet is attached to this Addendum No. 1.

B. Contract Documents

1. CS-Pages
   a. Index Pages CS-i and CS-ii

Remove Index Pages CS-i and CS-ii in their entirety and replace them with revised Index Pages CS-i (R-1) and CS-ii (R-1) attached to this Addendum No. 1. The Page numbers have been revised and the Appendices have been added.

b. Page CS-1

Remove Page CS-1 in its entirety and replace it with revised Page CS-1 (R-1) attached to this Addendum No. 1. The List of Contract Drawings has been revised.

c. Page CS-3

Remove Page CS-3 in its entirety and replace it with revised Page CS-3 (R-1) attached to this Addendum No. 1. The first paragraph has been revised.

d. Page CS-5 and CS-5a

Remove Page CS-5 in its entirety and replace it with Page CS-5 (R-1) and add new Page CS -5a attached to this Addendum No. 1. The last paragraph of the Sequence of Construction and the last paragraph of the Special Requirements for Traffic Maintenance and Protection have been revised.

e. Page CS-6

Remove Page CS-6 in its entirety and replace it with revised Page CS-6 (R-1) attached to this Addendum No. 1. The Contract Submittals List has been revised.

f. Pages CS-8 and CS-9

Remove Pages CS-8 and CS-9 in their entirety and replace them with revised Pages CS-8 (R-1) and CS-9 (R-1) and add new Page CS-9a attached to this Addendum No. 1. The Earthwork section has been revised.

g. Page CS-11

Remove Page CS-11 in its entirety and replace it with revised Page CS-11 (R-1) attached to this Addendum No. 1. The paragraphs discussing the Soil Management Plan have been revised.

h. Appendix "G" Soil Management Plan (SMP)

Remove Page ES-1, Page ES-2, Page ES-3, Page 1, Page 2, Page 3, and Page 4 in their entirety and replace them with Page ES-1 (R-1), Page ES-2 (R-1), Page ES-3 (R-1), Page 1 (R-1), Page 2 (R-1), Page 3 (R-1), and Page 4 (R-1) attached to this Addendum No. 1. Numerous changes have been made to this document.

i. Appendix "K" Remedial Action Work Plan (RAWP)

Add the Remedial Action Work Plan (RAWP) with the Table of Contents Pages i through iii and including all of the contents of the RAWP to the Contract Documents.

2. JS-Pages

a. Index Page JS-iii

Remove Index Page JS-iii in its entirety and replace it with revised Index Page JS-iii (R-1) attached to this Addendum No. 1. Code 202.99 Screening Common Borrow for Contamination has been added.

b. Pages JS-8, JS-9, JS-10 and JS-10a

Remove Pages JS-8, JS-9, and JS-10 in their entirety and replace them with revised Pages JS-8 (R-1), JS-9 (R-1), JS-10 (R-1), and new Page 10a attached to this Addendum No. 1. Numerous changes have been made to this specification.

c. Page JS-11

Remove Page JS-11 in its entirety and replace it with revised Page JS-11 (R-1) attached to this Addendum No. 1. The Description has been revised.

Remove Pages JS-14 and JS-15 in their entirety and replace them with revised Pages JS-14 (R-1) and JS-15 (R-1) attached to this Addendum No. 1. The contaminated soil classifications and Basis of Payment have been revised.

e. Pages JS-48 and JS-49

Remove Pages JS-48 and JS-49 in their entirety and replace them with revised Pages JS-48 (R-1) and JS-49 (R-1) attached to this Addendum No. 1. The Materials and Construction Methods and the Basis of Payment paragraphs have been revised.

f. Pages JS-50, JS-51, JS-52 and JS-52a

Remove Pages JS-50, JS-51, and JS-52 in their entirety and replace them with revised Pages JS-50 (R-1), JS-51 (R-1), JS-52 (R-1) and new Page JS-52a attached to this Addendum No. 1. The Construction Methods and Basis of Payment have been revised.

g. Pages JS-53, JS-54, JS-55, and JS-55a

Remove Pages JS-53, JS-54, and JS-55 in their entirety and rplace them with revised Pages JS-53 (R-1), JS-54 (R-1), JS-55 (R-1), and new Page JS-55a attached to this Addendum No. 1. The Construction Methods and the Basis of Payment have been revised.

h. Pages JS-117 through JS-121

Insert new Pages JS-117 through JS-121 attached to this Addendum No. 1. Code 202.99 Screening Common Borrow for Contamination has been added.

C. Drawings/Plans - Change/Addition

1. Sheet N0. 11

Remove Sheet No. 11 in its entirety and replace it with revised Sheet No. 11 (R-1) attached to this Addendum No. 1. The removal of isolated trees has been revised to Clearing and Grubbing.

2. Sheet No. 12

Remove Sheet No. 12 in its entirety and replace it with revised Sheet No. 12 (R-1) attached to this Addendum No. 1. The removal of isolated trees has been revised to Clearing and Grubbing.

3. Sheet No. 15

Remove Sheet No. 15 in its entirety and replace it with revised Sheet No. 15 (R-1) attached to this Addendum No. 1. Clearing and Grubbing has been added along the Chepachet Bridge.

4. Sheet No. 24

Remove Sheet No. 24 in its entirety and replace it with revised Sheet No. 24 (R-1) attached to this Addendum No. 1. The removal of isolated trees within the stream restoration has been revised to Clearing and Grubbing.

5. Sheet No. 79

Remove Sheet No. 79 in its entirety and replace it with revised Sheet No. 79 (R-1) attached to this Addendum No. 1. The removal of isolated trees has been revised to Clearing and Grubbing.

D. Distribution of Quantities

01. Table of Contents

Remove Index Pages 1 through 6 in their entirety and replace them with revised Index Page 1 (R-1) through Page 6 (R-1) attached to this Addendum No. 1. The changes are shown in bold text.

02. Page 1

Remove Page 1 in its entirety and replace it with revised Page 1 (R-1) attached to this Addendum No. 1. Code 201.0301 Cutting and Disposing Isolated Trees and Stumps (4"-24") has been revised and Code 201.0305 Complete Removal and Disposal of Isolated Stumps (6" to 24") has been deleted.

03. Page 119

Remove Page 119 in its entirety and replace it with revised Page 119 (R-1) attached to this Addendum No. 1. Code 914.5010 Flagpersons has been revised.

04. Page 122

Remove Page 122 in its entirety and replace it with revised Page 122 (R-1) attached to this Addendum No. 1. Code 923.0105 Drum Barricade Standard 26.2.0 has been revised.

05. Page 123

Remove Page 123 in its entirety and replace it with revised Page 123 (R-1) and new Page 123a attached to this Addendum No. 1. Code 924.0113 Advance Warning Arrow Panel and Code 929.0110 Field Office have been revised.

06. Page 139

Remove Page 139 in its entirety and replace it with revised Page 139 (R-1) and new page 139a attached to this Addendum No. 1. Code T04.5303 14 AWG 3 Conductor Cable has been revised.

07. Page 140

Remove Page 140 in its entirety and replace it with revised Page 140 (R-1) attached to this Addendum No. 1. Code T04.5307 14 AWG 7 Conductor Cable has been revised.

08. Page 143

Remove Page 143 in its entirety and replace it with revised Page 143 (R-1) and new page 143a attached to this Addendum No. 1. Code T05.0400 Break Into Existing Handhole has been revised.

09. Page 150

Remove Page 150 in its entirety and replace it with revised Page 150 (R-1) attached to this Addendum No. 1. Code T14.3431 3 Way 1 Section Span Mounted Signal Head 12 Inch has been deleted.

10. Page 168

Remove Page 168 in its entirety and replace it with revised Page 168 (R-1) and new Page 169 attached to this Addendum No. 1. New Items, Code 201.0321 Clearing and Grubbing and Code T14.3511 1 Way 1 Section Mast Arm Mounted Signal Head 12 Inch, have been added.

RI Department of Transportation
Chief Engineer

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
RHODE ISLAND DEPARTMENT OF TRANSPORTATION

PROJECT: IMPROVEMENTS TO ROUTE 44 - CONTRACT 3C

SUBJECT: PRE-BID CONFERENCE

DATE: 06-28-12

SIGN-IN SHEET

NAME:	COMPANY:	PHONE:
GETACHEW G. MARIAM	RIDOT - HWY DESIGN	222-2023 X-4043
Thomas M Cunningham	Commonwealth Engineers/Consultants	273-6600 ext 122
RAY ROBILLARD	VERIZON	401-727-9538
Ronald Strunz	Commonwealth Eng..	401-273-6600 x 104
JOHN DOUCETTE	"	" x113
STEVEN BAKER	TURINO GROUP	275-5840
KEVIN WHITNEY	AECOM	781-605-7061
Ed Loffredo	J.H. Lynch	401-333-4300
Chris London	J.H. Lynch	401-333-4300
BOB WRIGHT	AECOM	401 861-2766 x20
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Lee Taylor	D'Ambra	401-737-1300 Email LTaylor@D-Ambra.com
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Robert G. Dauphinais	Chepachet Fire Dept.	401-639-1962
RAY GOFF	Glocester	401 568-6206 x2
NATHAN SHAPIRO	RIDOT - CONTRACT	222-3260 x4410
MIKE DAHLQUIST	RIDOT	222-2023 XT 4169
Philip Kaczorowski	RIDOT	222-2023 4047
Cayes' Delpeche	RIDOT	401-441-1685
Vin Palumbo	RIDOT	222-2023 x4049

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INDEX (CONTINUED)
GENERAL PROVISIONS - CONTRACT SPECIFIC
HIGHWAY IMPROVMENTS US ROUTE 44 (PUTNAM PIKE) CONTRACT 3C

1. BRIEF SCOPE OF WORK:

DESCRIPTION: RI Contract No. 2012-CH-056 and RI Federal Aid Project Nos. STP-0044(060), STPG-00444(061), STP-TEA2(044) in the County of Providence and the Town of Glocester is for Highway Improvements to U.S. Route 44 (Putnam Pike) from Victory Highway (Route 102) to Tourtellot Hill Road. The work in this contract will include the placing and maintaining of erosion control devices, earth excavation, handling, hauling, stockpile management and disposal of contaminated soils, stream restoration, construction of a storm water detention basin, drainage structures and pipes, providing loam and the seeding of slopes, landscaping, guardrail, fencing and providing temporary construction signing, flag-persons and traffic control devices necessary for safely maintaining traffic during the construction. Other work consists of saw cutting of pavement along the roadways and the installation of new granite curb, exposed aggregate concrete sidewalks, stamped concrete sidewalks, guardrail, decorative lighting, traffic signal work, highway signage, pavement milling and resurfacing the roadways, pavement markings, and all other incidentals necessary to execute the work, complete and accepted. The Chepachet Bridge No. 100 work will include re-pointing the stone masonry walls and concrete repairs as detailed on the plans. Work outside the indicated project limits consist of slope excavation and grading along Putnam Pike east of Spring Grove Road to improve the intersection sight distance.

2. LIST OF CONTRACT DRAWINGS:

Drawing No.	Description
1	Cover Sheet
2	Standard Plan Symbols and Standard Legend
3-4	Standard Notes 1-2
5	Job Specific Plan Symbols, Legend and Notes
6-8	Typical Sections and Details Nos. 1-3
9-10	Survey Traverse Nos.1-2
11-24	General Plan Nos. 1-14
25	Pavement Marking Layout Plan
26-38	Drainage and Utility Plan Nos. 1-13
39	Sherman Lane Landscape Plan
40	Sherman Lane Stream Restoration Details
41	Detention Basin Landscape Plan and Outlet Structure Details
42-44	Subsurface Utility Location Plan Nos. 1-3
45-48	Lighting Plan Nos. 1-4
49-51	Lighting Details Nos. 1-3
52	Traffic Signal No. 7 Putnam Pike at Money Hill Road
53	Traffic Signal No. 472 Putnam Pike at Chepachet Fire Station
54	Traffic Signal Ornamental Pole Details
55	Highway Performance Monitoring Station 130044
56	Temporary Traffic Control Details
57-78	Cross Sections Nos. 1-22
79	Spring Grove Road Intersection Sight Distance Improvement Plan
80	Spring Grove Road Intersection Sight Distance Cross Section No. 1
81-82	Chepachet Bridge No. 100

Existing utilities have been shown on the Plans using the best available information. The Contractor shall check and verify the location of all existing utilities both underground and overhead in accordance with the "Dig Safe Program Law" enacted by the Rhode Island Legislation Bill No. 79S-291, which became effective July 1, 1979. The Contractor should be aware that not all utility companies subscribe to the Dig Safe Program. It is the Contractor's responsibility to ensure that all utility companies have been notified and all utilities have been marked prior to commencing their work. Any damage to existing utilities caused by the Contractor shall be replaced or repaired to the satisfaction of the Engineer at no additional cost to the State.

The Contractor shall be required to work within the space restrictions of the existing underground and overhead utilities present within the work space. The relocation of utilities are not anticipated or included in the construction of this project. Existing utilities will remain in-place and undisturbed throughout the construction duration without any disruption to service. The Contractor shall adhere to all clearances and safety requirements of the affected utility company.

4. SPECIALTY ITEMS:

The following items are hereby designated as "Specialty Items":

a) Directional, Regulatory and Warning Signs (other than Temporary Construction Signage)
b) Guardrail
c) Fence
d) Lighting
e) Traffic Signals
f) Landscape Plant Materials
g) Pavement Markings
h) Highway Performance Monitoring Station
i) Seeding
j) Testing, Handling and Disposal of Contaminated Soil

5. SEQUENCE OF CONSTRUCTION

A. General Requirements:

1. All work shall be completed in accordance with the Traffic-Related Work Restrictions indicated in the Transportation Management Plan (TMP).

2. All the construction work shall be performed at night time only. The Contractor shall be allowed to do some of the construction work during the day, provided any of the day work will have no adverse impact on traffic flow, will not require lane and shoulder closures and is done outside of the roadway proper.

B. Special Requirements

1. In accordance with the RI Division of Purchases Procurement Regulations, Subsection 12.108.03, Prosecution and Progress, General Requirements, Project Schedule Program, the requirements for this project will be based on Schedule **Level B**.

2. Approval of a work sequence time schedule is required before the start of any construction or other work associated with this contract. The proposed construction sequence and time schedule must consider and address safe vehicle passage through the project areas. No work

necessary to ensure access and public safety. This requirement shall be considered incidental to the construction and shall be performed at no additional cost to the contract. No stockpiling of curb, drainage pipe or other materials shall be allowed along the side of excavations or within the sidewalks of this project. Safe pedestrian access through the project area shall be maintained at all times.

6. SPECIAL REQUIREMENTS FOR TRAFFIC MAINTENANCE AND PROTECTION

In addition to the requirements of the Standard Specifications for Road and Bridge Construction and the special requirements of other sections of this contract document, the following requirements shall be undertaken by the Contractor:

The Contractor is advised that the signs and other traffic control devices shown on the Traffic Control Details in the plan set are minimum requirements, and it is the Contractor's responsibility to supplement these if necessary to ensure public safety. All maintenance and protection of traffic devices must be in place and approved by the Engineer before any construction may commence. All maintenance and protection of traffic shall conform to the latest edition and revisions of the Manual on Uniform Traffic Control Devices (MUTCD).

The Contractor shall install and maintain a Rhode Island Standard 26.2.0 polyethylene drum barricade with appropriate markings at each location where adjustments to utility and drainage structures have been made until resurfacing work has been performed. Other types of protective devices may be used if approved by the Engineer.

The construction operations of this project must be coordinated with the local community public safety officials. In case of any emergency, the Contractor will be required to move equipment and allow the passage of emergency vehicles. Public safety must be considered at all times.

The Contractor shall be responsible for maintaining appropriate construction related signing at all times. All temporary construction signs not appropriate for the construction activity taking place shall be removed, covered, or otherwise concealed. This includes the period between erecting the signs and the start of construction, as well as when a construction phase is completed or suspended.

Drainage trenches: Upon the completion of the drainage installations each night, the Contractor shall backfill the trench and provide pavement of the material and depths specified in the trench details included in the Plans prior to opening this area to traffic.

7. COORDINATION WITH OTHER CONTRACTS

It shall be the Contractor's responsibility to coordinate, cooperate, and schedule his work and all segments thereof with the Engineer, other contractors, property owners, utility owners, and applicable local authorities, so as to minimize impacts to all existing and/or future construction project schedules.

The Town of Glocester will be constructing drainage pipes and structures along Oil Mill Lane and Tanyard Lane with a detention pond during the time of this contract. A 12" drainage pipe from a diversion manhole located at Putnam Pike Sta. 86+02 right constructed as part of this contract will be connected to the Town's stormwater system on Oil Mill Lane. The final connection can not be made until the Town's system is ready to receive stormwater from the State's system as directed by the Engineer.

8. MATERIALS LABORATORY:

No materials laboratory will be included as part of this contract.

9. TRAFFIC FINES IN WORK ZONES:

The Traffic Fines in Work Zone Regulatory Signs detailed on State Standard 27.1.1 shall be located as shown on the detail whenever construction activities are in process and construction personnel are present. Signs shall be located at each work zone. When construction activities and personnel are not

present, the signs shall either be removed from the site or covered.

10. BLASTING RESTRICTIONS:
No blasting shall be allowed on this project.

11. CONTRACT SUBMITTAL LIST (CSL)
Critical to commencement of construction is the requirement to make all necessary submittals as required in the contract documents. The following illustrative CSL is provided as a basis of development for the Contractor's CSL. The illustrative CSL shall not be interpreted by the contractor as an all-inclusive list of required Submittals.

The Contractor shall prepare the CSL, identifying all Submittals (shop drawings, certification, catalog cuts, material certification, material samples, etc.) required under the Contract Documents, Plans, and Specifications. The Departments' Project Schedule for Sampling, Testing, and Certification shall also be referred to as a guide in obtaining all typical material submittal requirements.

ILLUSTRATIVE CONTRACT SUBMITTALS LIST:

a) Traffic Signal and Highway Performance Monitoring Station Materials / Equipment
b) Detention Basin Outlet Structure and Leaching Pit
c) Lighting / Electrical Materials / Equipment
d) Stamped Concrete Sidewalks, Driveways and Crosswalks.
e) Colored/Exposed Aggregate Finish Sidewalks and Driveways
f) Box Culvert
g) New England Style Post and Rail Cedar Fence
h) Contractor selected location(s) for contaminated soil stockpiles
i) Integrally Colored Patching Mortar – Mix Design, Prototype
j) Epoxy Injection Repair Material
k) Temporary Shielding and Netting
l) Documentation of Historic Walls prior to dismantling
m) Common Borrow
n) Sequence of Soil Excavation Plan

12. INCIDENT MANAGEMENT
The Chepachet Fire and Rescue Station driveways are within the work zone of this project. The Contractor's personnel and flagpersons shall be required to coordinate with the police duty officer on-site to stop traffic and or close the roadway so the emergency vehicles may pass through with no unnecessary delays. Furthermore, because this is a volunteer organization, private vehicles will be responding to a call and will require immediate access to the Fire Station.

In the event of an accident, or other unforeseen incident, the Contractor shall positively cooperate with local authorities by providing traffic control devices, personnel, equipment and material as required, both on and off site. The Contractor shall assist in whatever way possible to clear debris from the roadway and maintain traffic flow. Payment for this work shall be on a force account basis. If the personnel are not available on site, they shall be "on call" and able to respond to the site within one hour of notification to the Contractor's appointed representative by phone or in person to the Department of Transportation.

13. CONTRACTOR'S RESPONSIBILITY FOR DAMAGED STORM DRAINS
The Contractor shall use care when working within or in the vicinity of existing drainage structures. Any drainage pipe or culverts damaged during the disposing of, cleaning of, installation of or while making repairs to drainage structures/pipes or culverts or while carrying out any other work on this contract shall be the Contractor's responsibility. Any pipe/culvert damaged by the Contractor while carrying out this contract shall be replaced or repaired by the Contractor to the satisfaction of the Engineer at no additional charge to the Contract.

The Department's latest Training Guidelines for Personnel Responsible for Work Zone Safety & Mobility is available under the "Training" section at http://www.dot.ri.gov/humanresources/index.asp.

17. PAVEMENT CORES

Pavement cores were performed by the RI Department of Transportation on September 13, 1984 and January / February, 1992 for Route 44 (Putnam Pike) from Route 102 in Glocester to Interstate Route 295 in Smithfield, a distance of 8.1 miles. Additional pavement cores were performed on April 23, 2007 and April 6, 2010 within the limits of this contract. The pavement core results are included in Appendix 'B'.

18. BORING LOGS AND GROUNDWATER OBSERVATION WELL DATA

The boring logs and the results of the groundwater observation wells are included in Appendix 'C'.

19. TEST PIT FIELD RESULTS

Test pit field results for the Chepachet Bridge, the Fire Station signal poles and the Level (3) Communications ducts along Putnam Pike east of Tourtellot Hill Road are included in Appendix 'D'. Additional test pit data sheets are included within the plan set.

20. STRUCTURE DISPOSITION LIST

The Structure Disposition List for Plat No. 2744 is included in Appendix 'E'.

21. RIDEM PERMIT

The various RIDEM permits are included in Appendix 'F'. The permits contain conditions and stipulations for the work to which the Contractor shall adhere. All costs associated with these conditions and stipulations shall be included in the various unit prices and lump sum prices bid for the items in the Contract.

The Department has submitted the SMP/RAWP to RIDEM and a permit is anticipated shortly. No work related to this permit shall be started until the RIDEM permit is obtained.

22. EARTHWORK

A Site Investigation Report (SIR), a Soil Management Plan (SMP) and a Remedial Action Work Plan (RAWP) have been developed for this contract. The SIR has been included in Appendix 'J', the SMP has been included in Appendix 'G' and the RAWP has been included in Appendix 'K'.

Consistent with the Soil Management Plan (SMP), all project soils relating to the installation of the new closed drainage piping and catch basin system and wetland stream restoration from "original ground" shall be considered to be regulated, and as such the reuse or disposal of the soil is restricted and shall be monitored (see Section 24, Hazardous Substance Notice). Also, any "Common Borrow" soil imported to the project shall be tested prior to delivery in order to ensure that remedial goals are met.

It is anticipated that excess soil will be generated by the drainage construction excavation operations. This excess soil shall be stockpiled by the Contractor and tested by the RIDOT Environmental Representative prior to being

taken off the project. Once profiled by the RIDOT Environmental Representative, this soil shall be disposed by the Contractor as soil Type 1A, 1B, 2, or 3 as listed below.

It is the responsibility of the Contractor to manage and sequence the excavation and placement of fill such that excavate can be handled, hauled, and stockpiled within the contract limits or at a State approved Contractor selected stockpile location(s). The Contractor shall note that there is limited room within the project limits to store all of the stockpiled material to be excavated. Within 30 days of the Notice to Proceed, and prior to excavation, the Contractor shall submit an Excavation and Fill Management Plan to the Engineer for approval indicating the times, locations, and approximate quantities of excavate that will be generated, the locations of temporary stockpiles and the schedule for placement of fill. The Contractor shall update this plan monthly.

The soil classifications under this Contract shall be as listed below.

Type 1A Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals have been are found to be below the Rhode Island Department of Environmental Management (RIDEM) Residential Direct Exposure Criteria (RDEC) through testing for TPH, VOCS, PAHs, and/or RCRA 8 metals.

Type 1B Project soil in which levels of TPH, VOCs, PAHs, and RCRA 8 metals are found to be above the RIDEM RDEC, but within the limits of the I/CDEC, shall be disposed at a licensed facility. Concentrations are within disposal parameter limits allowed by the Rhode Island Resource Recovery Corporation for materials disposition at the Central Landfill as landfill cover.

Type 2 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM I/CDEC but are within parameters such that the material can be accepted for out-of-state landfill cover or landfilling without pretreatment or that are suitable for asphalt batching. This soil shall be disposed at a licensed facility.

Type 3 Project soil in wich levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to exceed the EPA and/or RIDEM hazardous waste characteristics necessitating disposal as hazardous waste.

The Contractor is directed to Section 24 Hazardous Substance Notice for a description of personnel responsibilities for management of regulated soils.

Appendix 'H' contains the Rhode Island Resource Recovery Corporation (RIRRC) Approved FY 2012 Rate Codes and Prices for disposal fees at the Central Landfill in Johnston, RI. These fees have been used to set the cost of Item 202.9906, Disposal Fee for Contaminated and Hazardous Soils, listed in the Proposal.

Excavations for curb and sidewalk construction and slope grading will be measured for payment as Earth Excavation, Code 202.0100. This soil is deemed to be uncontaminated so is not expected to require stockpiling and testing. However, should it be determined to be contaminated, the procedures provided in the SMP shall be followed.

23. STABILIZATION OF DISTURBED AREAS AND DUST CONTROL

A Storm Water Pollution Prevention Plan (SWPPP) has been approved for this project and included in Appendix 'I'. The Contractor shall aggressively control erosion and sediment in accordance with the SWPPP during all stages of construction. All areas disturbed through excavation, the placement of roadway embankment, excavation, or other incidental work shall be stabilized as indicated in the Plans and Specifications or as directed by the Engineer.

requirements listed below shall be considered incidental to and included with the various items of work in the contract.

A Soil Management Plan has been developed for this contract. The Contractor shall adhere to the following:

1. The RIDOT Environmental Representative shall monitor soil as it is excavated in order to classify it for disposal or reuse. Temporary stockpiles will need to be created by the Contractor as directed by the Engineer.

2. Any soil remaining after the completion of the project that requires disposal will be characterized and disposed of at an approved Industrial/Commercial site or Licensed Disposal Facility consistent with the applicable RIDEM regulations. Regulated soil shall not be taken off the site without express permission from the Engineer.

3. If unusual observations are made during excavation (e.g. drums, free product or unusual odors), excavation shall cease, and the Engineer shall be notified immediately.

The following paragraphs shall also apply:

A. Submit site specific Health and Safety Plan to the Engineer within 15 days after the Notice to Proceed. A Certified Industrial Hygienist must certify the Contractor's plan prior to submittal to the Engineer. The Contractor shall not proceed with any subsurface site work without acceptance of the submitted Health & Safety Plan by the Engineer.

B. The Contractor shall; a) monitor working conditions at all times during construction; b) provide appropriate protective clothing, equipment and facilities for his personnel; c) establish workplace procedures to ensure their safety and; d) enforce the use of these procedures, equipment and facilities in accordance with the following guidelines:

   1. Safety and Health Regulations Promulgated by the U.S. Department of Labor OSHA, 29 CFR 1910 – Occupational Safety and Health Standards, and 29 CFR 1920 – Safety and Health Regulations for Construction.

   2. U.S. Environmental Protection Agency Interim Standard Operating Safety Guidelines – Office of Emergency and Remedial Response – Hazardous Response Support Division, Rev. September 1982.

   3. U.S. Environmental Protection Agency Medical Monitoring Program Guidelines.

   4. The Rhode Island Department of Environmental Management Site Remediation regulations.

C. The Contractor shall develop and implement a Health and Safety Protection program. The procedures for such implementation shall be submitted to the Engineer. The

Executive Summary

The Rhode Island Department of Transportation (RIDOT) is in the process of conducting highway improvements along an approximate one mile distance along Routes 102 and 44 in Glocester, Rhode Island (refer to Figure 1, Site Location Map).

Project Description

The highway improvements for Putnam Pike begin at the Glocester Senior Center located 300 feet west of the Money Hill Road intersection and extend approximately one mile to a point one-quarter mile east of Tourtellot Hill Road. The project also includes a 900-foot section of Money Hill Road from Putnam Pike to the intersection of Victory Highway and continues along the west side of Victory Highway to the Pine Meadow Glocester Housing Authority property.

The three roadways vary in width from 30 to 40 feet and carry one lane of traffic in each direction. The highway improvements proposed will maintain the present widths so there will be no widening or additional travel lanes upon the completion of the project.

The typical section for Putnam Pike north of the Chepachet River Bridge consists of (2) 12' travel lanes and (2) 8' shoulders or parking lanes to match the existing conditions. Putnam Pike south of the bridge to the eastern project limit will consist of (2) 12' travel lanes and (2) 4' shoulders. Money Hill Road will consist of (2) 12' travel lanes and (2) 7' shoulders.

The 30' width of Victory Highway will remain but a new granite curb and a colored and exposed aggregate concrete sidewalk will be added to the west side. This sidewalk will be constructed to provide safe pedestrian access from the Pine Meadow housing complex to Chepachet Village and the Glocester Senior Center. Granite curb and new sidewalks will be installed along both sides of Money Hill Road and Putnam Pike. Decorative lamp posts will be installed along both sides of Putnam Pike within the same limits of the stamped concrete sidewalks.

A new drainage system will be installed along Victory Highway, Money Hill Road and Putnam Pike. A small detention basin will be constructed on the former State Police Barracks land located at 1116 Putnam Pike to provide water quality treatment of the storm water discharge from the roadway areas. A fence with landscaping will be placed around the basin.

An existing culvert under Sherman Lane will be replaced and the stream bed from this point to the culvert headwall behind 1202 Putnam Pike will be graded to remove sediment and restore the flow channel, improve water quality and reduce flooding.

Environmental Investigation

In June 2010, AECOM prepared a Phase II Environmental Site Assessment (ESA) report in order to evaluate if soil proposed to be excavated as part of the highway improvement project was impacted, and to collect data for waste characterization purposes. As part of the Phase II ESA, AECOM oversaw the advancement of seven soil borings (B-1E through B-7E), one of which was completed as a groundwater

monitoring well (B-6E), and the collection of three sediment samples (WS-1 through WS-3) from a wetland area off Sherman Lane (refer to Figure 2, Boring Location Maps). The specific Construction Baseline station locations are as follows:

- B-1E – STA 238+85
- B-2E – STA 239+33
- B-3E – STA 84+16
- B-4E – STA 91+55
- B-5E – STA 92+94
- B-6E – STA 106+42
- B-7E – STA 136+60
- WS-1 – (Refer to General Plan No. 14 wetland stream restoration))
- WS-2 – (Refer to General Plan No. 14 (wetland stream restoration))
- WS-3 – (Refer to General Plan No. 14 (wetland stream restoration))

Composite soil samples collected from each boring, the sediment samples, and the groundwater samples were analyzed for volatile organic compounds (VOCs), Total Petroleum Hydrocarbons (TPH), Priority Pollutant 13 (PP13) Metals plus barium, vanadium, and sodium, chloride, nitrate, and nitrite. The soil and sediment samples were also analyzed for toxicity characteristic leaching procedure (TCLP) lead and mercury, reactive cyanide, and reactive sulfide.

Based on the analytical data, naphthalene in boring B-6E, and TCLP lead in borings B-1E through B-6E exceeded the GA Leachability Criteria; TPH in borings B-3E, B-5E, and B-6E as well as sediment sample WS-2 exceeded both the Residential Direction Exposure Criteria (RDEC) and GA Leachability Criteria; and, total lead in sediment samples WS-1 through WS-3 exceeded both the RDEC and GA Leachability Criteria. The Rhode Island Department of Environmental Management (RIDEM) was notified of the release on May 25, 2010. The July 26, 2010 letter of responsibility (LOR) issued to RIDOT from RIDEM is included as Appendix A.

Soil removed from the proposed drainage and stream restoration excavations will be handled in accordance with this Soil Management Plan (SMP). It is estimated that approximately 6,000 cubic yards of soil will be excavated for the installation of the new closed drainage piping and catch basin system and approximately 400 cubic yards will be excavated for the Sherman Lane wetland stream restoration portion of the project. The soils that will be generated will be excavated, transported to a stockpile location selected by the Contractor and approved by RIDOT, tested and categorized as follows:

Type 1A Project soil that satisfy RIDOT common borrow requirements and are below the RIDEM RDEC through testing for TPH, VOCs, PAHs, and/or RCRA 8 metals, may be reused as backfill. If the soil does not meet either of these requirements and cannot be reused as backfill, the Contractor will remove them from the project site. Approximately 750 cubic yards of Type 1A Soils are expected to be generated.

Type 1B Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM RDEC but within the limits of the I/CDEC shall be disposed at a licensed facility. Concentrations are within disposal parameter limits allowed by the Rhode Island Resource Recovery Corporation for materials disposition at the Central Landfill as landfill cover. Approximately 7,450 Tons of Type 1B Soils are expected to be generated.

Type 2 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM I/CDEC, but are within parameters such that the material can be accepted for out-of-state landfill cover or landfilling without pretreatment or that are suitable for asphalt batching. This soil shall be disposed at a licensed facility. Approximately 3,375 Tons of Type 2 Soils are expected to be generated.

Type 3 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to exceed the EPA and/or RIDEM hazardous waste characteristics (see Type 3 Soil Criteria attachment), necessitating disposal as hazardous waste. This Soil Type has not been encountered on the project, but an item has been inserted in the Proposal in the event that this soil type is encountered.

500 ton (325 cy) maximum stockpiles will be tested and categorized for disposal. The Contractor will be responsible for selecting the disposal facility and obtaining acceptance at a disposal facility.

This document has been prepared by AECOM on behalf of the Commonwealth Engineers & Consultants, Inc. (CE&C) and the Rhode Island Department of Transportation (RIDOT) to fulfill the requirement of a SMP that can be used to direct those employees who will manage excess soil generated during this project.

1.0 Soil Management Plan

1.1 Applicable regulations

The management of soil related to this project shall be managed in accordance with the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations), when applicable, and the Rules and Regulations for Hazardous Waste Management (Hazardous Waste Regulations), if applicable. Management of soil stockpiles and other construction activities shall also be performed in accordance with the *Solid Waste Regulation #1 – General Requirements*, including dust control measures, proper placement and management of temporary stockpile areas. The SMP will focus primarily on the management of the excess soils excavated for the installation of the new closed drainage piping and catch basin system, and wetland stream restoration portion of the project, based on this regulation and those of the State in which the soil will ultimately be placed.

The Contractor is responsible for managing soils in accordance with RIDEM Solid Waste Regulations, Remediation Regulations, Hazardous Waste Regulations, this soil management plan, the contract plans, documents and RIDOT Standard Specifications. RIDOT will field-screen the soils during excavation for stockpiling. Stockpiled soils will be sampled and laboratory testing for profiling purposes by RIDOT.

1.2 Soil Staging Area

The soil excavated from the drainage installation and the stream restoration area will be temporarily stockpiled at a location selected by the Contractor and approved by RIDOT. The RIDOT Environmental Representative will field screen the soils during excavation to assist in making Soil Type designations. Different Soil Types will be stockpiled separately. The RIDOT Environmental Representative will collect samples for analysis of TPH, VOCs, PAHs, and/or RCRA 8 metals from each stockpile at a frequency of one sample per 500 tons to confirm the Soil Type of each stockpile. The results will be forwarded to the Contractor upon receipt. The Contractor, at his own cost, will be responsible for obtaining any additional analytical data required by the selected disposal facility.

The stockpiled soil shall be evaluated by the Contractor for components such as debris, wood, or large cobbles that might require physical separation from the soil prior to shipment. Based on the current understanding of the history, it is anticipated that the material will consist of urban fill soils containing mostly sands and gravel with occasional bricks or small debris. This material is likely to be sent to a landfill for disposal or a soil treatment facility that is permitted to treat and recycle the material.

The soil shall be placed in stockpiles on one layer of 40-mil High Density Polyethylene (HDPE) to separate the stockpile from native soils. The stockpiles will be surrounded by pre-cast concrete barriers on three sides. Temporary fencing and hay bales will surround the entire stockpile area. The stockpiles will be covered at the end of each day and as needed to control dust on dry days

or erosion during rain events. A water mist will also be used to control dust during active work in the stockpile area.

A minimum of three stockpiles shall be maintained; one being transported off-site, one being tested, and one being generated. It is RIDOT's intention to stockpile the wetland stream restoration excavated soil and excess soil separately. Stockpile sizes shall be approximately 325 cubic yards.

If soils are saturated, then a dewatering basin shall be constructed to dewater soils. The Contractor shall, if space is provided, create a basin in the native soils and provide and direct the dewatering operation towards this basin. In addition to dewatering management for excavated soils, the Contractor may need to dewater the excavation trenches to accommodate installation of the closed drainage system. Contractor shall pump water from the excavation and transport the water to the dewatering basin. The Contractor will be allowed to construct a temporary dewatering basin within the permanent drainage easement boundaries on the former State Police Barracks property. Contractor will not be permitted to directly discharge any groundwater encountered during construction into the State storm water drainage system or surrounding wetland prior to removal of 90 percent suspended solids. Contractor shall obtain all necessary permits based on the preferred method of dewatering.

All plastic used to manage the stockpile will be considered solid waste and disposed of at the completion of the project. Disposal of stockpiled soils will be at the Contractors, approved disposal facility and handled in accordance with the Contract Special Provisions.

1.3 Soil Characterization

The soils to be excavated for the installation of the new closed drainage piping and catch basin system, and wetland stream restoration portion of the project will be categorized by the RIDOT Environmental Representative as follows:

Type 1A. Project soil that satisfy RIDOT common borrow requirements and are below the Rhode Island Department of Environmental Management (RIDEM) Residential Direct Exposure Criteria (RDEC) through testing for TPH, VOCs, PAHs, and/or RCRA 8 metals, will be reused as backfill. If the soil does not meet either of these requirements and cannot be reused as backfill, the Contractor will remove them from the project site. Approximately 750 cubic yards of Type 1A Soils are expected to be generated in the vicinity of borings B-1E, B-2E, B-4E, and B-7E.

Type 1B. Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM RDEC but within the limits of the I/CDEC shall be disposed at a licensed facility. Concentrations are within disposal parameter limits allowed by the Rhode Island Resource Recovery Corporation for materials disposition at the Central Landfill as landfill cover. Approximately 7,450 Tons of Type 1B Soils are expected to be generated in the vicinity of borings B-3E, B-5E, WS-1, WS-2, and WS-3.

Type 2. Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM I/CDEC, but are within parameters such that the material can be accepted for out-of-state landfill cover or landfilling without pretreatment or that are suitable for asphalt batching. This soil shall be disposed at a licensed facility. Approximately 3,375 Tons of Type 2 Soils are expected to be generated in the vicinity of boring B-6E.

Type 3. Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to exceed the EPA and/or RIDEM hazardous waste characteristics (see Type 3 Soil Criteria attachment), necessitating disposal as hazardous waste. This Soil Type has not been encountered on the project, but an item has been inserted in the Proposal in the event that this soil type is encountered.

The excavated soils will be stockpiled according to these anticipated Soil Types and field screening results (see Section 1.4).

1.4 Soil Excavation

As required within the Contract Special Provisions (JS-Code 202.9901), the Contractor must submit an excavation plan. Soils shall be excavated separately, based on the anticipated Soil Type, as follows:

- Excavated and excess wetland stream restoration soils containing invasive *Phragmities* plants shall be stockpiled separately from all other soil types. This soil is expected to be Type 1B.
- Type 1A soils are expected to be encountered in the vicinity of soil borings B-1E, B-2E, B-4E, and B-7E. Soil in these areas shall be stockpiled together, separate from other soil types for waste characterization testing.
- A portion of the soil at B-6E (STA 106+42) is anticipated to be Type 2 soils which contain TPH concentrations >11,000 ppm. Elevated photoionization detector (PID) readings and petroleum odors were noted in this area. This soil shall be stockpiled separate from other soil types for waste characterization sampling.
- The remainder of the project soils (in the vicinity of borings B-3E and B-5E) will likely be Type 1B soils and shall be stockpiled separate from other soil types for waste characterization sampling.

The RIDOT Environmental Representative shall be on-site while excavating to aid the Contractor in segregating these soils for separate stockpiling and testing. The Contractor should assume that the Soil Type changes half the distance between soil borings of different soil types.

The RIDOT Environmental Representative will be present during excavation activities to screen soils with a PID. The Contractor must provide the RIDOT Environmental Representative with a minimum 24-hour notice that excavation activities are scheduled. One soil sample will be screened per five cubic yards of material excavated. If petroleum odors are detected in the soil, or if PID readings are detected above 20 ppm, the soil will be stockpiled for analytical testing as Type 2 soil. If PID readings are between 10 ppm and 20 ppm, they will be stockpiled for analytical testing as Type 1B soil. Soils with PID readings less than 10 ppm will be stockpiled for analytical testing as Type 1A soil.

Clean material that meets the RIDOT Common Borrow Specification will be placed as backfill.

Soil be will categorized into one of the four categories (Type 1A, 1B, 2, 3) and handled according to the Contract Special Provisions (JS-code 202.9901-202.9905). The RIDOT Environmental

Representative will collect samples for analysis of TPH, VOCs, PAHs, and/or RCRA 8 metals from each stockpile at a frequency of one sample per 500 tons (325 cubic yards) to confirm the Soil Type of each stockpile. The results will be forwarded to the Contractor upon receipt. The Contractor will be responsible for obtaining additional analytical data required by the selected disposal facility.

The RIDOT Environmental Representative and the Contractor will both be responsible for maintaining Operating Logs in accordance with Section 9.14 of the Remediation Regulations and the Remedial Action Work Plan. The Operating Log will clearly and completely record activities on-site and demonstrate how the implementation and operation of the Remedial Action is progressing. The Operating Log shall be readily available at the project site during implementation and operation of the Remedial Action. A copy of the log shall be submitted to RIDEM annually.

1.5 Soil Transport – Disposal

One option for soils that cannot be reused on the project is reuse for daily cover at the Rhode Island Resource Recovery Corporation (RIRRC) landfill in Johnston, Rhode Island. However, the Contractor is responsible for selecting the disposal facility and obtaining acceptance at a disposal facility.

Each stockpile of soil will be transported to the approved disposal facility, using the appropriate documentation. Each truck will be provided with a copy of the appropriate documentation that will accompany the truck to the receiving facility. The trucks used for transporting soil will be lined and covered to prevent water and/or soil from escaping the trucks.

Upon project completion, all manifests and material shipping record logs will be accumulated into a Closure Report in accordance with Section 11.09 of the Remediation Regulations. The Closure Report must be submitted to the RIDOT NRU at the completion of remedial activities for this project.

1.6 Groundwater Management

Based on previous investigations, groundwater is expected to be encountered at a depth of approximately four feet below grade. Dewatering will be necessary for excavations approximately four feet or greater. Existing groundwater analytical data indicates that the groundwater at the project site does not contain contaminate concentrations above the RI GA Groundwater criteria.

If groundwater is encountered during excavation for the installation of the proposed closed drainage system, the Contractor will need to employ local dewatering methods in order to install the drainage system in the dry. Since there is limited right-of-way, Contractor shall pump water from the excavation and transport the water to a dewatering basin. The Contractor will be allowed to construct a temporary dewatering basin within the permanent drainage easement boundaries on the former State Police Barracks property. Contractor will not be permitted to directly discharge any groundwater encountered during construction into the State storm water drainage system or surrounding wetland prior to removal of 90 percent suspended solids. The Contractor would be responsible for obtaining the permit from the municipality and fulfilling any reporting requirements.

AECOM Environment

Submitted to:
Commonwealth Engineers and Consultant
Providence, RI

Submitted by:
AECOM
Chelmsford, MA
60180953
July 2012

Remedial Action Work Plan

Rhode Island Department of Transportation
Highway Improvements, Routes 102 and 44
Glocester, Rhode Island

Addendum No. 1

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Remedial Action Work Plan

Rhode Island Department of Transportation
Highway Improvements, Routes 102 and 44
Glocester, Rhode Island

Prepared By
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Reviewed By
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Addendum No. 1

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1.0 Introduction

AECOM has prepared this Remedial Action Work Plan (RAWP) on behalf of Commonwealth Engineers & Consultants, Inc. (CEC) and the Rhode Island Department of Transportation (RIDOT) in response to a Program Letter issued by the Rhode Island Department of Environmental Management (RIDEM) to RIDOT on October 5, 2011 (Case Number 2010-162). The letter, a copy of which is provided in Appendix A, serves as approval of a Site Investigation Report (SIR) submitted to RIDEM on October 5, 2010 to address the discovery of contaminated soil along a portion of RIDOT's right-of-way (ROW) in Glocester, Rhode Island (site) as shown on Figure 1 – Locus Map.

RIDOT is in the process of conducting highway improvements along an approximate one-mile distance along Routes 102 and 44 at the site. Prior to conducting the highway improvements, RIDOT contracted AECOM to conduct a soil and groundwater investigation and subsequent reporting consistent with the RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (Remediation Regulations, DEM-DSR-01-93) dated 31 March 1993, as amended August 1996, February 2004, and November 2011 (Remediation Regulations).

During the course of the investigation, AECOM discovered that soil at the site is impacted with contamination from metals (lead) and total petroleum hydrocarbons (TPH), above applicable RIDEM Residential Criteria. Groundwater at the site is not impacted. A Hazardous Materials Release Notification Form (RNF) was submitted to RIDEM on May 24, 2010. A copy of the RNF is provided in Appendix B. Subsequent to submitting the RNF, AECOM prepared and submitted a SIR consistent with the Remediation Regulations.

RIDEM subsequently issued a Letter of Responsibility to RIDOT on July 26, 2010. The letter, a copy of which is provided in Appendix C, identified RIDOT as a Responsible Party in connection with the discovery of hazardous materials in Glocester, Rhode Island. Accordingly, RIDEM directed RIDOT to perform the following activities:

1. Notify all abutting property owners and tenants that an investigation is about to occur prior to the implementation of the site investigation field activities in accordance with the Remediation Regulations, with copies of the notices sent to RIDEM prior to the commencement of the fieldwork.

2. Submit on or before September 30, 2010 a complete Site Investigation Report (SIR) with checklist for review and approval by the Department in accordance with Section 7.00 of the Remediation Regulations.

3. Be prepared, upon Departmental approval of the SIR, to bring the site into compliance with the Remediation Regulations.

No additional investigation was conducted for the SIR; therefore, the abutters were not notified.

AECOM prepared the SIR and RIDOT submitted it to RIDEM on October 5, 2010. In response to RIDEM comments, a SIR Addendum was submitted on October 3, 2011. The SIR presented

remedial alternatives to address the soil contamination at the site. The SIR concluded that soil at the site has concentrations of lead in soil exceeding the Method I Residential Direct Exposure and GA Leachability Criteria for that substance as referenced in the Remediation Regulations. Based on the presence of hazardous substances at those concentrations, RIDEM concluded that a release of hazardous materials to the environment had occurred.

The October 5, 2011 Program Letter acknowledges the preferred alternative identified in the SIR. The Program Letter states, "The preferred remedial alternative for contamination located at the Route 44 Road Improvements (Contract 3C) site in Glocester proposes soil excavation, reuse, and encapsulation or removal to an approved, offsite facility. Contaminated soils remaining onsite will require that an Environmental Land Usage Restriction and post-construction Soil Management Plan (ELUR/SMP) be recorded for the site."

This RAWP describes the actions that are required to implement the preferred remedial alternative in support of the proposed highway improvements, bringing the site into compliance with the Remediation Regulations.

2.0 Site Description

RIDOT is in the process of conducting highway improvements along an approximate one-mile distance along Routes 102 and 44 in Glocester, Rhode Island. This RAWP will be implemented at the site within the limits of the project work, as indicated on Figure 2 – Site Plan.

2.1 Project Description

The highway improvements for Putnam Pike begin at the Glocester Senior Center located 300 feet west of the Money Hill Road intersection and extend approximately one mile to a point one-quarter mile east of Tourtellot Hill Road. The project also includes a 900-foot section of Money Hill Road from Putnam Pike to the intersection of Victory Highway and continues along the west side of Victory Highway to the Pine Meadow Glocester Housing Authority property.

The highway improvements proposed will maintain the present widths so there will be no widening or additional travel lanes upon the completion of the project. Granite curb and new sidewalks will be installed on the west side of Victory Highway and along both sides of Money Hill Road and Putnam Pike. Decorative lampposts will be installed along both sides of Putnam Pike within the same limits of the stamped concrete sidewalks.

A new drainage system will be installed along Victory Highway, Money Hill Road, and Putnam Pike. A small detention basin will be constructed on the former State Police Barracks land located at 1116 Putnam Pike to provide water quality treatment of the storm water discharge from the roadway areas. A fence with landscaping will be placed around the basin.

An existing culvert under Sherman Lane will be replaced and the streambed from this point to the culvert headwall behind 1202 Putnam Pike will be graded to remove sediment and restore the flow channel, improve water quality, and reduce flooding.

2.2 Land Uses and Potential Receptors

According to Rhode Island land use records, the site is classified as Commercial & Industrial in the northern portion, Medium Density Residential and Institutional in the central portion, and Medium Density Residential in the southern portion. Chepachet Village has a long history of industrial activity associated with the Chepachet River.

Based on the RIDEM Groundwater Classification and Wellhead Protection Area (WHPA) Map, groundwater beneath the site and the surrounding area is classified as a GAA resource. This highest use classification is assigned to areas in which the groundwater is designated to be suitable for public or private drinking water use without pretreatment. Private water supply wells were identified at or within a 1-mile radius of the site. The nearest residences are located along the length of the project, immediately adjacent to the site.

The site is located in the Chepachet River Basin. Stormwater runoff is directed from the roadway into a series of catch basins that connect to the closed state drainage system. Stormwater eventually discharges directly into the Chepachet River. The Chepachet River bank is steep from the edge of

abutting properties to the water level. The bank is 10 feet or more below existing ground level. The only wetland resource area located within ¼ mile of the site is the Chepachet River and its associated bank. Rhode Island Fresh Water Wetlands Act – River Bank Wetlands Regulations has jurisdiction over the area that lies within 200-feet of the edge of the river. To the best of our knowledge, there are no known fish habitats or species of special concern or threatened or endangered species that exist within the proximity of the site.

The nearest surface waters are Chepachet River, located within the site and approximately 40 feet from the nearest residence. No other significant surface water features were identified in the vicinity of the site.

The existing roadway elevation ranges from ± 430 feet above the National Geodetic Vertical Datum (NVGD) at the northern portion of the site. To the south of the Chepachet River, the elevation is ± 420 feet NGVD and the elevation at the central portion of the site in the vicinity of the Chepachet River is ± 410 feet NVGD. At the southern portion of Putman Pike, the elevation is ± 450 feet NGVD.

There is one (1) area within a ½-mile radius of the site designated as a Protected Area. This area is south of the southern limits of the project off Chopmist Hill Road (Route 102). There are several institutions and/or historic sites within ¼ mile of the site.

No wastes or hazardous materials are generated, handled, or stored on-site. There is a history of releases, spills, or leaks of such materials on-site from the former gasoline filling stations and underground storage tanks located in the vicinity of the site.

3.0 Remedial Objectives

In accordance with the Remediation Regulations, the remedial objective for a site must comply with the requirement of Rule 8.00 (Risk Management) and Rule 9.00 (Remedial Action Work Plan).

3.1 Risk Management

In accordance with the Remediation Regulations, the remedial objective for a site must satisfy five requirements in order to manage the actual or potential risks to human health and the environment. The proposed remedial action for the site meets the Remedial Objectives in Rule 8.01, as described below:

A. *The remedial objective for each carcinogenic substance does not exceed a 1 x 10^{-6} excess lifetime cancer risk level and the cumulative excess lifetime cancer risk posed by the contaminated-site does not exceed 1 x 10^{-5};*

No person at the site will be exposed to a substance that could result in an excess lifetime cancer risk because of the long-term remediation goals and safety precautions during implementation of the remedial alternative.

B. *The remedial objective for each non-carcinogenic substance does not exceed a hazard index of 1 and the cumulative hazard index posed by the contaminated-site does not exceed 1 for any target organ;*

Based on the findings of the site investigation, neither specific substances nor the site poses a significant non-cancer health risk due to the presence of one or more hazardous substances with similar modes of toxic action.

C. *The remedial objective will not significantly contribute to adverse effects to any environmentally sensitive areas at or in the vicinity of the contaminated-site;*

The planned remedial actions for the site will involve the excavation, characterization, and disposal of impacted soil to support the construction project. The Chepachet River is an environmentally sensitive receptor and will be protected with straw bales/silt fence during all construction excavation activities. The excavation of contaminated soils will prevent migration of contaminants into the River in order to satisfy this objective.

D. *The remedial objective will be protective of the natural resources of the State, including but not limited to groundwater;*

Groundwater at the Site is not impacted with contamination. The planned remedial actions to remove the soil contamination will prevent any leaching of contaminants into the groundwater and adjacent Chepachet River.

E. *The remedial objective shall address the requirements of Rule 8.07 (Upper Concentration Limits).*

The site investigations performed to date did not result in identifying any contamination at the site in excess of Upper Concentration Limits (UCL). Therefore, the site is in compliance with Rule 8.07. During construction, if non-aqueous phase liquids are encountered, the free product will be appropriately handled and the soil containing the product will be stockpiled separately for offsite disposal. Any soil removed during excavation that exceeds the UCL for TPH or any hazardous substance will be appropriately analyzed and classified for disposal.

3.2 Soil Objectives

The principal contamination identified at the site includes soil impacted by TPH, naphthalene, and lead. Given the shallow nature of the detections (upper 4 feet of soil), it is possible that this contamination is related to the use of fill along the site. It is also known that the site historically had multiple gasoline filling stations and underground storage tanks for gasoline and heating oil.

Since the contamination is generally limited to vadose zone soils, soil remediation is expected to be accomplished by excavation, limited reuse, and off-site disposal in the planned construction area.

Soil at the site is designated as Residential because a portion of the area abuts residences and the site is immediately adjacent to the Chepachet River. The future use of the site will be Industrial/ Commercial because it is an active highway, the area will be covered under pavement and concrete sidewalks, and because the activities at the Site are not traditional residential activities as defined by the Remediation Regulations.

The proposed remedial actions comply with the General Requirements for Soil Objectives, identified in Rule 8.02.A. The site will be remediated in a manner that meets the direct exposure and leachability criterion for each hazardous substance established in Rule 8.02.B (Method 1 Soil Objectives), as summarized below:

3.2.1 Direct Exposure Criteria

Application of the Method 1 Soil Objectives at the site will ensure that contamination is removed and the site achieves compliance to be protective of current and future human exposure. Since the proposed use of the property is a highway and associated sidewalks and the soil will be under impervious materials, human exposure is very unlikely after construction. Construction workers will be protected with appropriate personal protective equipment (PPE) and a Health and Safety Plan (HASP) during construction activities.

It is anticipated that soil in the area of the long-term remedial actions will not comply with the Method 1 Residential Direct Exposure Criterion (RDEC) throughout the vadose zone. Therefore, the Method 1 Industrial/Commercial Direct Exposure Criteria (I/CDEC) will be applied to a depth of at least two feet below the excavated ground surface, pursuant to Rule 8.02.A, for the following reasons:

- *The contaminated-site is currently limited to industrial/commercial activity;*

  The site is currently an active highway that is limited to industrial/commercial activity and will continue as such after the planned remedial work has been completed.

- *Access to the property containing the contaminated-site is limited to individuals working at or temporarily visiting the subject parcel;*

The property is generally accessible to the public since it is an active highway. However, the area of the site containing residual contamination above the RDEC will be encapsulated as described below.

- *The current and reasonably foreseeable future human exposure to soils at the contaminated-site is not expected to occur beyond a depth of 2 feet below ground surface;*

  The current and foreseeable future human exposure to soils at the site is not expected to occur at any depth. The site is an active highway and, apart from occasional maintenance performed by RIDOT personnel, does not support any other human activity. In addition, following completion of the planned construction activities, the top two feet of soil at the site will consist of clean fill material and pavement.

- *An environmental land usage restriction consistent with Rule 8.09 (Institutional Controls) is in effect with respect to the property, or to the portion of the property containing the contaminated-site.*

  An Environmental Land Usage Restriction (ELUR) will be implemented as part of the remedial actions for the Site.

3.2.2 Leachability Criteria

The Method 1 GA Leachability Criteria (GALC) will be applied at the site for each hazardous substance in soil throughout the vadose zone. All soils at the site above the Method 1 GALC will be removed so that soil at the site is in compliance with the Method 1 Soil Objectives.

Based on a comparison of soil and groundwater samples collected at location B-6E, leaching from shallow soil into groundwater is not occurring at the site. Application of the Method 1 Soil Objectives at the site will ensure that contamination is removed and the site achieves compliance to be protective of groundwater and surface water resources.

3.2.3 Total Petroleum Hydrocarbons

The Soil Objectives for TPH shall be applied to the site in conjunction with the soil objectives for all other hazardous substances as described above. During construction and subsequent post excavation sampling, the applicable Method 1 Direct Exposure Criteria will be utilized, as summarized below.

- The Method 1 Residential TPH Direct Exposure Criterion shall be 500 mg/kg (for the top two feet of unencapsulated soils).
- The Method 1 GA TPH Leachability Criterion shall be 500 mg/kg.
- The Method 1 Industrial/Commercial TPH Direct Exposure Criterion shall be 2500 mg/kg for soils deeper than two feet below grade.

Based on the information presented above, the Soil Objectives at the site will be consistent with Method 1 Direct Exposure Criteria (depending on location and depth) and the GALC, as verified by appropriate laboratory analysis.

3.3 Groundwater Objectives

Groundwater at the site is designated as GAA since groundwater underlying and downgradient of the site is classified as a current or potential source of drinking water. Groundwater collected during the site investigation did not exceed the Method 1 GALC. Therefore, the site is in compliance with Groundwater Objectives.

3.4 Surface Water and Sediment Objectives

Sediment impacts were identified during the site investigation. The three wetland soil samples all contained concentrations of lead and one location had a concentration of TPH above the Method 1 RDEC. Similarly, the concentration was above the Method 1 GALC. The remedial action will address sediment impacts by excavation and disposal off-site, coupled with restoration using materials appropriate for wetland restoration.

3.5 Air Objectives

Volatile organic compounds (VOCs) in ambient air were not detected during the course of the site investigation. Although VOC concentrations measured during headspace soil screening exceeded background in some soil samples, none of the readings was at high enough concentrations to partition to air in sufficient quantities to adversely impact ambient air quality. VOCs were not detected in groundwater above Method 1 GA Groundwater Objectives; therefore indoor air quality in buildings proximate to the site should not be impacted. Because the site is an active highway, no structures are expected to be erected in this area that would represent an enclosed point for VOC soil gas accumulation. No indoor air sampling or monitoring was conducted as part of the site investigation.

Ambient air monitoring will be performed with a photoionization detector (PID) during excavations performed as part of this RAWP. If VOC concentrations exceed background conditions at the site during the remedial activities, all work will be suspended until the source and nature of the VOC detections are identified. In addition, a HASP will be prepared for the RAWP that will detail the PPE necessary for working under these conditions. If excessive airborne dust is observed during the remedial activities, then dust control measures will be employed. These measures may include the periodic wetting of exposed un-vegetated excavation surfaces or covering soil stockpiles with polyethylene sheeting.

4.0 Proposed Remedy

The proposed remedial alternative to address the presence of elevated levels of TPH, lead, and naphthalene in soil at the site primarily consists of excavation and disposal of soils, as this would be needed to support the proposed construction. This work will occur within the limits of the site, depicted on Figure 2 – Site Plan.

Excavated soils will be screened, characterized, and segregated in accordance with procedures described below. Impacted materials will be removed and disposed at approved facility(ies) while the remaining soil at the site will comply with the Method 1 RDEC for unencapsulated soils, Method 1 I/CDEC for encapsulated soils more than two feet below ground surface, and GALC. Groundwater at the site is not impacted.

4.1 Description of Impacted Media

During the Phase II Environmental Site Assessment, seven soil borings were conducted (B-1E through B-7E), three surface soil samples were collected (WS-1 through WS-3), and one groundwater monitoring well was installed (B-6E). Representative soil and water samples were collected and analyzed.

Soil samples were analyzed for VOCs by EPA Method 8260B, TPH by Gas Chromatography (GC), Mercury by EPA Method 200.7, Mercury by EPA 6000/7000 Methods, Priority Pollutant 13 (PP13) metals plus barium, vanadium, and sodium by EPA 200 Series Method, and TCLP Metals (lead and mercury) by EPA 1311 & 6000/7000 Series Methods.

The groundwater sample was analyzed for VOCs by 8260B, TPH by GC, Mercury by 200.7, and PP13 metals plus barium, vanadium, and sodium by EPA 6000/7000 Series Methods.

For all samples, chloride, nitrate, nitrite, reactive cyanide, and reactive sulfide were analyzed through general chemistry preparations.

Based on the analytical data, total lead in sediment samples WS-1 through WS-3 exceeded the Method 1 RDEC; naphthalene in boring B-6E, and TCLP lead in borings B-1E through B-6E and sediment samples WS-1 through WS-3 exceeded the Method 1 GALC; and, TPH in borings B-3E, B-5E, and B-6E and sediment sample WS-2 exceeded both the Method 1 RDEC and GALC, as indicated in the table below.

No samples exceeded the Method 1 Upper Concentration Limits. No VOCs were detected in any of the samples.

Standard	Compound	Location	Depth	Result	Standard
Method 1 RDEC	Lead	WS-1	0-1'	154 mg/kg	150 mg/kg
		WS-2	0-1'	326 mg/kg	
		WS-3	0-1'	214 mg/kg	
Method 1 GALC	Naphthalene	B-6E	1-2'	1.92 mg/kg	0.80 mg/kg
	TCLP Lead	B-1E	0-4'	0.234 mg/l	0.04 mg/l
		B-2E	0-4'	0.209 mg/l	
		B-3E	0-4'	0.083 mg/l	
		B-4E	0-4'	0.135 mg/l	
		B-5E	0-4'	0.044 mg/l	
		B-6E	1-2'	0.110 mg/l	
		WS-1	0-1'	2.07 mg/l	
		WS-2	0-1'	1.24 mg/l	
		WS-3	0-1'	0.321 mg/l	
Method 1 RDEC and Method 1 GALC	TPH	B-3E	0-4'	511 mg/kg	500 mg/kg (both)
		B-5E	0-4'	783 mg/kg	
		B-6E	1-2'	11,700 mg/kg	
		WS-2	0-1'	1,010 mg/kg	

The estimated areal extent of soil contamination at the site, which is defined as concentrations of hazardous substances that exceed RIDEM Method 1 RDEC or Method 1 GALC, is depicted in Figure 2 – Site Plan. This area is estimated to encompass approximately 35,000 square feet. Based on the site investigation laboratory analytical results and field and headspace screening observations, the vertical extent of contamination at the site appears to be confined to the vadose zone soils, which were potentially impacted by fill materials or historical releases that occurred at the site.

The average depth of soil contamination at the site is assumed to be shallow (approximately four feet below grade). Since the average depth of fill is six feet and the elevated concentrations of TPH, lead, and naphthalene are likely associated with the fill. Thus, the total volume of impacted soil at the site is estimated to be 6,400 cubic yards. It is anticipated that the upper five feet of soil, on average, will be excavated in order to achieve the desired elevation for the highway improvements.

4.2 Soil Excavation

In order to satisfy the project goals and objectives – construct a new stormwater collection system in Chepachet Village – RIDOT will require excavation to install collection piping and to construct new catch basins. This construction will require the removal of approximately 6,400 cubic yards of material, some of which is impacted by contamination as described in previous sections of this report. It is estimated that approximately 6,000 cubic yards of soil will be excavated for the installation of the new closed drainage piping and catch basin system and approximately 400 cubic yards will be excavated for the Sherman Lane wetland stream restoration portion of the project.

The soil will be temporarily stockpiled at a location selected by the Contractor and approved by RIDOT. 500-ton (325 cy) maximum stockpiles will be tested and categorized for disposal. The RIDOT Environmental Representative will field screen the soils during excavation to assist in making soil type designations. Different soil types will be stockpiled separately.

4.3 Field Screening

All soils excavated from the site will be inspected by visual and olfactory means to ascertain the presence of staining or odors from possible other hazardous materials (OHM) impacts. At a minimum, one VOC headspace screening sample will be collected for every 100 cy of soil excavated. VOC headspace analysis will be performed utilizing a PID with a 10.6 eV lamp or higher if necessary. Field analysis for TPH may be performed utilizing the PetroFLAG Hydrocarbon Test Kit, equivalent to EPA SW-846 Method Number 9074.

The RIDOT Environmental Representative shall inspect the excess soil stockpiles and collect representative samples for laboratory analysis and soil type classification. Laboratory analytical results will be forwarded to the Contractor. The Contractor shall select the disposal facility and perform any sampling necessary, based on the permit requirements of the receiving facility.

If any of these field screening and analysis methods demonstrates OHM impacts to soil approaching or exceeding RIDEM Method 1 Criteria, the soil will be appropriately segregated in the designated stockpile area.

The stockpiled soil shall be evaluated by the Contractor for components such as debris, wood, or large cobbles that might require physical separation from the soil prior to shipment. Based on the current understanding of the history, it is anticipated that the material will consist of urban fill soils containing mostly sands and gravel with occasional bricks or small debris. This material is likely to be sent to a landfill for disposal or a soil treatment facility that is permitted to treat and recycle the material.

4.4 Laboratory Analysis

The RIDOT Environmental Representative will collect soil samples from each stockpile at a frequency of one sample per 500 tons to confirm the soil type of each stockpile. Post-excavation soil samples will be collected in accordance with Section 7.0 of this plan. All samples will be sent to a Rhode Island-certified laboratory for analysis. At a minimum, any sample sent to a laboratory will be analyzed by the following methods and in accordance with the Remediation Regulations and applicable EPA Standards:

- SVOCs – EPA Method 8270
- VOCs – EPA Method 8260
- Total Metals (RCRA 8 Metals) – EPA Methods identified in Rhode Island Remediation Regulations Appendix B
- TPH – EPA Method 418.1 or approved equal

The results will be forwarded to the Contractor upon receipt. The Contractor will be responsible for obtaining additional analytical data required to meet the requirements of a receiving facility for disposal. All potentially contaminated soils will be stockpiled at an interim storage area.

4.5 Final Disposition of Impacted Media

The soil generated during the above-described activities will be temporarily staged at an interim storage area. The area will be designated for this purpose based on its location with respect to the on-going construction activities and their ability to control access to and from the area.

The soil shall be placed in stockpiles on one layer of 40-mil High Density Polyethylene (HDPE) to separate the stockpile from native soils. The stockpiles will be surrounded by pre-cast concrete barriers on three sides. Temporary fencing and straw bales will surround the entire stockpile area. The stockpiles will be covered at the end of each day and as needed to control dust on dry days or erosion during rain events. A water mist will also be used to control dust during active work in the stockpile area. Soils will be excavated, transported to the stockpile location, tested, and categorized as follows:

- Type 1A Project soil that satisfies RIDOT common borrow requirements and are below the RIDEM RDEC through testing for TPH, VOCs, PAHs, and/or RCRA 8 metals, may be reused as backfill. If the soil does not meet either of these requirements and cannot be reused as backfill, the Contractor will remove them from the project site. Approximately 750 cubic yards of Type 1A Soils are expected to be generated.

- Type 1B Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM RDEC but within the limits of the I/CDEC shall be disposed at a licensed facility. Concentrations are within disposal parameter limits allowed by the Rhode Island Resource Recovery Corporation (RIRRC) for materials disposition at the Central Landfill as landfill cover. Approximately 7,450 Tons of Type 1B Soils are expected to be generated.

- Type 2 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM I/CDEC, but are within parameters such that the material can be accepted for out-of-state landfill cover or landfilling without pretreatment or that are suitable for asphalt batching. This soil shall be disposed at a licensed facility. Approximately 3,375 Tons of Type 2 Soils are expected to be generated.

- Type 3 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to exceed the EPA and/or RIDEM hazardous waste characteristics necessitating disposal as hazardous waste. This Soil Type has not been encountered on the project, but an item has been inserted in the Proposal in the event that this soil type is encountered.

Of the total volume of excavated material, it is estimated that 3,400 tons is impacted with contamination above RIDEM I/CDEC. All material will be removed, transported, and disposed off-site at an appropriate facility. The material will be transported and disposed in accordance with all applicable federal, state, and local solid and hazardous waste laws and regulations. The Contractor will be responsible for selecting the disposal facility and obtaining acceptance at a disposal facility.

The Contractor will prepare manifests and/or other shipping records as required by the State of Rhode Island and the receiving facility's home state. Transport shall not be initiated until the receiving facility has issued written acceptance.

All impacted solids that are removed for off-site disposal will comply with all applicable US DOT packaging, labeling, marking, and shipping requirements per 40 CFR 273.18 or 40 CFR 273.38 prior

to offsite shipment. In addition, all impacted solids that are removed for off-site disposal will comply with all applicable US EPA and RIDEM regulations for handling, storage, transporting, disposal, and documentation including manifests, weight slips, and bill of ladings.

If determined to be hazardous waste, solids transported from the site will be conveyed with the appropriate Rhode Island Uniform Hazardous Waste Manifest. All hazardous waste manifests will be submitted to the Engineer and included in the Operating Log, per Section 15.0 of this plan, for submission to RIDEM.

All Universal Waste transported from the Site will comply with the requirements of 40 CFR 273 Subpart D and Rule 13 of the Hazardous Waste Regulations.

All documentation including, but not limited to, Hazardous Waste Manifests and Solid Waste receipts, will be submitted to the Engineer. Copies of the documentation shall be sent to the Environmental Monitor (RIDEM) as part of the records used to demonstrate site compliance, implementation and operation of the proposed remedy, and for preparation of the necessary closure reports.

4.6 Best Management Practices

The excavation of impacted soil will effectively remove the contamination at the Site, and will therefore achieve the Remedial Objectives outlined in this plan. In addition, the following Best Management Practices, from Rule 9.03, will be implemented to address RIDEM concerns associated with removing impacted media:

- *Prevent the infiltration/migration of hazardous substances at levels harmful to human health or the environment;*

Based on the SIR, the site is contaminated with TPH, naphthalene, and lead that are not likely to migrate. If further oil or OHM impacts are identified during the remedial activities, the source and nature of the contamination will be assessed and removed in accordance with this plan. This may require that a modification of the RAWP be submitted to RIDEM.

- *Prevent direct contact with hazardous substances at levels harmful to human health and the environment;*

An Environmental Field Technician will be on-site to observe all remedial activities performed at the site. This person will observe whether the Contractor is in compliance with the HASP and has the appropriate PPE, as specified in the HASP, to adequately perform the remedial activities without coming in direct contact with any potentially contaminated soils. If additional impacts are identified during the remedial activities, the site personnel will be required to upgrade the level of PPE to avoid direct contact with the impacted soil.

- *Eliminate volatilization and entrainment of hazardous substances; and*

The proposed remedy will remove all impacted soil at the site within the project area. Excavated soil will be stockpiled and covered to eliminate entrainment of hazardous substances.

- *Minimize and manage surface runoff from the area including during the remedial action.*

The design plans require sedimentation and erosion control barriers, as appropriate, to manage stormwater runoff at the site. The design plans also establish responsibilities for preparing and maintaining the excavated soil stockpile area with an appropriate erosion control barrier and plastic sheeting to prevent migration of potential contaminants from the soil. The excavated soil stockpile will be located downgradient of the site and will be protected and separated from non-contaminated areas with adequate physical barriers such as a continuous line of jersey barriers.

5.0 Remediation of Impacted Groundwater

Impacted groundwater was not encountered during the site investigation activities.

6.0 Limited Design Investigation

A limited design investigation has not been required by the Director or prepared as part of this RAWP.

7.0 Points of Compliance

According to RIDOT personnel, Points of Compliance for a drainage or utility excavation project is not required for compliance with the Remediation Regulations. RIDOT Contractor will excavate soil to the limits shown on the plans and re-use or dispose of excavated materials in compliance with this RAWP. Sampling of the base or sidewalls of the excavation trench will not be performed.

8.0 Schedule

The proposed remedial actions are scheduled to begin immediately upon approval of this RAWP. RIDOT would like to complete the highway improvements as soon as possible. It is estimated that the soil management activities will take about 60 non-concurrent days over the duration of the project construction schedule. A final schedule will be developed by the Contractor and submitted to the Engineer for review and approval prior to beginning any remedial activities at the site.

9.0 Contractor/Consultant

The remedial activities described in this report will be performed by a Contractor, and their authorized subcontractors, hired by RIDOT (herein referred to as "Contractor"). The Consultant overseeing the remedial activities will be AECOM. The following sections outline the remedial activity responsibilities of both the Contractor and Consultant.

9.1 Contractor Responsibilities

The Contractor and its authorized subcontractors will be responsible for the following activities related to this RAWP:

- Develop a site-specific HASP;
- Excavate and stockpile soils as directed by the Engineer;
- Transport and dispose of soils at an approved facility, as directed by the Engineer and approved by Contractor; and
- Prepare appropriate Manifests and Bills of Lading for transport and disposal of soil.

9.2 Consultant Responsibilities

AECOM will be responsible for performing or coordinating the following activities related to this RAWP:

- Field screening of soil for segregation in the stockpile area;
- Maintenance of an Operating Log;
- Preparation of progress reports related to the remedial activities;
- Preparation of applicable close out reports; and
- Interface with RIDOT and RIDEM.

RIDEM will be notified in writing prior to commencing any remedial activities at the site.

10.0 Site Plan

A Site Plan is included as Figure 2. The Site Plan contains the following information:

- Location of site investigation borings and monitoring wells;
- Source Area; and
- Limits of excavation for the proposed remedy.

This Site Plan is a compilation of contract drawings prepared by a Rhode Island Registered Professional Engineer and information contained in the SIR.

11.0 Technical Specifications

The design standards and technical specifications for this RAWP are included in contract documents that were initially developed for the Route 44 Road Improvements – Contract 3C. The specifications are a compilation of the RIDOT Standard Specification for Road and Bridge Construction (2004 Edition) and AECOM supplemental information, which specifically identify the nature of the work to be performed and the materials and equipment to be used for the remedial activities.

A Rhode Island Registered Professional Engineer prepared the specifications with the assistance of AECOM personnel who prepared this RAWP. A copy of the relevant specifications from the contract documents is included in Appendix E.

12.0 Set-up Plans

As part of the Rhode Island Route 44 Road Improvements – Contract 3C contract documents and this RAWP, the Contractor will be required to create a stockpile area and install an appropriate sediment and erosion control system prior to the start of the remedial actions. The limits of the stockpile area and erosion control system are to be determined and approved by the Engineer. The stockpile area and erosion control system have been designed in accordance with best management practices in a manner that complies with all applicable laws, rules, and regulations.

In general, the storage of excavated soil will be located downgradient of the site, and migration of contaminants from this area will be addressed with adequate physical barriers such as polyethylene sheeting, jersey barriers, and absorbent pads.

13.0 Effluent Disposal

The disposal of material removed from the site during implementation of the remedial activities is ultimately the responsibility of the Contractor. The Contractor will be responsible for selecting the disposal facility, gaining facility acceptance, and transporting the soil for disposal.

In addition to the requirements previously mentioned, the Contractor will be required to comply with Rule 6.00 of the Hazardous Waste Regulations. Rule 6.01 of the Hazardous Waste Regulations requires a transporter of hazardous waste to obtain a Hazardous Waste Transporter Permit or temporary permit.

Any universal waste discovered during the remedial activities will be handled, transported, and disposed at an approved landfill pursuant to 40 CFR Parts 124, 270, 271.

The following is a list of applicable laws and regulations regarding effluent disposal for the planned remedial actions:

- 40 CFR Parts 260 through 273;
- Rhode Island Department of Environmental Management, Office of Waste Management, Solid Waste Regulation No. 1, effective January 1997, as amended April 2001 and October 2005;
- Rhode Island Resource Recovery Corporations Alternative Daily Cover Requirements;
- Rhode Island Rules and Regulations for Hazardous Waste Management, short title: "Hazardous Waste Regulations" (#DEM OWM-HW10-01), effective July 18, 1984, most recently amended in June 2010;
- Rhode Island Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases, short title: "Remediation Regulations" (#DEM-DSR-01-93), dated March 31, 1993, as amended August 1996, February 2004, and November 2011; and
- Rhode Island Universal Waste Rule, June 2002.

14.0 Contingency Plan

AECOM will develop a Contingency Plan that identifies the procedures to be followed and the persons to be notified in the event of an unexpected incident involving hazardous materials at the site. The following is a summary of the relevant information that will be included in the Contingency Plan:

- Emergency contact information for RIDOT, RIDEM, AECOM, and the Contractor's representative
- Emergency response procedures, including a spill prevention and control plan
- Description of the work practices to prevent ignition and/or reaction of potential compounds or materials at the site.

The Contractor will be required to provide this information in its HASP. A copy of the Contingency Plan will be available at the site at all times during the remedial activities.

15.0 Operating Log

AECOM has developed and will maintain an Operating Log during implementation of the remedial activities. The Operating Log will be kept on file for a period of three (3) years after completion of the RAWP. A sample Operating Log is included in Appendix G.

The RIDOT Environmental Representative and the Contractor will both be responsible for maintaining Operating Logs in accordance with Rule 9.14 of the Remediation Regulations. The Operating Log will clearly and completely record activities on-site and demonstrate how the implementation and operation of the Remedial Action is progressing. The Operating Log shall be readily available at the project site during implementation and operation of the Remedial Action.

A copy of the Operating Log will be submitted to RIDEM concurrently with the required progress reports.

16.0 Security Procedures

As described in Section 2.2 of this plan, the site is owned by RIDOT and is only accessible to RIDOT employees. However, as part of the highway improvement activities, the site will also be accessible to the project team, RIDOT and RIDEM personnel, and the selected Contractor.

The Contractor is responsible for complying with the access limitations to the site, as described in the contract documents.

17.0 Shut-Down, Closure and Post-Closure Requirements

The proposed remedy does not include any active "remediation units" and therefore does not require any specific shut-down or closure requirements.

18.0 Institutional Controls and Notices

This RAWP describes the proposed long term remedial actions for the site. This RAWP includes the implementation of an environmental land usage restriction (ELUR) to comply with the requirements of Remediation Regulations Rule 8.09.

An ELUR will be recorded with the title to the affected property(ies) at the site to:

- Prohibit activities at the site that may interfere with the remedy;
- Prohibit activities that may result in human exposure to levels of substances that exceed the concentrations determined to be protective of human health;
- Require prior notice to RIDEM of a property owner's intent to sell, transfer, or convey any interest in the site;
- Grant access to RIDEM and its designated representatives at reasonable times for the purpose of monitoring compliance with the remedy; and
- Describe the restrictions placed on the property(ies) and the allowable use(s) of the property(ies).

An ELUR would be used to ensure that the property or the site is not used for any residential activity in the future and that future uses of the property continue to be limited to industrial/commercial activity. A draft ELUR is included in Appendix F.

19.0 Compliance Determination

The procedures described above will demonstrate that the remedial objectives for the site have been met, in compliance with Rule 8.10 of the Remediation Regulations.

20.0 Certifications

The following person(s) certify that the information contained in this Remedial Action Work Plan is accurate to the best of their knowledge.

Kyle Davis
Environmental Engineer
AECOM

In addition, the following person(s) certify that this Limited Remedial Action Work Plan is a complete and accurate representation of the contaminated-site and the release and contains all known facts surrounding the release to the best of their knowledge.

Name
Title
Organization

Appendix A

October 5, 2011 Program Letter

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

October 5, 2011

PROGRAM LETTER
CASE # 2010-162

Peter A. Healey, P.E.
Acting Chief Civil Engineer
Environmental Resources/Highway Engineering
Rhode Island Department of Transportation
Engineering Division
Two Capitol Hill, Rm. 226
Providence, RI 02903-1124

RE: Route 44 Road Improvements (Contract 3C) in Glocester, Rhode Island

Dear Mr. Healey:

On February 24, 2004, the Rhode Island Department of Environmental Management (the Department; RIDEM OWM) amended the Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (the Remediation Regulations). The purpose of these regulations is to create an integrated program requiring reporting, investigation and remediation of sites in order to eliminate and/or control threats to human health and the environment in a timely and cost-effective manner. The purpose of a Program Letter is to indicate that the Department deems the investigation of the reported release complete and to notify the Responsible Party that they must perform Public Notice in accordance with Sections 7.07 and 7.09 of the Remediation Regulations.

The Department has reviewed the following document regarding the Site Investigation at the above-refereneed site:

- Site Investigation Report, RI Department of Transportation: Route 44 Improvements (Contract 3C), Glocester, RI (SIR), prepared by AECOM, dated September 30, 2010, and received on October 5, 2010.
- Letter response to RIDEM June 20, 2011 comments to the SIR, prepared by AECOM, dated August 18, 2011 and received via email on August 29, 2011.
- Signed Certificate of Accuracy, submitted via email on September 9, 2011.
- Addendum Site Investigation Report dated September 30, 2010, RI Department of Transportation: Route 44 Road Improvements (Contract 3C), Glocester, RI, prepared by AECOM, dated Septeniber 29, 2011, and received via email on October 3, 2011.

The Department regards the information provided in this above-refereneed report as meeting the requirements pursuant to Rule 7.08 of the Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (the Remediation Regulations), as amended February 2004. The preferred

remedial alternative for the property for contamination located at the Route 44 Road Improvements (Contract 3C) site in Glocester proposes soil excavation, reuse, and encapsulation or removal to an approved, offsite facility. Contaminated soils remaining onsite will require that an Environmental Land Usage Restriction and post-construction Soil Management Plan (ELUR/SMP) be recorded for the site.

The ELUR to be recorded on the property will restrict certain activities on the entire site and will also ensure that the engineered cap is not disturbed. The ELUR will include a post-construction soil management plan (SMP), which will outline the procedures for managing the soils onsite should disturbances below the cap be required after construction. The ELUR will require maintenance of all engineered controls and will act to further limit direct exposure to contaminated areas. As part of the ELUR, it is the responsibility of the property owner to provide for annual inspections of the property by a qualified environmental professional, and to submit a report, subject to review by RIDEM OWM, which shall certify that the property is in compliance with the terms of the ELUR.

The Department acknowledges that the site investigation activities for the site are complete. The Department is not yet able to formally approve the SIR, however, due to the necessity to first allow the public to comment on the preferred Remedial Alternative. Rules 7.07 and 7.09 of the Remediation Regulations outline the requirements for public notice to property abutters, tenants, the Town of Glocester, and utilities with easements regarding the substantive findings of the completed investigation and the opportunity for public review and comment on the technical feasibility of the preferred remedial alternative. A draft notification should be sent to the Department for review and approval prior to distribution. The Department will require a copy of the approved Public Notice letter and a list of all recipients, including abutters, tenants, utilities with easements, and the Town of Glocester.

The Department will formally approve the SIR in the form of a Remedial Decision Letter upon RIDEM OWM approval of all final responses to relevant public comments received following the comment period. At that point, the Department will require submission of the draft Remedial Action Work Plan, along with a remediation SMP for review and approval.

If you have any questions regarding this letter, please contact Margaret Bradley by telephone at (401) 222-2797 ext. 7105 or by email at margaret.bradley@dem.ri.gov.

Sincerely,

Margaret Dein Bradley, CPG
Sr. Environmental Scientist
Office of Waste Management

Authorized by:

Jeffrey Crawford
Principal Environ. Scientist
Office of Waste Management

cc. Kelly Owens, RIDEM OWM
M. Dahlquist, RIDOT
K. Davis, AECOM

Appendix B

May 24, 2010 Hazardous Materials Release Notification

State of Rhode Island
Dept of Transportation

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

MAY 24 [illegible]

Engineering
Received

Rhode Island Department of Transportation
ENGINEERING DIVISION
Two Capitol Hill, Rm 226
Providence, RI 02903-1124
PHONE 401-222-2023
FAX 401-222-3006; TDD 401-222-4971

May 24, 2010

Mr. Jeffrey Crawford
Principal Environmental Scientist
RI Department of Environmental Management/Office of Waste Management
235 Promenade Street
Providence, RI 02903

Re: Hazardous Materials Release Notification
Improvements To Route 44, Contract 3C
Glocester, Rhode Island
RIC No 84109 RIFAP No. F-0044(007)

Dear Mr. Crawford:

Pursuant to the Rhode Island Department of Environmental Management (RIDEM) Rules and Regulations for the Investigation and Remediation of Hazardous Releases (Remediation Regulations), the Rhode Island Department of Transportation (RIDOT) is submitting the attached Hazardous Material Release Notification Form which pertains to portions of the RIDOT project area for the above location Lead(total and TCLP) was found to exceed RDEC and or the GA Leachability Criteria as outlined in tables 1 and 2 of Section 8.02(B) (Method 1 Soil Objectives) of the Remediation Regulations. Details of the locations and sampling program results are attached for your review.

If you should have any questions or comments or require additional information regarding this matter, please contact Mike Dahlquist, Environmental Scientist, at 222-2023 Extension 4169.

Sincerely,

Peter A. Healey, P.E.
Acting Chief Civil Engineer
Environmental Resources and Highway Engineering

Enclosure
cc: Dahlquist, Healey, Mariam, Palumbo, Smith, File

Appendix C

July 26, 2010 Letter of Responsibility

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401 222-4462

July 26, 2010

LETTER OF RESPONSIBILITY
CASE # 2010-162

CERTIFIED MAIL

Peter A. Healey, P.E.
Acting Chief Civil Engineer
Environmental Resources/Highway Engineering
Rhode Island Department of Transportation
Engineering Division
Two Capitol Hill, Rm. 226
Providence, RI 02903-1124

RE: Route 44 Road Improvements (Contract 30) in Gloucester, Rhode Island

Dear Mr. Healey:

On February 24, 2004, the Rhode Island Department of Environmental Management (the Department; RIDEM OWM) amended the Rules and Regulations for the Investigation and Remediation of Hazardous Materials Releases (the Remediation Regulations). The purpose of these regulations is to create an integrated program requiring reporting, investigation and remediation of sites in order to eliminate and/or control threats to human health and the environment in a timely and cost-effective manner. A Letter of Responsibility (LOR) is a preliminary document used by the Department to define the relationship between the Department and a Responsible Party under the Remediation Regulations.

Please be advised of the following facts:

1. On May 25, 2010, the Department received from the Rhode Island Department of Transportation (RIDOT) a hazardous materials release notification dated May 24, 2010 regarding the above-referenced site. The Notification of Release was submitted in accordance with Section 5.00 of the Remediation Regulations.

2. The Notification of Release indicates concentrations of lead in soil exceeding the Method 1 Residential Direct Exposure and GA Leachability Criteria for that substance as referenced in the Remediation Regulations. Based on the presence of hazardous substances at those concentrations, the Department has concluded that a release of hazardous materials to the environment, as defined in Rules 3.29, 3.54, and 3.28, respectively, of the Remediation Regulations, has occurred.

As a result of the information known and the conditions observed at the Site, the Department requests that RIDOT, as owner of the property located at the Route 44 Road Improvements (Contract 3C) in Gloucester, perform the following:

1. Notify all abutting property owners and tenants that an investigation is about to occur prior to the implementation of the Site Investigation field activities in accordance with the Remediation Regulations. The notice should briefly indicate the purpose of the investigation, the work to be performed, and the approximate scheduled date of activities. Copies of the letters should be sent to the Department prior to the commencement of the field work.

2. Submit on or before September 30, 2010 a complete Site Investigation Report (SIR) with checklist for review and approval by the Department in accordance with Section 7.00 of the Remediation Regulations.

3. Be prepared, upon Departmental approval of the SIR, to bring the site into compliance with the Remediation Regulations.

Please notify this office of your plans to address these items. If you have any questions regarding this letter or would like the opportunity to meet with Department personnel, please contact the following staff member:

Margaret Dein Bradley, CPG, Senior Environmental Scientist
RIDEM Office of Waste Management
235 Promenade Street
Providence, RI 02908-5767
(401) 222-2797, ext.7105
margaret.bradley@dem.ri.gov

Sincerely,

Margaret Dein Bradley, CPG
Sr. Environmental Scientist
Office of Waste Management

Authorized by:

Jeffrey Crawford
Principal Environ. Scientist
Office of Waste Management

cc. Kelly Owens, RIDEM OWM

Appendix D

Design Specifications

CODE 202.9901

HANDLING, HAULING, AND STOCKPILE MANAGEMENT OF CONTAMINATED SOILS

DESCRIPTION:

This item of work includes the Contractor's work effort required to locate a contamination-free suitable stockpile location that has been verified by soil testing and is acceptable to RIDOT, all fees necessary to acquire the right-of-use for the stockpile location, soil testing, all material and equipment necessary to establish and dismantle the various stockpile bins including but not limited to polyethylene sheets, precast concrete barrier sections, and temporary 6' high chain link fence, and the installation, maintenance and managing of erosion and dust controls. This item of work also includes the handling, hauling, unloading and stockpile management of contaminated or hazardous soil from the excavation location to and within the approved stockpile/testing location, documentation management of the contaminated soil, and the restoration of the stockpile area to its original condition upon completion of the project.

The work shall be performed in accordance with all appropriate sections of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, the RIDEM approved Soil Management Plan (SMP) and shall be in compliance with all applicable permits.

MATERIALS:

The Contractor shall supply and utilize all required materials to adequately complete contaminated soil handling, hauling and stockpiling. Personal protective equipment shall be as specified in the Contractor's site specific Health and Safety Plan.

All materials to be used shall be in accordance with all appropriate sections of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition, and all revisions.

SUBMITTALS:

The Contractor shall be responsible for the selection of a non-contaminated and suitable stockpile location and the acquisition of the permission to use agreement for each approved stockpile location. The Contractor selected stockpile location along with the soil testing results, and signed property owner approval letter shall be submitted to the Department within 30 days from the Notice to Proceed for approval by the Engineer.

The pre-construction stockpile testing Shop Drawing submittal shall include a letter signed by the owner of the perceptive property stating that he is fully aware of the intended use of the property as a temporary contaminated soil management stockpile location and is fully aware of what types of contaminated soil will be stockpiled on said property.

The Contractor shall submit a written description of their proposed soil excavation plan to the Engineer for approval. The description shall include a list of all equipment, including size and capacities, and the sequence of soil removal activities. The sequence shall identify specific excavations and earthmoving operations by baseline and stations. Proposed stockpile locations and capacities shall be identified. The Contractor shall maintain copies of the soil excavation plan and operational log. The operational log shall be submitted to the Engineer daily.

The post-construction stockpile testing Shop Drawing shall include a letter signed by the property owner stating that the property has been restored to its initial condition and has reviewed all soil testing data.

CONSTRUCTION METHODS:

A minimum of four (4) composite soil samples shall be collected from each potential stockpile site selected by the Contractor and analyzed for volatile organic compounds (VOCs), Total Petroleum Hydrocarbons (TPH), Priority Pollutant 13 (PP13) Metals plus barium, vanadium, and sodium, chloride, nitrate, and nitrite, toxicity characteristic leaching procedure (TCLP), lead and mercury, reactive cyanide, and reactive sulfide. Upon the completion of all excavations and the need for the stockpile location, additional soil samples will be taken at the same locations as the initial collection and tested for the same contaminants. The post-construction testing results must verify that the stockpile location was not contaminated by the soils that were brought to this site from this project. Should the post-construction soil testing results indicate that contamination has occurred, the Contractor shall be responsible for all clean-up costs necessary to restore the property.

The State requires that its General Contractor, under the provisions of the General Requirements and Covenants of the Rhode Island Purchasing Regulations, Section 12 – Rhode Island Department of Transportation Projects "to defend, indemnify and hold harmless the State from suits, actions or claims of any character brought because of any injuries or damage received or sustained by any person(s) or property resulting from the Contractor's or its subcontractor(s)' actions."

The Contractor shall supply and utilize all required equipment to adequately place and maintain the stockpiles in a neat and orderly fashion in 325 cubic yard intervals within approved stockpile areas. All stockpiled soil shall be placed entirely on one layer of 10-mil polyethylene and be completely covered with a_6 mil layer of polyethylene, at the completion of each day. The polyethylene sheets shall overlap adjacent sheets by four feet minimum. The stockpiles shall be surrounded by precast concrete barrier sections, temporary 6' high chain link fence, and staked hay bales as shown on the detail included in the plans. Should it be determined that additional stockpiles are required, the materials and set-up required will be at the Contractor's expense. Additional stockpile areas selected by the Contractor shall be subject to the approval of the Engineer.

All costs associated with soil sampling and testing necessary to obtain an approved stockpile site is the responsibility of the Contractor.

It will be the responsibility of the Contractor to ensure that each stockpile location has been placed on and covered by the required polyethylene, and that the erosion controls are in place. It will be the Contractor's responsibility to maintain dust control as required by the SMP at the stockpile locations and at all travel routes leading to and from the stockpile areas.

The Contractor is required to have the necessary personal protective equipment available as specified in the Contractor's site specific Health and Safety Plan and shall have access to an inventory of personal protection equipment in the event that the level of personal protection equipment needs to be upgraded.

During excavation and/or stockpiling, the Contractor shall minimize odors by methods including the use of odor suppressant shell material where necessary.

Subject to the approval of the Engineer, the Contractor may choose to implement any effective and lawful methods for handling contaminated soil encountered in the work area, provided the required handling and excavation methods are performed. The Contractor shall assume all responsibility for the adequacy of the methods, materials, documentation, and equipment employed.

The Contractor shall maintain the stockpile until the soil has been tested and approved for legal disposal off-site. See Job Specific Specifications for Items 202.9902 through 202.9905 for testing requirements. Once a stockpile has reached its capacity and is ready to be tested, the Contractor shall immediately notify the Resident Engineer. The RIDOT's Environmental Representative shall be notified within 24 hours to obtain the required samples for laboratory analysis. The Contractor shall prepare his schedule of work to allow four (4) working days from his notification to the Engineer that the stockpile has reached its capacity to receive the results of the soil testing and classification for disposal.

The Contractor shall maintain an inventory of supplies required to execute the work described herein. This inventory shall be used to implement a contingency plan in the event of unexpected conditions.

Upon completion of the use of the stockpile, the contractor shall be required to remove and dispose of the polyethylene sheeting, concrete barrier, temporary fence, and hay bales. The Contractor shall perform all of the post-construction testing and restore the stockpile areas to a condition acceptable to the Engineer.

METHOD OF MEASUREMENT:

This item will not be measured for payment.

BASIS OF PAYMENT:

Item 202.9901 "HANDLING, HAULING AND STOCKPILE MANAGEMENT OF CONTAMINATED SOILS" will be paid for at its respective contract unit price per "Lump Sum" as listed in the Proposal. The price so stated shall constitute full and complete compensation including but not limited to the acquisition of an approved stockpile site, pre-and-post stockpile site testing, all testing fees, reports, all labor, materials, precast concrete barrier, temporary 6' high chain link fence, staked hay bales, odor suppressant, water for dust control, tools and equipment, the removal and disposal of all polyethylene sheeting, concrete barrier, fence, hay bales, restoration of the stockpile areas, and all other incidentals required to complete the work described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

Excavation for the stream restoration will be paid for as Unclassified Excavation, Code 202.0300. Trench Excavation and dewatering for drainage pipes and drainage structures will not be paid for separately in accordance with the RIDOT Standard Specifications.

CODE 202.9902 LOAD AND HAUL TYPE 1A SOIL
CODE 202.9903 LOAD AND HAUL CONTAMINATED SOIL, TYPE 1B
CODE 202.9904 LOAD AND HAUL CONTAMINATED SOIL, TYPE 2
CODE 202.9905 LOAD AND HAUL CONTAMINATED SOIL, TYPE 3

DESCRIPTION:

This item of work includes all special handling, separation of debris, wood, or large cobbles, loading and hauling of contaminated or hazardous soil from the stockpile and testing location to an off-site Industrial/Commercial property, recycling or disposal facility in accordance with RIDEM regulations for recycling/disposal of these materials and as directed by the Engineer.

During the course of the project construction, contaminated soil shall be excavated. Soil in areas of the site has been documented to be contaminated. Available analytical data is shown in the Environmental Site Investigation Report (SIR) for this project and is included in the General Provisions – Contract Specific, Appendix "J".

HEALTH AND SAFETY PLAN:

The Contractor shall produce and maintain a site specific Health and Safety Plan (HASP) in compliance with the Occupational Safety and Health Administration (OSHA) Standards defined in 29 CFR 1910.120. The project HASP shall be implemented as part of this work.

The Contractor's employees and Subcontractor's employees who will be potentially exposed to the subsurface soils in the SMP are required to have OSHA 40-hour health and safety training and the 8 hour refresher training, if applicable. The Contractor shall provide training certificates to the Engineer for the persons that will be performing the work.

If visible dust is generated, the level of dermal and respiratory protection shall be determined based upon periodic air monitoring to be performed by the Contractor and the requirements of the Site-specific HASP. The Engineer may conduct duplicate air monitoring for quality assurance purposes. Level D protection shall be the minimum personal protective level for all on-site personnel.

APPLICABLE LAWS AND REGULATIONS:

The excavation, removal, stockpiling, and transportation of contaminated soil shall be conducted in accordance with the Environmental Protection Agency (EPA) and the Rhode Island Department of Environmental Management (RIDEM) regulations, the RIDEM approved Soil Management Plan (SMP), Remedial Action Work Plan RAWP) and in compliance with all applicable permits.

The Contractor shall ensure that compliance with applicable regulations is maintained during all earthwork operations. The Contractor shall be required to maintain an operations log

during the earthwork activities to include, but not be limited to, dates of earthwork activities, dates and times of field sampling, soil management observations, and tracking related to stockpile generation as well as paperwork documenting lawful off-site disposition. In addition to the above, the Contractor is responsible for erosion and pollution controls in accordance with the Storm Water Pollution Protection Plan (SWPPP), local, State and Federal regulations as well as what is included in the Contract Documents. The Contractor shall submit a summary report to the Engineer on a daily basis to document the operations associated with earthwork activities.

SUBMITTALS:

The Contractor shall submit a written description of his proposed soil excavation plan to the Engineer for approval. The description shall include a list of all equipment, including sizes and capacities and the sequencing of all soil removal activities, and identify all on-site and off-site stockpile locations. The sequence shall identify specific excavations and earthmoving operations by baseline and stations. Proposed stockpile locations and capacities shall be identified. The Contractor shall be required to sequence his excavation operations so as not to exceed the stockpile location capacity. The Contractor shall coordinate with the State's environmental consultant for soil testing and stockpile rotation of material for soil to be removed from the site. The State's environmental consultant will conduct soil analysis on a 325 CY maximum rotation.

The Contractor shall maintain copies of the soil excavation plan and operational log. The operational log shall be submitted to the Engineer daily.

Hauling Slips: The Contractor shall prepare slips to document the transportation of the soil from the project to the final disposal site. The slips shall, as a minimum, list the following information: date, truck identification, truck driver's name, approximate quantity of soil hauled, weight, disposal location, and the Engineer's representative's signature. These slips will be prepared in duplicate. The Contractor shall retain one copy, and the second copy will be given to the Engineer at the end of each day in which soil is hauled.

EQUIPMENT/MATERIALS:

The Contractor shall supply and utilize all required equipment to adequately complete the contaminated soil excavation. During soil excavation, staked hay bales must be installed around the excavation and the stockpiles to minimize the effects of erosion and surface run-off. Contaminated soil, if stockpiled, shall be placed on and covered with polyethylene sheeting, as described in the SMP.

The Contractor is required to have the necessary personal protective equipment available as specified in the Contractor's site specific Health and Safety Plan and shall have access to an inventory of personal protection equipment in the event that the level of personal protection equipment needs to be upgraded.

During excavation or stockpiling, the Contractor shall minimize odors by methods including the use of odor suppressant shell material where necessary.

CONTAMINATED SOIL EXCAVATION:

The Contractor may choose and implement any effective and lawful method for handling contaminated soil encountered in the work area provided they perform the required excavation subject to the approval of the Engineer. The Contractor shall assume all responsibility for the adequacy of the methods, materials, documentation, and equipment employed.

During excavation of contaminated soil the Contractor shall be required to control dust and sedimentation erosion. Staked hay bales shall be installed as shown on the Plans or as directed by the Engineer. All excavated Type 1, 2, or 3 soils shall immediately be placed into trucks and hauled to the final location for disposal, or be stockpiled at locations selected by the Contractor and subject to the approval of the Engineer.

While engaged in contamination/hazardous materials removal, the Contractor shall be subject to on-site inspection by the RIDOT Inspector. If the work is in violation of the requirements of this specification, RIDOT will issue a stop work order to be in effect immediately and until the violation is resolved. Standby time and expenses required to resolve the violation shall be at the Contractor's expense.

The Contractor shall be responsible for obtaining all necessary permits, manifests, and bill of lading documentation in conjunction with contaminated/hazardous material removal, hauling and disposition; and he shall provide timely notification of such actions as may be required by applicable federal, state regional, and/or local authorities. RIDEM shall be notified within 24 hours if an unexpected change of conditions is encountered related to the presence of hazardous wastes or material encountered at the site.

All contaminated soil shall be disposed of at an off-site recycling or disposal facility in accordance with RIDEM regulations for recycling/disposal of these materials. Profiling for disposal of contaminated material will be the responsibility of RIDOT and its consultant. Additional testing and characterization required by the off-site receiving facility shall be the responsibility of the Contractor to perform at no additional cost to the State. All handling and disposal of these materials shall conform to the applicable RIDEM requirements for handling, storage, transporting, and disposal of contaminated /hazardous waste material. The Contractor shall be responsible for the submittal of material profiling data and any additional data obtained by the Contractor to the receiving facility and to RIDEM prior to the removal and final disposal of contaminated material from the site or the interim stockpile area. Where specifications, requirements, and reference documents vary, the more stringent requirements shall apply.

Stockpile soils will be analyzed by the Engineer for profiling for disposal. Data will be provided to the Contractor for disposal facility characterization. Disposal of material shall not be allowed at any facility that currently maintains a listing as a State or Federal waste site.

Contaminated soil classifications under this Contract shall be as follows:

Type 1A Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals have been are found to be below the Rhode Island Department of Environmental Management (RIDEM) Residential Direct Exposure Criteria (RDEC) through testing for TPH, PAHs, and/or RCRA 8 metals.

Type 1B Project soil in which levels of TPH, VOCs, PAHs, and RCRA 8 metals are found to be above the RIDEM RDEC, but within the limits of the I/CDEC, shall be disposed at a licensed facility. Concentrations are within disposal parameter limits allowed by the Rhode Island Resource Recovery Corporation for materials disposition at the Central Landfill as landfill cover.

Type 2 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM I/CDEC but are within parameters such that the material can be accepted for out-of-state landfill cover or landfilling without pretreatment or that are suitable for asphalt batching. This soil shall be disposed at a licensed facility.

Type 3 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to exceed the EPA and/or RIDEM hazardous waste characteristics necessitating disposal as hazardous waste.

METHOD OF MEASUREMENT:

Item 202.9902 "LOAD AND HAUL TYPE 1A SOIL" will be measured for payment by the "Cubic Yard" actually loaded and hauled in accordance with the Contract Documents and/or as directed by the Engineer.

Item 202.9903 "LOAD, AND HAUL CONTAMINATED SOIL, TYPE 1B" will be measured for payment by the "Ton" actually loaded and hauled for disposal in accordance with the Contract Documents and/or as directed by the Engineer. The number of tons will be determined from weight slips generated by the receiving disposal facility or other Contractor provided scale approved by the Engineer.

Item 202.9904 "LOAD, AND HAUL CONTAMINATED SOIL, TYPE 2" will be measured for payment by the "Ton" actually loaded and hauled for disposal in accordance with the Contract Documents and/or as directed by the Engineer. The number of tons will be

determined from weight slips generated by the receiving disposal facility or other Contractor provided scale approved by the Engineer.

Item 202.9905 "LOAD AND HAUL CONTAMINATED SOIL, TYPE 3" will be measured for payment by the "Ton" actually loaded and hauled for disposal in accordance with the Contract Documents and/or as directed by the Engineer. The number of tons will be determined from weight slips generated by the receiving disposal facility or other Contractor provided scale approved by the Engineer.

BASIS OF PAYMENT:

The accepted quantity of item 202.9902 "LOAD AND HAUL TYPE 1A SOIL" will be paid for at the contract unit price per "Cubic Yard" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepted quantity of item 202.9903 "LOAD, AND HAUL CONTAMINATED SOIL TYPE 1B" will be paid for at the contract unit price per "Ton" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepted quantity of item 202.9904 "LOAD, AND HAUL CONTAMINATED SOIL TYPE 2" will be paid for at the contract unit price per "Ton" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepted quantity of item 202.9905 "LOAD AND HAUL CONTAMINATED SOIL, TYPE 3" will be paid for at the contract unit price per "Ton" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepting facility's tipping fee shall be measured for payment under Item Code 202.9906 Disposal Fee for Contaminated and Hazardous Soil. The Contractor will be responsible for the cost of any additional analytical data required by the selected disposal facility.

TYPE 1B AND TYPE 2 SOIL CRITERIA ATTACHMENT

[a] Estimated quantitation limits
[b] Direct exposure criteria for PCBs consistent with the Toxic Substance Control Act (TSCA)
[c] Background Levels of Priority Pollutant Metals in Rhode Island Soils, T. O'Connor, RIDEM
[d] Direct exposure criteria for Lead consistent with the Rhode Island Department of Health Rules and Regulations for Lead Poisoning Prevention [R23-24.6PB], as amended

Substance	Industrial/Commercial (mg/kg)	Substance	Industrial/Commercial (mg/kg)
Volatile Organics			
Acetone	10,000	Ethylene dibromode (EDB)	0.07
Benzene	200	Isopropyl benzene	10,000
Bromodichloromethane	92	Methyl ethyl ketone	10,000
Bromoform	720	Methyl isobutyl ketone	10,000
Bromomethane	2,900	Methyl-tert-butyl-ether (MTBE)	10,000
Carbon tetrachloride	44	Methylene chloride	760
Chlorobenzene	10,000	Styrene	190
Chloroform	940	Tetrachloroethane,1,1,1,2	220
Dibromochloromethane	68	Tetrachloroethane,1,1,2,2	29
Dibromochloropropane (DBCP)	4.1	Tetrachloroethylene	110
Dichloroethane (1,1-)	10,000	Toluene	10,000
Dichloroethane (1,2-)	63	Trichloroethane,1,1,1-	10,000
Dichloroethene (1,1-)	9.5	Trichloroethane,1,1,2-	100
Dichloroethene (cis-1,2-)	10,000	Trichloroethylene	520
Dichloroethene (trans-1,2-)	10,000	Vinyl chloride	3.0
Dichloropropane (1,2)	84	Xylenes (Total)	10,000
Ethyl benzene	10,000		
Semivolatiles			
Acenaphthene	10,000	Diethyl phthalate	10,000
Acenaphthylene	10,000	Dimethyl phenol, 2,4-	10,000
Anthracene	10,000	Dimethyl phthalate	10,000
Benzo(a)anthracene	7.8	Dinitrophenol, 2,4-	4,100
Benzo(a)pyrene[a]	0.8	Dinitrotoluene, 2,4-	8.4
Benzo(b)fluoranthene	7.8	Fluoranthene	10,000
Benzo(g,h,I)perylene	10,000	Fluorene	10,000
Benzo(k)fluoranthene	78	Hexachlorobenzene	3.6
Biphenyl, 1,1-	10,000	Hexachlorobutadiene	73
Bis(2-ethylhexyl)phthalate	410	Hexachloroethane	410
Bis(2-chloroethyl)ether	5.2	Indeno(1,2,3-cd)pyrene	7.8
Bis(2-chloroisipropyl)ether	82	Methyl naphthalene, 2-	10,000
Chloroaniline, 4- (p-)	8,200	Naphthalene	10,000
Chlorophenol, 2-	10,000	Pentachlorophenol	48
Chrysene	780	Phenanthrene	10,000
Dibenzo(a,h)anthracene[a]	0.8	Phenol	10,000
Dichlorobenzene, 1,2- (o-DCB)	10,000	Pyrene	10,000
Dichlorobenzene, 1,3- (m-DCB)	10,000	Trichlorobenzene, 1,2,4-	10,000
Dichlorobenzene, 1,4- (p-DCB)	240	Trichlorophenol, 2,4,5-	10,000
Dichlorobenzidine, 3,3-	13	Trichlorophenol, 2,4,6-	520
Dichlorophenol, 2,4-	6,100		
Pesticides/PCBs			
Chlordane	4.4	Polychlorinated biphenyls (PCBs)[b]	10
Dieldrin	0.4		
Inorganics			
Antimony	820	Lead[d]	500
Arsenic[c]	7	Manganese	10,000
Barium	10,000	Mercury	610
Beryllium[c]	1.3	Nickel	10,000
Cadmium	1,000	Selenium	10,000
Chromium III (Trivalent)	10,000	Silver	10,000
Chromium VI (Hexavalent)	10,000	Thallium	140
Copper	10,000	Vanadium	10,000
Cyanide	10,000	Zinc	10,000

TYPE 3 SOIL CRITERIA ATTACHMENT

MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY CHARACTERISTIC BY TCLP

Contaminant	Regulatory Level (mg/L)	Contaminant	Regulatory Level (mg/L)
Arsenic	5.0	Hexachlorobutadien	0.5
Barium	100.0	Haxachloroethane	3.0
Benzene	0.5	Lead	5.0
Cadmium	1.0	Lindane	0.4
Carbon tetrachloride	0.5	Mercury	0.2
Chlordane	0.03	Methoxychlor	10.0
Chlorobenzene	100.0	Methyl ethyl ketone	200.0
Chloroform	6.0	Nitrobenzene	2.0
Chromium	5.0	Pentachlorophenol	100.0
o-Cresol	200.0[1]	Pyridine	5.0[2]
m-Cresol	200.0[1]	Selenium	1.0
p-Cresol	200.0[1]	Silver	5.0
Cresol	200.0[1]	Tetrachloroethylene	0.7
2,4—D	10.0	Toxaphene	0.5
1,4-Dichlorobenzene	7.5	Trichloroethylene	0.5
1,2-Dichloroethane	0.5	2,4,5-Trichlorophenol	400.0
1,1-Dichloroethylene	0.7	2,4,6-Trichlorophenol	2.0
2,4-Dinitrotoluene	0.13[2]	2,4,5-TP (Silvex)	1.0
Endrin	0.02	Vinyl chloride	0.2
Heptachlor (and its epoxide)	0.008		
Hexachlorobenzene	0.13[2]		

Analyses

Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, EPA Publication SW-846, is the source of analytical methods used in the identification and quantification of hazardous wastes for compliance with Subtitle C rules. Outlined below are the SW-846 test methods and corresponding regulatory levels set forth in 40 CFR 261, Subpart C, for characteristic wastes. Analyses are not performed for the identification of the other three categories of wastes.

1. Ignitability:
   - Liquids – a flash point of less than 60° C by test methods including American Society for Testing and Materials (ASTM) Standard D-93-79, D-93-80, or D-3278-78.
   - Non-liquids capable of causing fire at standard temperature and pressure, and burn hazardously when ignited.
   - Compressed gas – ignitable by test methods outlined in 49 CFR 173.300.
   - Oxidizers – test methods outlined in 49 CFR 173.151.

2. Corrosivity:
   - Aqueous solutions with a pH value of less than or equal to 2, or greater than or equal to 12.5 by Method 5.2 in SW-846.
   - Liquids that corrode steel by National Association of Corrosion Engineers Standard TM-01-69.

3. Reactivity: a waste exhibiting any one of the eight properties outlined in Section 261.23 (a).

4. Toxicity: extraction procedure by Method 1311 or total sample analysis. Refer to *Table 7 – Maximum Concentration of Contaminants for the Toxicity Characteristic by TCLP* for analytes and respective regulatory levels.

ITEM CODE 202.9906
DISPOSAL FEE FOR CONTAMINATED AND HAZARDOUS SOIL

DESCRIPTION:

This item of work consists of the disposal fee also known as tipping fee from a licensed disposal facility for the disposal of contaminated and hazardous soil.

APPLICABLE LAWS AND REGULATIONS:

The disposal of contaminated and hazardous soil shall be conducted in accordance with the EPA and the Rhode Island Department of Environmental Management (RIDEM) regulations, Soil Management Plan (SMP) and the Remedial Action Work Plans (RAWP).

SUBMITTALS:

The Contractor shall submit copies of the disposal facility's license verifying that the disposal facility will accept the particular contaminated and hazardous soil.

METHOD OF MEASUREMENT:

Item Code 202.9906 "Disposal Fee for Contaminated and Hazardous Soil" shall be measured for payment by the actual disposal fee cost, verified by the weight slips and itemized bills of lading, from a licensed disposal facility for the disposal of contaminated and hazardous soil. The total number of measured UNITS shall be equal to the actual disposal fee cost, i.e., one UNIT is equal to one dollar of disposal fee cost.

BASIS OF PAYMENT:

Item Code 202.9906 "Disposal Fee for Contaminated and Hazardous Soil" contains an estimated dollar figure that was established by the Department at 500,000 units at $1.00 each and is inserted in the Proposal as an authorized amount from which payments will be drawn. The price so stated shall constitute full compensation for all labor, materials and all other incidentals required to finish the work, complete and accepted by the Engineer.

This Item does not include any transportation fees and/or taxes associated with the hauling of contaminated and hazardous soil. Any Transportation fees and/or taxes associated with the hauling of contaminated and hazardous soil are considered incidental and included in the cost for Item Codes 202.9902, 202.9903, 202.9904, and 202.9905.

Appendix E

Draft Environmental Land Usage Restriction

ENVIRONMENTAL LAND USAGE RESTRICTION
TO BE COMPLETED UPON APPROVAL OF RAWP FROM RIDEM

This Declaration of Environmental Land Usage Restriction is made this ___ day of _____, 2012, by _____ (the "Grantor").

WITNESSETH:

WHEREAS, Grantor is the owner in fee simple of certain real property (the "Property") known as _____ located in the city/town of _____ designated as Lots _____ on the tax map of the city/town of _____, more particularly described on Exhibit A (Legal Description of Property) which is attached hereto and made a part hereof; and

WHEREAS, the Grantor has determined that the environmental land use restriction set forth below is consistent with regulations adopted by the Department of Environmental Management ("the Department") pursuant to Section 23-19.1-14 of the Rhode Island General Laws; and

WHEREAS, the Grantor believes that this environmental land use restriction will effectively protect public health and the environment from hazardous substances; and

WHEREAS, the Department's written approval of this environmental land use restriction is contained in the document entitled: [Remedial Decision Letter/Settlement Agreement/Order of Approval] issued pursuant to the Remediation Regulations; and

WHEREAS, the Property has been determined to be a Contaminated-Site and contains hazardous substances; and

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/Settlement Agreement/Order of Approval], the Grantor desires to impose certain restrictions upon the use, occupancy, and activities of and at the Contaminated-Site; and

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

NOW, THEREFORE, Grantor agrees as follows:

A. **Purpose:** In accordance with the [Remedial Decision Letter/Settlement Agreement/Order of Approval], the purpose of this environmental land use restriction is to assure:

i. that the Contaminated-Site is not used for residential activities

B. **Restrictions Applicable to the Contaminated-Site:** In furtherance of the purposes of this environmental land use restriction, Grantor shall assure that use, occupancy, and activity of and at the Contaminated-Site are restricted as follows:

i. No residential use of the Contaminated-Site shall be permitted

C. **No action shall be taken, allowed, suffered, or omitted if such action or omission is reasonably likely to:**

i. Create a risk of migration of hazardous substances or potential hazard to human health or the environment

D. **Release of Restriction; Alterations of Subject Area:** Grantor shall not make, or allow or suffer to be made, any alteration of any kind in, to, or about any portion of any of the Contaminated-Site inconsistent with this environmental land use restriction unless the Grantor has first received the Department's written approval of such alteration. If the Department determines that the proposed alteration is significant it may require the amendment of this restriction. Insignificant alterations will be approved by the Department via a letter from the Department. The Department shall not approve any such alteration and shall not release the Property from the provisions of this environmental land use restriction unless the Grantor demonstrates to the Department's satisfaction that Grantor has managed the Contaminated-Site in accordance with the Remediation Regulations.

E. **Notice to Lessees and Other Holders of Interests in the Property:** Grantor, or any future holder of any interest in the Property, shall cause any lease, grant, or other transfer of any interest in the Property to include a provision expressly requiring the lessee, grantee, or transferee to comply with this environmental land use restriction. The failure to include such provision shall not affect the validity or applicability to the Property of this environmental land use restriction.

F. **Severability and Termination:** If any court of competent jurisdiction determines that any provision of this Environmental Land Usage Restriction is invalid or unenforceable, the Grantor shall notify the Department in writing within 14 days of such determination.

G. **Binding Effect:** All of the terms, covenants and conditions of this Environmental Land UsageRestriction shall run with the land and shall be binding on the Grantor, the Grantor's successors and assigns, and each owner and any other party entitled to possession or use of the Property during such period of ownership or possession.

H. **Non-Compliance:** In the event that the terms of this Restriction are violated by the grantor or any future holder of any interest in the Property, this Restriction and all other approvals and agreements relating to the contaminated site shall be null and void.

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.

It is so agreed:

_____

Grantor Date

So Sworn Before Me:

_____

Notary Date

My Commission Expires:

_____

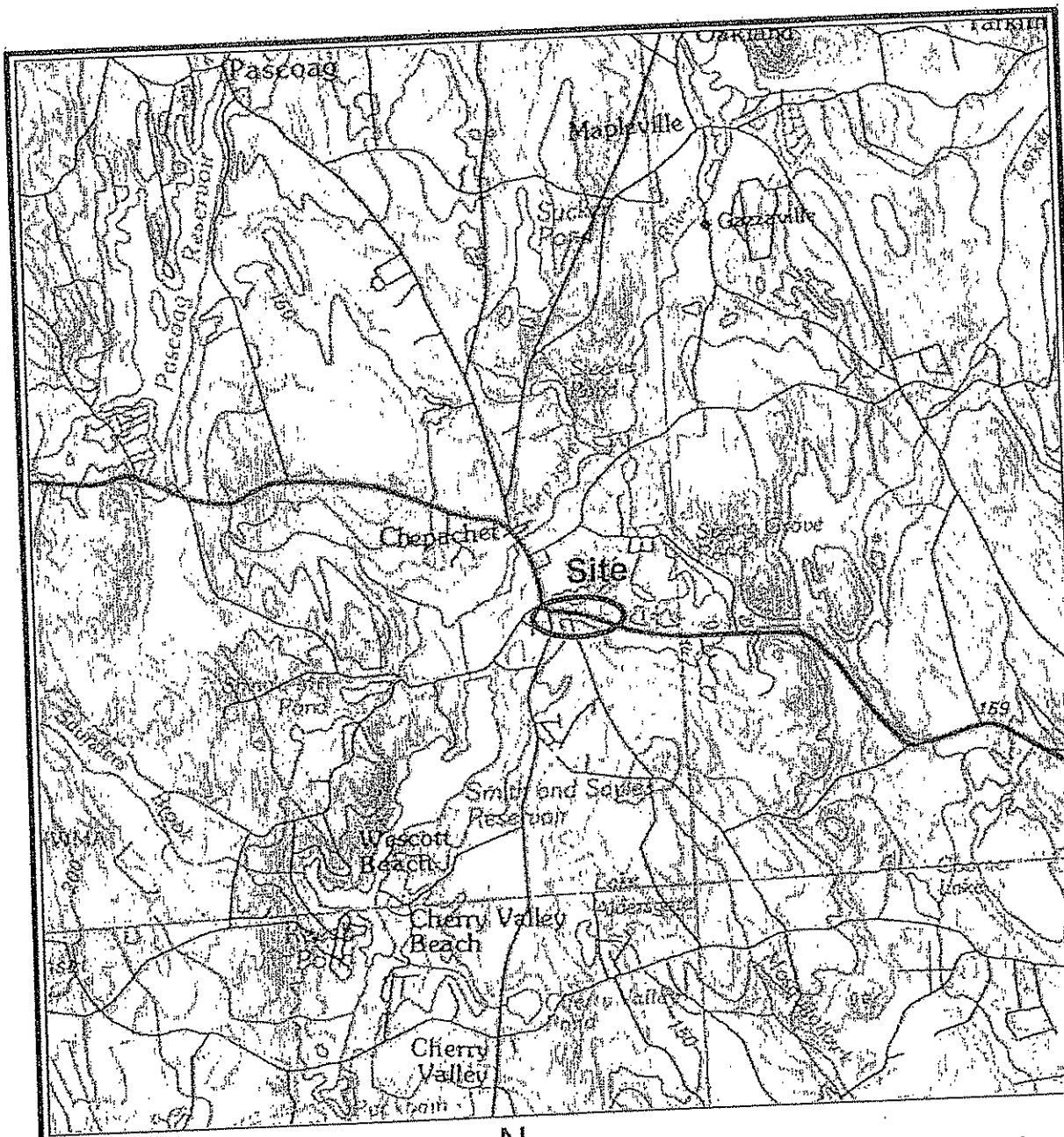
Appendix F

Operating Log

RIDOT Route 44 Contract 3C RIC No. 2012-CH-056
Operating Log
Glocester, RI

Date	Work Period	Amount of Soil Excavated	Field Screening Technique/Results	Final Disposition of Soil	Number of Samples Collected	Laboratory Analysis Performed

Figures



SOURCE:
U.S.G.S. TOPOGRAPHIC MAPS
CHEPACHET, RI QUADRANGLE,
MAP VERSION: 1975

AECOM

AECOM Environment
2 Technology Park Drive
Westford, Massachusetts 01886
T 978.589.3000 F 978.589.3100
www.aecom.com

FIGURE 1
SITE LOCATION MAP
RIDOT RT 44
GLOCESTER, RI

SCALE:	DATE:	PROJECT NUMBER:
AS NOTED	4/27/2010	60149137

Addendum No. 1

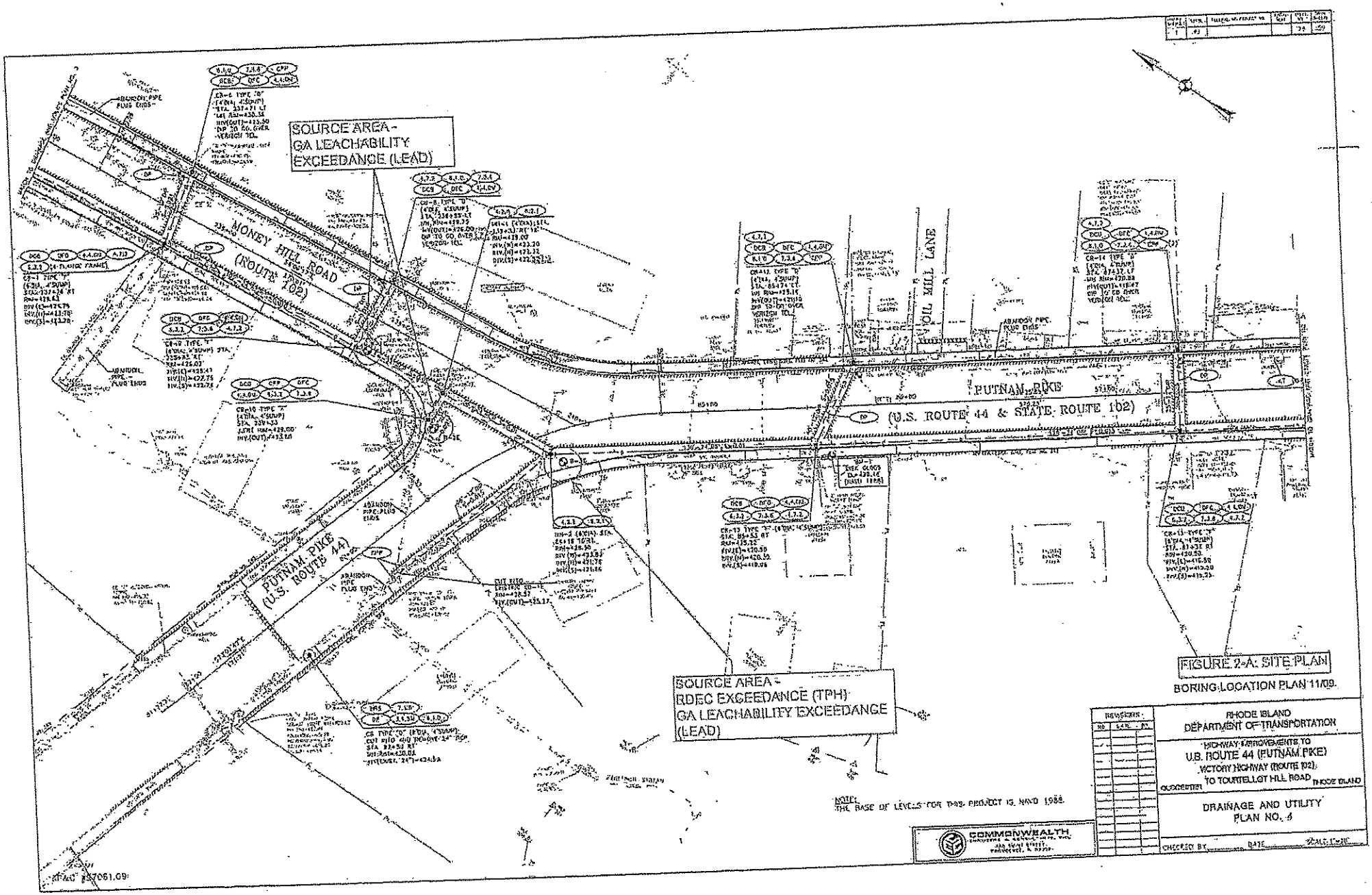


FIGURE 2-A: SITE PLAN

BORING LOCATION PLAN 11/09.

Addendum No. 1

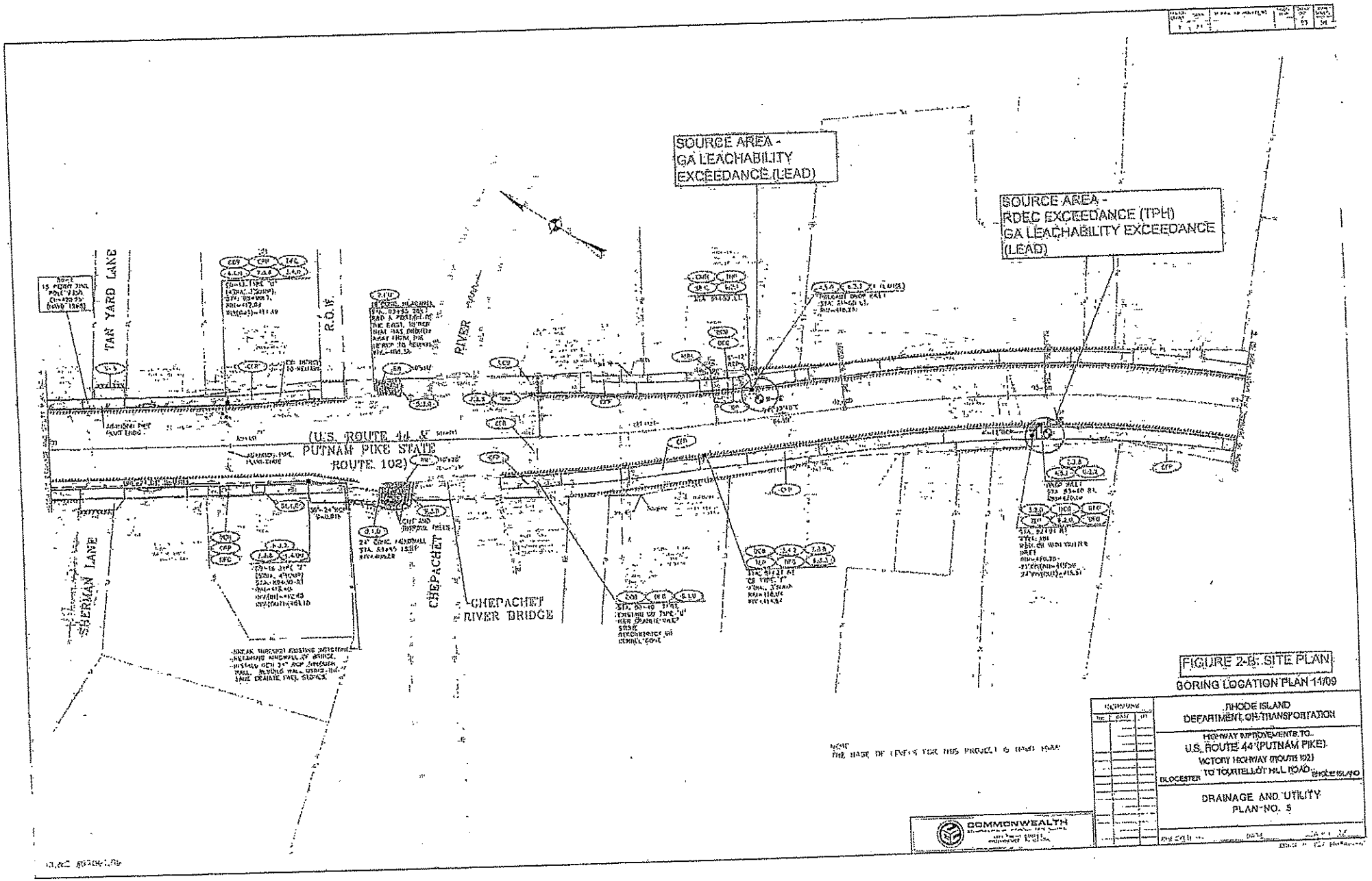


FIGURE 2-B: SITE PLAN

BORING LOCATION PLAN 11/09

Addendum No. 1

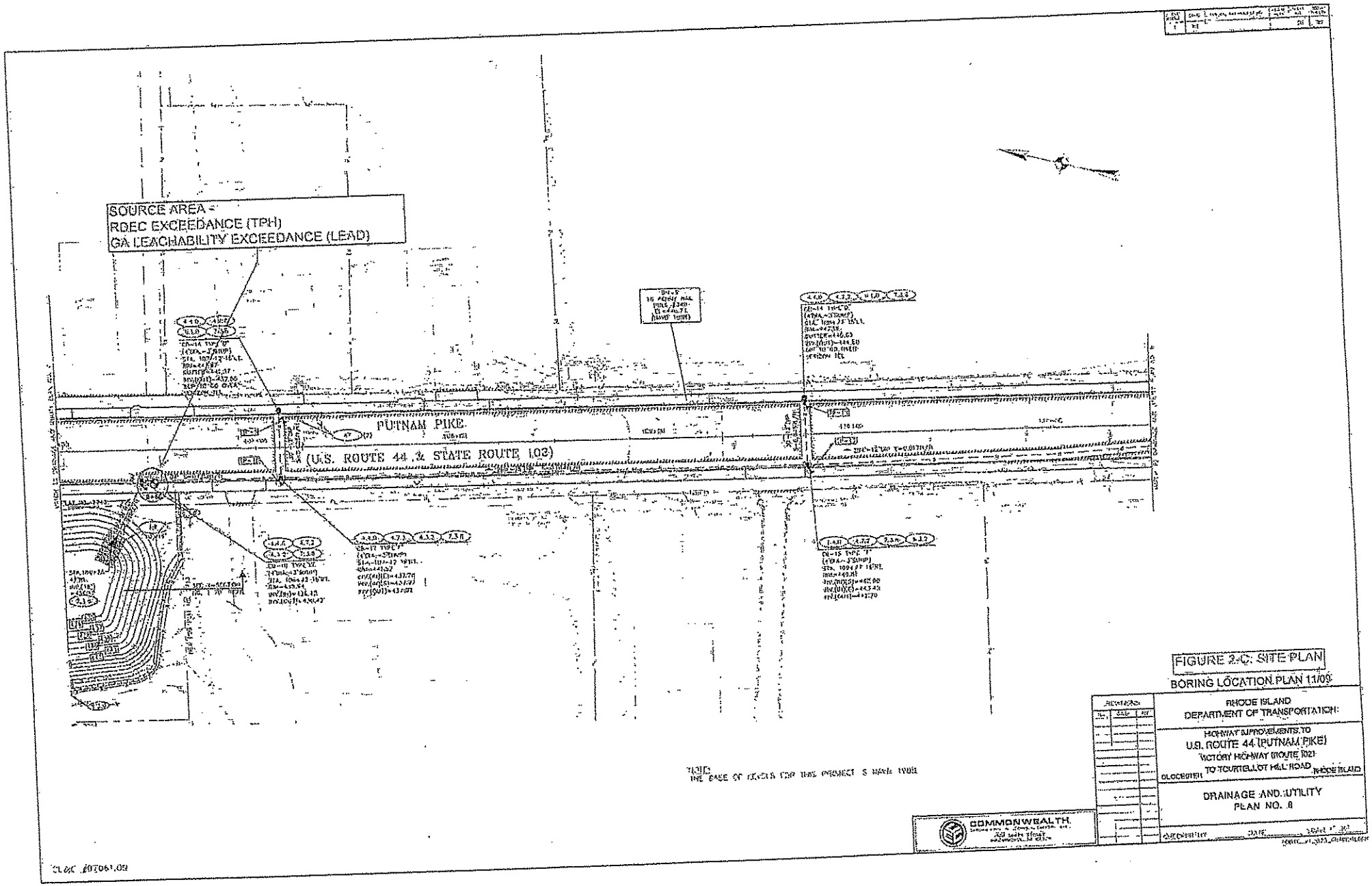


FIGURE 2-C: SITE PLAN

BORING LOCATION PLAN 11/09

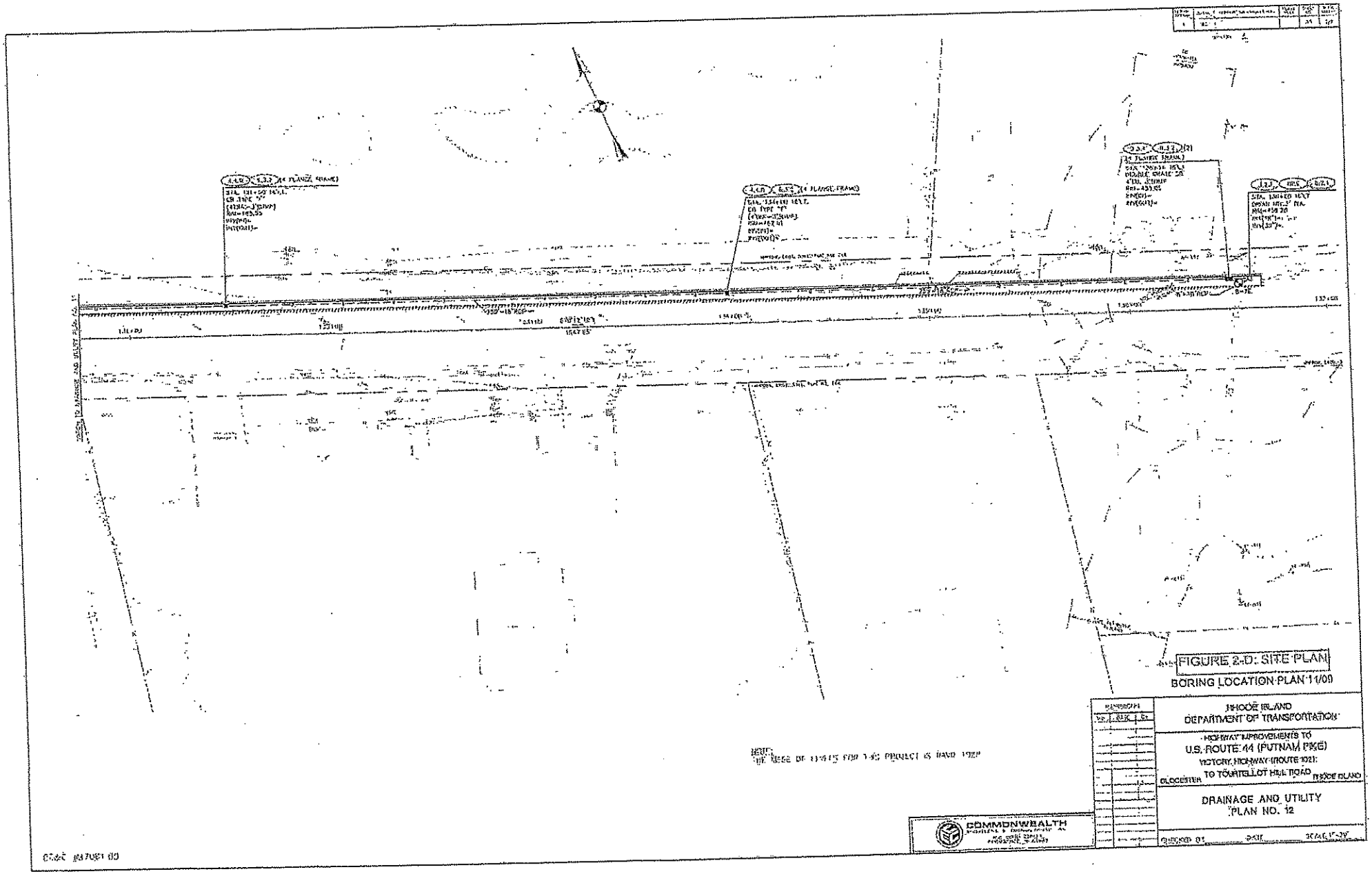
RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

HIGHWAY IMPROVEMENTS TO
U.S. ROUTE 44 (PUTNAM PIKE)
VICTORY HIGHWAY (ROUTE 102)
TO TOURTELLOT HILL ROAD
GLOCESTER RHODE ISLAND

DRAINAGE AND UTILITY
PLAN NO. 8

COMMONWEALTH

Addendum No. 1



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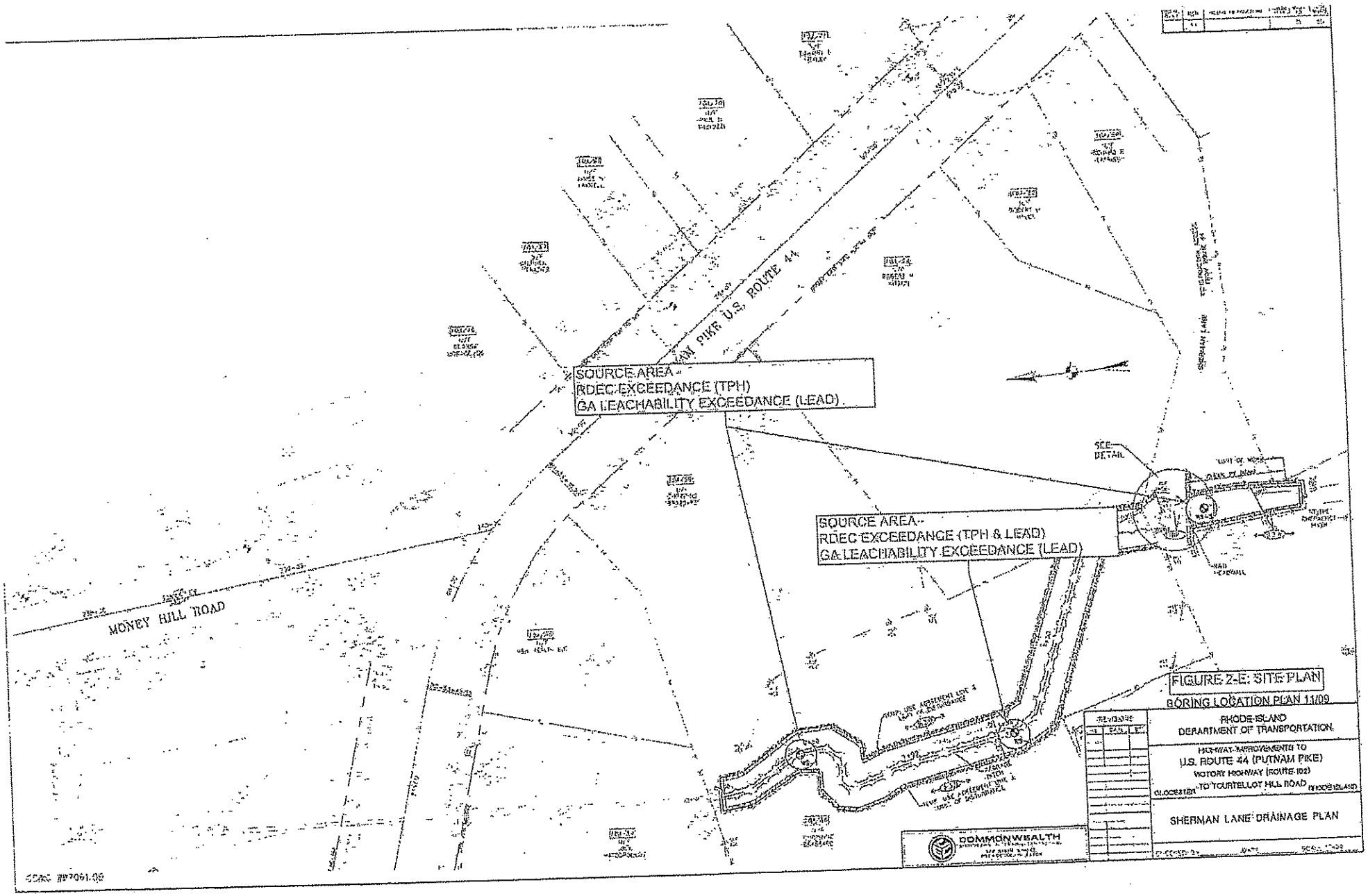


INDEX (Continued)
SPECIFICATIONS - JOB SPECIFIC
HIGHWAY IMPROVEMENTS US ROUTE 44 (PUTNAM PIKE) CONTRACT 3C

CODE 202.9901

HANDLING, HAULING, AND STOCKPILE MANAGEMENT OF CONTAMINATED SOILS

DESCRIPTION:

This item of work includes the Contractor's work effort required to locate a contamination-free suitable stockpile location that has been verified by soil testing and is acceptable to RIDOT, all fees necessary to acquire the right-of-use for the stockpile location, soil testing, all material and equipment necessary to establish and dismantle the various stockpile bins including but not limited to polyethylene sheets, precast concrete barrier sections, and temporary 6' high chain link fence, and the installation, maintenance and managing of erosion and dust controls. This item of work also includes the handling, hauling, unloading and stockpile management of contaminated or hazardous soil from the excavation location to and within the approved stockpile/testing location, documentation management of the contaminated soil, and the restoration of the stockpile area to its original condition upon completion of the project.

The work shall be performed in accordance with all appropriate sections of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, the RIDEM approved Soil Management Plan (SMP) and shall be in compliance with all applicable permits.

MATERIALS:

The Contractor shall supply and utilize all required materials to adequately complete contaminated soil handling, hauling and stockpiling. Personal protective equipment shall be as specified in the Contractor's site specific Health and Safety Plan.

All materials to be used shall be in accordance with all appropriate sections of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition, and all revisions.

SUBMITTALS:

The Contractor shall be responsible for the selection of a non-contaminated and suitable stockpile location and the acquisition of the permission to use agreement for each approved stockpile location. The Contractor selected stockpile location along with the soil testing results, and signed property owner approval letter shall be submitted to the Department within 30 days from the Notice to Proceed for approval by the Engineer.

The pre-construction stockpile testing Shop Drawing submittal shall include a letter signed by the owner of the perceptive property stating that he is fully aware of the intended use of the property as a temporary contaminated soil management stockpile location and is fully aware of what types of contaminated soil will be stockpiled on said property.

The Contractor shall submit a written description of their proposed soil excavation plan to the Engineer for approval. The description shall include a list of all equipment, including size and capacities, and the sequence of soil removal activities. The sequence shall identify specific excavations and earthmoving operations by baseline and stations. Proposed stockpile locations and capacities shall be identified. The Contractor shall maintain copies of the soil excavation plan and operational log. The operational log shall be submitted to the Engineer daily.

The post-construction stockpile testing Shop Drawing shall include a letter signed by the property owner stating that the property has been restored to its initial condition and has reviewed all soil testing data.

CONSTRUCTION METHODS:

A minimum of four (4) composite soil samples shall be collected from each potential stockpile site selected by the Contractor and analyzed for volatile organic compounds (VOCs), Total Petroleum Hydrocarbons (TPH), Priority Pollutant 13 (PP13) Metals plus barium, vanadium, and sodium, chloride, nitrate, and nitrite, toxicity characteristic leaching procedure (TCLP), lead and mercury, reactive cyanide, and reactive sulfide. Upon the completion of all excavations and the need for the stockpile location, additional soil samples will be taken at the same locations as the initial collection and tested for the same contaminants. The post-construction testing results must verify that the stockpile location was not contaminated by the soils that were brought to this site from this project. Should the post-construction soil testing results indicate that contamination has occurred, the Contractor shall be responsible for all clean-up costs necessary to restore the property.

The State requires that its General Contractor, under the provisions of the General Requirements and Covenants of the Rhode Island Purchasing Regulations, Section 12 – Rhode Island Department of Transportation Projects "to defend, indemnify and hold harmless the State from suits, actions or claims of any character brought because of any injuries or damage received or sustained by any person(s) or property resulting from the Contractor's or its subcontractor(s)' actions."

The Contractor shall supply and utilize all required equipment to adequately place and maintain the stockpiles in a neat and orderly fashion in 325 cubic yard intervals within approved stockpile areas. All stockpiled soil shall be placed entirely on one layer of 10-mil polyethylene and be completely covered with a_6 mil layer of polyethylene, at the completion of each day. The polyethylene sheets shall overlap adjacent sheets by four feet minimum. The stockpiles shall be surrounded by precast concrete barrier sections, temporary 6' high chain link fence, and staked hay bales as shown on the detail included in the plans. Should it be determined that additional stockpiles are required, the materials and set-up required will be at the Contractor's expense. Additional stockpile areas selected by the Contractor shall be subject to the approval of the Engineer.

All costs associated with soil sampling and testing necessary to obtain an approved stockpile site is the responsibility of the Contractor.

It will be the responsibility of the Contractor to ensure that each stockpile location has been placed on and covered by the required polyethylene, and that the erosion controls are in place. It will be the Contractor's responsibility to maintain dust control as required by the SMP at the stockpile locations and at all travel routes leading to and from the stockpile areas.

The Contractor is required to have the necessary personal protective equipment available as specified in the Contractor's site specific Health and Safety Plan and shall have access to an inventory of personal protection equipment in the event that the level of personal protection equipment needs to be upgraded.

During excavation and/or stockpiling, the Contractor shall minimize odors by methods including the use of odor suppressant shell material where necessary.

Subject to the approval of the Engineer, the Contractor may choose to implement any effective and lawful methods for handling contaminated soil encountered in the work area, provided the required handling and excavation methods are performed. The Contractor shall assume all responsibility for the adequacy of the methods, materials, documentation, and equipment employed.

The Contractor shall maintain the stockpile until the soil has been tested and approved for legal disposal off-site. See Job Specific Specifications for Items 202.9902 through 202.9905 for testing requirements. Once a stockpile has reached its capacity and is ready to be tested, the Contractor shall immediately notify the Resident Engineer. The RIDOT's Environmental Representative shall be notified within 24 hours to obtain the required samples for laboratory analysis. The Contractor shall prepare his schedule of work to allow four (4) working days from his notification to the Engineer that the stockpile has reached its capacity to receive the results of the soil testing and classification for disposal.

The Contractor shall maintain an inventory of supplies required to execute the work described herein. This inventory shall be used to implement a contingency plan in the event of unexpected conditions.

Upon completion of the use of the stockpile, the contractor shall be required to remove and dispose of the polyethylene sheeting, concrete barrier, temporary fence, and hay bales. The Contractor shall perform all of the post-construction testing and restore the stockpile areas to a condition acceptable to the Engineer.

METHOD OF MEASUREMENT:

This item will not be measured for payment.

BASIS OF PAYMENT:

Item 202.9901 "HANDLING, HAULING AND STOCKPILE MANAGEMENT OF CONTAMINATED SOILS" will be paid for at its respective contract unit price per "Lump Sum" as listed in the Proposal. The price so stated shall constitute full and complete compensation including but not limited to the acquisition of an approved stockpile site, pre-and-post stockpile site testing, all testing fees, reports, all labor, materials, precast concrete barrier, temporary 6' high chain link fence, staked hay bales, odor suppressant, water for dust control, tools and equipment, the removal and disposal of all polyethylene sheeting, concrete barrier, fence, hay bales, restoration of the stockpile areas, and all other incidentals required to complete the work described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

Excavation for the stream restoration will be paid for as Unclassified Excavation, Code 202.0300. Trench Excavation and dewatering for drainage pipes and drainage structures will not be paid for separately in accordance with the RIDOT Standard Specifications.

CODE 202.9902 LOAD AND HAUL TYPE 1A SOIL
CODE 202.9903 LOAD AND HAUL CONTAMINATED SOIL, TYPE 1B
CODE 202.9904 LOAD AND HAUL CONTAMINATED SOIL, TYPE 2
CODE 202.9905 LOAD AND HAUL CONTAMINATED SOIL, TYPE 3

DESCRIPTION:

This item of work includes all special handling, separation of debris, wood, or large cobbles, loading and hauling of contaminated or hazardous soil from the stockpile and testing location to an off-site Industrial/Commercial property, recycling or disposal facility in accordance with RIDEM regulations for recycling/disposal of these materials and as directed by the Engineer.

During the course of the project construction, contaminated soil shall be excavated. Soil in areas of the site has been documented to be contaminated. Available analytical data is shown in the Environmental Site Investigation Report (SIR) for this project and is included in the General Provisions – Contract Specific, Appendix "J".

HEALTH AND SAFETY PLAN:

The Contractor shall produce and maintain a site specific Health and Safety Plan (HASP) in compliance with the Occupational Safety and Health Administration (OSHA) Standards defined in 29 CFR 1910.120. The project HASP shall be implemented as part of this work.

The Contractor's employees and Subcontractor's employees who will be potentially exposed to the subsurface soils in the SMP are required to have OSHA 40-hour health and safety training and the 8 hour refresher training, if applicable. The Contractor shall provide training certificates to the Engineer for the persons that will be performing the work.

If visible dust is generated, the level of dermal and respiratory protection shall be determined based upon periodic air monitoring to be performed by the Contractor and the requirements of the Site-specific HASP. The Engineer may conduct duplicate air monitoring for quality assurance purposes. Level D protection shall be the minimum personal protective level for all on-site personnel.

APPLICABLE LAWS AND REGULATIONS:

The excavation, removal, stockpiling, and transportation of contaminated soil shall be conducted in accordance with the Environmental Protection Agency (EPA) and the Rhode Island Department of Environmental Management (RIDEM) regulations, the RIDEM approved Soil Management Plan (SMP), Remedial Action Work Plan RAWP) and in compliance with all applicable permits.

The Contractor shall ensure that compliance with applicable regulations is maintained during all earthwork operations. The Contractor shall be required to maintain an operations log

Stockpile soils will be analyzed by the Engineer for profiling for disposal. Data will be provided to the Contractor for disposal facility characterization. Disposal of material shall not be allowed at any facility that currently maintains a listing as a State or Federal waste site.

Contaminated soil classifications under this Contract shall be as follows:

Type 1A Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals have been are found to be below the Rhode Island Department of Environmental Management (RIDEM) Residential Direct Exposure Criteria (RDEC) through testing for TPH, PAHs, and/or RCRA 8 metals.

Type 1B Project soil in which levels of TPH, VOCs, PAHs, and RCRA 8 metals are found to be above the RIDEM RDEC, but within the limits of the I/CDEC, shall be disposed at a licensed facility. Concentrations are within disposal parameter limits allowed by the Rhode Island Resource Recovery Corporation for materials disposition at the Central Landfill as landfill cover.

Type 2 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to be above the RIDEM I/CDEC but are within parameters such that the material can be accepted for out-of-state landfill cover or landfilling without pretreatment or that are suitable for asphalt batching. This soil shall be disposed at a licensed facility.

Type 3 Project soil in which levels of TPH, VOCs, PAHs, and/or RCRA 8 metals are found to exceed the EPA and/or RIDEM hazardous waste characteristics necessitating disposal as hazardous waste.

METHOD OF MEASUREMENT:

Item 202.9902 "LOAD AND HAUL TYPE 1A SOIL" will be measured for payment by the "Cubic Yard" actually loaded and hauled in accordance with the Contract Documents and/or as directed by the Engineer.

Item 202.9903 "LOAD, AND HAUL CONTAMINATED SOIL, TYPE 1B" will be measured for payment by the "Ton" actually loaded and hauled for disposal in accordance with the Contract Documents and/or as directed by the Engineer. The number of tons will be determined from weight slips generated by the receiving disposal facility or other Contractor provided scale approved by the Engineer.

Item 202.9904 "LOAD, AND HAUL CONTAMINATED SOIL, TYPE 2" will be measured for payment by the "Ton" actually loaded and hauled for disposal in accordance with the Contract Documents and/or as directed by the Engineer. The number of tons will be

determined from weight slips generated by the receiving disposal facility or other Contractor provided scale approved by the Engineer.

Item 202.9905 "LOAD AND HAUL CONTAMINATED SOIL, TYPE 3" will be measured for payment by the "Ton" actually loaded and hauled for disposal in accordance with the Contract Documents and/or as directed by the Engineer. The number of tons will be determined from weight slips generated by the receiving disposal facility or other Contractor provided scale approved by the Engineer.

BASIS OF PAYMENT:

The accepted quantity of item 202.9902 "LOAD AND HAUL TYPE 1A SOIL" will be paid for at the contract unit price per "Cubic Yard" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepted quantity of item 202.9903 "LOAD, AND HAUL CONTAMINATED SOIL TYPE 1B" will be paid for at the contract unit price per "Ton" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepted quantity of item 202.9904 "LOAD, AND HAUL CONTAMINATED SOIL TYPE 2" will be paid for at the contract unit price per "Ton" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepted quantity of item 202.9905 "LOAD AND HAUL CONTAMINATED SOIL, TYPE 3" will be paid for at the contract unit price per "Ton" as listed in the Proposal. The price so stated shall constitute full and complete compensation for all labor, materials, tools, and equipment and all other incidentals and costs such as insurance and any hauling fees required to complete the work as described in these Special Provisions and elsewhere in the Contract Documents, complete in place and accepted by the Engineer.

The accepting facility's tipping fee shall be measured for payment under Item Code 202.9906 Disposal Fee for Contaminated and Hazardous Soil. The Contractor will be responsible for the cost of any additional analytical data required by the selected disposal facility.

CODE 807.9901

POINTING AND GROUTING EXISTING STONE MASONRY WALLS

DESCRIPTION:

The work under this code shall include the pointing and grouting (with mortar) open or deteriorated joints on existing stone masonry walls at areas shown on the plans or as directed by the Engineer.

MATERIALS & CONSTRUCTION METHODS:

Pointing and grouting material shall be mixed in accordance with **Subsection M.04.03.5; Mortar** of the Standard Specifications. The quantity of water used shall be limited so that the mixed mortar is sufficiently plastic enough to work into the stone joints. Mortar that has been mixed and unused for more than 30 minutes shall be considered unsuitable and shall be discarded. Retempering will not be permitted. The mortar shall be integrally colored mortar to match the existing joint material.

The work shall be accomplished in accordance with **Subsection 807.03.3(c)(2); Pointing** of the Standard Specifications, and as described below. Joints to be pointed shall be cleaned of all loose or unsound mortar, dirt, vegetation or other foreign materials. All loose mortar or stone shall be raked out to a minimum depth of two inches. Joints exceeding 1½ -inches in width shall be packed with stones, angular in shape, to fill excessive voids. Mortar material shall be thoroughly packed to completely fill the entire depths of all voids and extend to the outer adjacent stone face to form a slightly rounded edge. Excess mortar shall be cleaned from adjacent stone work.

Prior to the removal and disposal of damaged concrete, the Contractor shall be responsible to design, furnish, fabricate and erect temporary shielding and netting to contain and collect the debris from the demolition procedure and prevent it from falling on the riverbanks and entering the river. The Contractor's proposed means and methods shall be submitted to the Engineer for review and approval prior to commencing with the work. This work shall be in accordance with the applicable sections of specification "Temporary Deck Underside & Side Protective Shielding" (included in the Rhode Island Compilation of Approved Specifications), excluding Method of Measurement and Basis of Payment. This shall also include maintaining (during construction) and removing the temporary shielding and netting once all work has been completed over the waterway. No separate payment will be made for this work. All costs associated with the temporary shielding and netting shall be included under the payment for this item.

The requirements regarding weather limitations shall be adhered to as stipulated in Subsection 807.03.1 of the Rhode Island Standard Specifications, except that no work shall be constructed when temperatures are expected to fall below 40 °F within 36 hours of placement or repair, unless written permission is granted from the Engineer. The Contractor shall submit for approval cold weather construction materials and methods, and shall adhere to conditions set forth by the Engineer. The materials and work associated with weather limitations is considered incidental and shall be performed at no additional cost to the State.

METHOD OF MEASUREMENT:

The quantity of "Pointing and Grouting Existing Stone Masonry Walls" shall be measured by the "Cubic Foot" of joint pointed and grouted, in accordance with this Special Provision, the Contract drawings, and/or as directed by the Engineer.

BASIS OF PAYMENT:

The accepted quantity of "Pointing and Grouting Existing Stone Masonry Walls" will be paid at the contract unit price per cubic foot as designated in the Proposal. This payment shall constitute full compensation for furnishing all labor, tools, equipment, materials (including but not limited to cleaning and preparing joints, integrally colored mortar, protection of existing stone masonry and temporary debris shielding and netting) and any other incidentals necessary to satisfactorily complete the work, complete and accepted by the Engineer.

CODE 817.9901

REPAIRS TO STRUCTURAL CONCRETE MASONRY WITH INTEGRALLY COLORED PATCHING MORTAR

DESCRIPTION: Work under this item will consist of removing all deteriorated, disintegrated, soft, honeycombed, fractured, or otherwise defective concrete and replacing with integrally colored patching mortar at the locations shown on the Plans or as directed by the Engineer. The mortar shall be of the class, color, texture and aggregates from approved sources that closely match the predominant color, texture and aggregates of the existing concrete structure as specified in the plans and as approved by the Engineer and the RIDOT Preservation Specialist. Repairs shall include, but will not be limited to: designing, furnishing, fabricating, erecting and removal of temporary shielding and netting, removal and disposal of damaged concrete, cleaning and preparing of the bonding surface, cleaning of existing reinforcing steel, placing of additional reinforcing steel where required, application of a bonding agent, and placement of new concrete repair materials to restore the structural elements to the original line, grade, surface finish (color and texture), and design structural capacity. All repair work shall be performed in accordance with Section 817 of the Rhode Island Standard Specifications and latest revisions and as modified in this specification.

Repair of concrete will be performed with skilled workmen. The Engineer shall be notified of any repair work no later than one week prior to the scheduled repair work.

MATERIALS: All proposed repair materials shall be in accordance with Section M.02 of the Rhode Island Standard Specifications for Road and Bridge Construction and be listed on the RIDOT Approved List of Materials and Suppliers except as modified under this specification.

Aggregates. The fine and coarse aggregates must be approved by the Engineer as to color and texture.

Integrally Colored Patching Mortar: Patching mortar shall conform to the requirements of ASTM C928.

Coloring Agent. Coloring agents for integrally colored patching mortar shall meet the requirements of ASTM C979 and be approved by the Engineer. Coloring agents shall be used in accordance with manufacturer's recommendations.

Portland Cement Bonding Grout Slurry: The bonding grout slurry shall have the cement and mortar sand proportioned 1:1 by volume. Water shall be added in sufficient quantity to form a slurry.

Concrete Anchors: Mechanical concrete anchors shall be hooked type expansion bolts galvanized in accordance with the Rhode Island Standard Specifications of a type to be approved by the Engineer.

Wire Mesh Reinforcement: Wire mesh shall be galvanized, welded fabric no. 12 gage wire (minimum size) spaced two inches in each direction. Wire fabric shall conform to the requirements of Section M.05.02.01 of the Rhode Island Standard Specifications.

Prior to performing the field trial runs of the repair materials the Contractor shall submit to the Engineer and RIDOT Preservation Specialist one prototype (1' x 1' x 3" min.) for each concrete classification, mortar, color and texture as required by the project. The prototype(s) must be submitted to the Engineer and RIDOT Preservation Specialist in advance to allow for review and approval of color and texture of the repair material(s). The Contractor shall also provide in writing to the Engineer, the mix design, and finishing methods for obtaining any required surface finish for each repair material. The prototype(s) must be approved in writing by the Engineer and in consultation with the RIDOT Preservation Specialist.

CONSTRUCTION METHODS: Construction methods shall conform to Section 817 of the RI Standard Specifications except as otherwise provided in this Specification.

Weather Limitations: Concrete repair materials shall be used in accordance with the temperatures and ambient conditions requirements listed in Section 601 and/or the manufacturer's recommendations.

Prior to the removal and disposal of damaged concrete, the Contractor shall be responsible to design, furnish, fabricate and erect temporary shielding and netting to contain and collect the debris from the demolition procedure and prevent it from entering the river. The Contractor's proposed means and methods shall be submitted to the Engineer for review and approval prior to commencing with the work. This work shall be in accordance with the applicable sections of specification "Temporary Deck Underside & Side Protective Shielding" (included in the Rhode Island Compilation of Approved Specifications), excluding Method of Measurement and Basis of Payment. This shall also include maintaining (during construction) and removing the temporary shielding and netting once all work has been completed over the waterway. No separate payment will be made for this work. All costs associated with the temporary shielding and netting shall be included under the payment for this item.

APPLICATION: Immediately prior to placing the mortar on a previously prepared and approved concrete surface, the entire area to be patched shall be coated with a Portland cement bonding grout slurry or an epoxy bonding agent compatible with the repair material.

The consistency of the Portland cement bonding grout slurry shall be such that it can be applied with a brush on a prepared moist concrete surface in a thin (approximately 1/8") even coating that will not run or puddle. Excess bonding grout will not be permitted to collect in pockets. The Portland cement bonding grout shall be applied to the concrete and the surfaces of the reinforcing bars, and into the spaces between the reinforcing bars and the prepared concrete surfaces. Care shall be taken to ensure that all surface area receive a thorough, even coating.

The rate of bonding grout application shall be limited to that surface area which can be covered with new mortar before the bonding grout begins to dry out. Any grout that has dried or become unworkable, as determined by the Engineer, shall not be incorporated in the work. In the event drying does occur, the Contractor shall remove the bonding grout and place new bonding grout. The removal of the bonding grout shall be by a method approved by the Engineer at the Contractor's expense.

PLACING AND CONSOLIDATION: Integrally colored patching mortar shall be placed in accordance with manufacturer's recommendations after the application of the bonding slurry.

If more than one lift layer is required to perform the repair, the previously placed lift layer will not be allowed to dry, and its surface shall be roughened prior to placing the next layer.

Patching mortar shall not be applied when the ambient temperature is below 45 degrees F or in accordance with the manufacturer's recommendations.

FINISHING: All exposed surfaces shall be finished straight and true, approximating the original contour as close as practicable. The final finished surfaces shall match the texture, color and aggregate exposure of the existing concrete surfaces adjoining or proximate to the area where new concrete has been placed.

The Contractor shall capture all the waste and water from the finishing operations, process and dispose these materials. Any materials and/or labor resulting from the surface finishing operations, including sedimentation and dewatering controls shall be considered incidental to the cost of this item.

CURING: All curing procedures and methods shall be completed according to the color additive manufacturer's recommendations and as specified in Section 601 of the RI Standard Specifications or as otherwise directed by the Engineer. Use of curing compounds is not permitted unless specifically required by the manufacturer of the color additive.

METHOD OF MEASUREMENT: The unit of measurement for "Repairs to Structural Concrete Masonry with Integrally Colored Patching Mortar" shall be the number of cubic feet of integrally colored patching mortar required in place, to establish the final finish of the exposed surface as specified above.

BASIS OF PAYMENT: Payment for "Repairs to Structural Concrete Masonry with Integrally Colored Patching Mortar" shall constitute full compensation for furnishing all materials, labor, equipment, tools (including but not limited to scaffolds, shielding, netting, wire mesh, anchors, including bonding agent) and all incidentals necessary to complete this item in accordance with these Special Provisions and the Standard Specifications, and to the satisfaction of the Engineer. No additional payment will be made for rebound, overlapping or other loss of material.

CODE 817.9910

STRUCTURAL CONCRETE CRACK REPAIR BY EPOXY-RESIN BASE ADHESIVE INJECTION

DESCRIPTION: The work of this section shall consist of surface preparation, setting injection ports, furnishing and injection epoxy-resin-base adhesives, and cleaning the surfaces after repairs. Further, it shall include furnishing of all labor, equipment, materials, temporary shielding and netting and necessary incidentals to render the work of this section complete.

MATERIALS: The material to be used for injection shall be a low viscosity two part epoxy resin system conforming to ASTM C-881, Type IV and meet the required grade and class to adequately perform its function.

All products must be on the RIDOT Approved List of Materials and Suppliers. All products must be used in accordance with the approved manufacturer's recommendations.

Quality Control – Testing and certification are required on each lot of the adhesive supplied under this specification.

Manufacturer shall certify that every batch of material supplied conforms to this specification and shall submit to the Engineer certified test results for every batch.

Labeling, packaging and storage shall conform to the requirements of ASTM C881 and shall include the following information:

- Health hazard warnings, precautions for handling and recommended first aid procedures in case of contact.
- Mix ratio by volume.

Surface Seal – A surface seal material recommended by the adhesive manufacturer shall be used to confine the injection adhesive in the crack during injection and curing. It shall have adequate strength to hold injection fittings or ports and prevent vent leakage during injection.

Injection equipment shall be either by automated or by manual means as required by the manufacturer for the intended application.

CONSTRUCTION METHODS:

Prior to the removal and disposal of damaged concrete, the Contractor shall be responsible to design, furnish, fabricate and erect temporary shielding and netting to contain and collect the debris from the demolition procedure and prevent it from entering the river. The Contractor's proposed means and methods shall be submitted to the Engineer for review and approval prior to commencing with the work. This work shall be in accordance with the applicable sections of specification "Temporary Deck Underside & Side Protective Shielding" (included in the Rhode Island Compilation of Approved Specifications), excluding Method of Measurement and Basis of Payment. This shall also include maintaining (during construction) and removing the temporary shielding and netting once all work has been completed over the waterway. No separate payment will be made for this work. All costs associated with the temporary shielding and netting shall be included under the payment for this item.

Surface Preparation

1) All deteriorated concrete adjacent to the cracks and area of application shall be removed before the work of this section will be permitted to begin.

2) Surfaces adjacent to cracks or other areas of application shall be cleaned of dirt, dust, grease, oil, efflorescence or other foreign matter detrimental to the bond of epoxy injection surface seal system. Acids and corrosives shall not be permitted. Method of cleaning shall not introduce foreign materials into the crack so that it hinders the penetration of the epoxy adhesive.

3) Entry ports shall be provided along the crack at manufactured recommended intervals.

Component Ratio Calibration Test

The mixing head of the injection equipment shall be disconnected and the two adhesive components shall be pumped simultaneously through two independent valved nozzles. Both adhesive components shall be simultaneously discharged during the same time period shall be compared to determine the volume.

The Engineer at any time without prior notification to the Contractor shall request the Contractor to conduct the calibration test specified above.

Epoxy Injection

Epoxy injection shall be performed in accordance with the manufacturer's recommended methods. If the application procedure is not available, the Contractor shall use the following epoxy injection technique.

1) Injection of epoxy adhesive shall begin at a lower entry port and continue until there is an appearance of epoxy adhesive at the next entry port adjacent to the entry port being pumped.

2) When epoxy adhesive travel is indicated by appearance at the next adjacent port, injection shall be discontinued on the entry port being pumped, and epoxy injection shall be transferred to next adjacent port where epoxy adhesive has appeared.

3) Perform epoxy adhesive injection continuously until all cracks within the crack network between the designated port intervals are completely filled.

4) If port to port travel of epoxy adhesive is not indicated, the work shall immediately be stopped and the Engineer notified.

5) Minimum ambient temperature at time of injection shall be 45°F or as recommended by the manufacturer.

6) The applicator engaged in the epoxy injection process shall be familiar with the specific epoxy injection indicated, as well as the operation, maintenance and trouble shooting of equipment.

Finishing

1) When cracks are completely filled, epoxy shall be cured for sufficient time in accordance with manufacture's recommendation.

2) Surface seal material and injection adhesive runs or spills shall be removed from concrete surfaces in a manner recommended by the manufacture and approved by the Engineer.

3) The face of the crack shall be finished flush to the adjacent surface showing no indentations or protrusions caused by the placement of entry ports.

METHOD OF MEASUREMENT: "Structural Concrete Crack Repair by Epoxy-Resin-Base Adhesive Injection" shall be measured on per linear foot basis of field measured port to port concrete crack length repaired, and accepted.

BASIS OF PAYMENT: The accepted quantity of "Structural Concrete Crack Repair by Epoxy-Resign-Base Adhesive Injection" shall be paid for at the contract unit price bid as set forth in the Proposal, per liner foot, which price shall constitute full compensation for all materials, labor, tools, equipment (including but not limited to scaffolds, shielding, netting) and incidentals necessary for the proper completion of the work specified, shown on the plans, complete and accepted by the Engineer.

CODE 202.99 SCREENING COMMON BORROW FOR CONTAMINATION

DESCRIPTION

The work consists of obtaining and screening soil samples from soil sources to be imported and incorporated into the Project. Soil source samples shall be analyzed for certain contaminants as outlined in these Special Provisions and in accordance with the Soil Management Plan (SMP), the Remedial Action Work Plan (RAWP), the Contract Drawings, and in a manner satisfactory to the Engineer. The Contractor shall provide submittals, sampling and laboratory testing as outlined in these Special Provisions prior to the delivery of soils to the Project.

SUBMITTALS

Prior to commencing construction, the Contractor shall submit to the Engineer a list of soil sources for Common Borrow to be imported and incorporated into the Project. The list shall state the location of material, Owner, anticipated quantity of soil to be imported, material state (in situ, stockpiled), material condition (virgin, processed, reclaimed, recycled from another Project) and any known environmental history associated with the material condition. Include with the list any existing analytical results of the soil source.

Prior to commencing construction, the Contractor shall submit to the Engineer a Sampling and Analytical Work Plan (SAWP) outlining the methodology used to collect, preserve, analyze and report soil sample results. As minimum, the SAWP shall include:

- Sample collection methods including a description of sampling equipment, grab sample size and how representative grab samples will be obtained from in situ undeveloped and developed borrow sources and/or from stockpiled processed, reclaimed and/or recycled borrow sources;
- Procedures for decontamination of sampling equipment prior to and between obtaining successive samples;
- Sample container, storage and preservation procedures and holding times;
- Sample handling, packaging, and transportation protocols;
- Sample documentation (labeling, chain-of-custody, log book); and
- Sampling and analysis quality assurance/quality control procedures.

The Contractor shall provide third party soil sampling with all samples analyzed at an analytical laboratory who meets the minimum requirements and guidelines to conduct chemical analysis, as developed by the EPA. The analytical laboratory shall be approved/certified by the Rhode Island Department of Environmental Management. The detection limit for all analytical results shall below the acceptance criteria outlined in this Special Provision.

The soil sampling frequency (which is depended on soil borrow source and contaminant) and a list of contaminants to be analyzed are as outlined in this Special Provision. The Contractor shall submit to the Engineer copies of all imported source soil analytical results, applicable QA/QC data and chains of custody 72 hours in advance of delivery of soils to Project.

MATERIALS AND PERSONNEL

The Contractor shall be responsible for furnishing all equipment, personnel and subcontractors required to complete and submit soil testing required in this Special Provision.

All materials to be used shall be in accordance with all appropriate sections of the Rhode Island Department of Transportation Standard Specifications for Road and Bridge Construction, 2004 Edition, and all revisions.

TESTING

1. Soil imported to the Project for use as Item Code 202.0700 Common Borrow used up to a non-impervious finished grade or to subgrade of an impervious surface shall be shown to have an average contaminant level below the Rhode Island Department of Environmental Management (RIDEM) Method 1 RIDEM Residential Direct Exposure Criteria (RDEC) for TPH, VOC, SVOCs (16 PAH priority pollutants only) and RCRA 8 Metals[2] prior to delivery to the Project.

   Soil imported from a non-developed borrow source shall be tested with a minimum of one sample per borrow source. Soil imported from another project or developed borrow source shall be tested with a minimum of one sample per borrow source. Contaminants to be tested, the test methods and acceptance shall be as outlined in the following table:

Contaminant	Test Method	Acceptance Criteria
TPH	EPA Method 8100M	Below RIDEM Method 1 RDEC
VOC	EPA Method 8260	Below RIDEM Method 1 RDEC
SVOCs (16 PAHs only)	EPA Method 8270	Below RIDEM Method 1 RDEC
RCRA Eight Metals[2]	EPA Methods 6010 and 7471A	Below RIDEM Method 1 RDEC

ACCEPTANCE CRITERIA

Contaminant	RDEC (mg/kg)	I/C DEC (mg/kg)	Contaminant	RDEC (mg/kg)	I/C DEC (mg/kg)
Volatile Organic Compounds					
Acetone	7,800	10,000	Ethylene dibromide (EDB)	0.01	0.07
Benzene	2.5	200	Isopropyl benzene	27	10,000
Bromodichloromethane	10	92	Methyl ethyl ketone	10,000	10,000
Bromoform	81	720	Methyl isobutyl ketone	1200	10,000
Bromomethane	0.8	2900	Methyl tertiary-butyl ether (MTBE)	390	10,000
Carbon tetrachloride	1.5	44	Methylene chloride	45	760
Chlorobenzene	210	10,000	Styrene	13	190
Chloroform	1.2	940	1,1,1,2-Tetrachloroethane	2.2	220
Dibromochloromethane	7.6	68	1,1,2,2-Tetrachloroethane	1.3	29
1,2- Dibromo-3-chloropropane (DBCP)	0.5	4.1	Tetrachloroethene	12	110
1,1-Dichloroethane	920	10,000	Toluene	190	10,000
1,2-Dichloroethane	0.9	63	1,1,1-Trichloroethane	540	10,000
1,1-Dichloroethene	0.2	9.5	1,1,2-Trichloroethane	3.6	100
cis-1,2-Dichloroethene	630	10,000	Trichloroethene	13	520
Trans-1,2-Dichloroethene	1,100	10,000	Vinyl chloride	0.02	3.0
1,2-Dichloropropane	1.9	84	Xylenes (Total)	110	10,000
Ethylbenzene	71	10,000			

Semi-Volatiles					
Acenaphthene	43	10,000	2,4-Dimethyl phenol	1,400	10,000
Acenaphthylene	23	10,000	Dimethyl phthalate	1900	10,000
Anthracene	35	10,000	2,4-Dinitrophenol	160	4,100
Benzo(a)anthracene[a]	0.9	7.8	2,4-Dinitrotoluene	0.9	8.4
Benzo(a)pyrene	0.4	0.8	Fluoranthene	20	10,000
Benzo(b)fluoranthene	0.9	7.8	Fluorene	28	10,000
Benzo(g,h,i)perylene	0.8	10,000	Hexachlorobenzene	0.4	3.6
Benzo(k)fluoranthene	0.9	78	Hexachlorobutadiene	8.2	73
1,1-Biphenyl	0.8	10,000	Hexachloroethane	46	410
Bis(2-ethylhexyl)phthalate	46	410	Indeno(1,2,3-cd)pyrene	0.9	7.8
Bis(2-chloroethyl)ether	0.6	5.2	2-Methyl naphthalene	123	10,000
Bis(2-chloroisopropyl)ether	9.1	82	Naphthalene	54	10,000
4-Chloroaniline (p-)	310	8200	Pentachlorophenol	5.3	48
2-Chlorophenol	50	10,000	Phenanthrene	40	10,000
Chrysene[a]	0.4	780			
Dibenzo(a,h)anthracene	0.4	0.8	Phenol	6,000	10,000
1,2-Dichlorobenzene (o-DCB)	510	10,000	Pyrene	13	10,000
1,3-Dichlorobenzene (m-DCB)	430	10,000	1,2,4-Trichlorobenzene	96	10,000
1,4-Dichlorobenzene (p-DCB)	27	240	2,4,5-Trichlorophenol	330	10,000
Substance	**RDEC (mg/kg)**	**I/C DEC (mg/kg)**	**Substance**	**RDEC (mg/kg)**	**I/C DEC (mg/kg)**

Semi-Volatiles (Cont'd)					
3,3-Dichlorobenzidine	1.4	13	2,4,6-Trichlorophenol	58	520
2,4-Dichlorophenol	30	6,100			
Diethyl phthalate	340	10,000			
RCRA 8 Metals					
Arsenic[b]	7.0	7.0	Lead[c]	150	500
Barium	5,500	10,000	Mercury	23	610
Cadmium	39	1,000	Selenium	390	10,000
Chromium III (Trivalent)	1,400	10,000	Silver	200	10,000
Chromium VI (Hexavalent)	390	10,000			

Soil Criteria as presented is based on the RI DEM Method 1 Criteria. See notes below for qualifiers

[a] Estimated quantitation limits

[b] Background Levels of Priority Pollutant Metals In Rhode Island Soils, T. O'Connor, RIDEM . For arsenic, see Section 12.0

[c] Direct exposure criteria for Lead consistent with the Rhode Island Department of Health Rules and Regulations for Lead Poisoning Prevention [R23-24.6-PB], as amended

METHOD OF MEASUREMENT

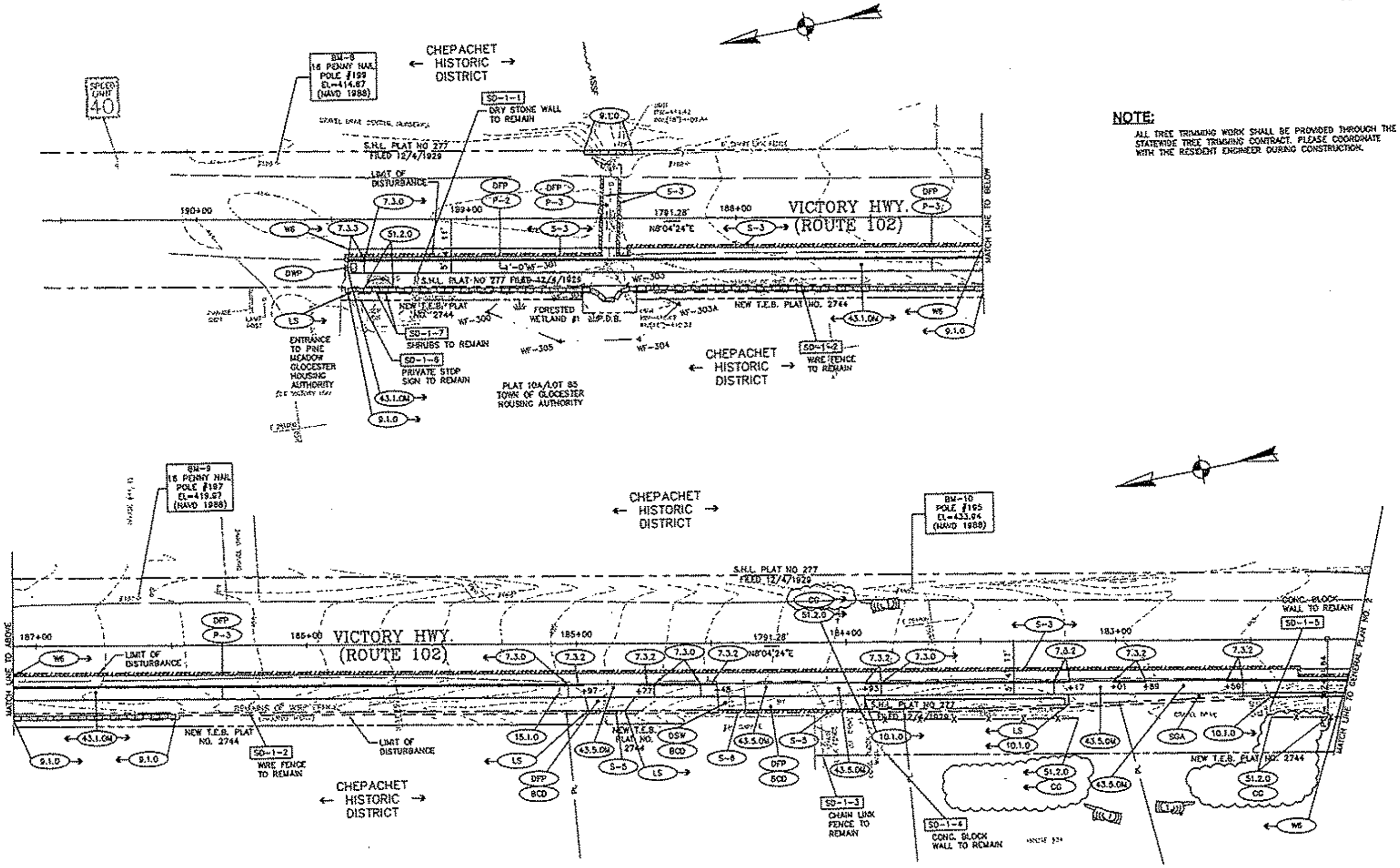
This item will not be measured for payment.

BASIS OF PAYMENT

No separate payment will be made for this item. Costs for this item shall be included in the bid prices of the appropriate items as listed in the Proposal.

FED. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2012	11	82

R-1



NOTE:
ALL TREE TRIMMING WORK SHALL BE PROVIDED THROUGH THE STATEWIDE TREE TRIMMING CONTRACT. PLEASE COORDINATE WITH THE RESIDENT ENGINEER DURING CONSTRUCTION.

NOTE:
THE BASE OF LEVELS FOR THIS PROJECT IS NAVD 1988.

ADDENDUM No. 1

COMMONWEALTH
ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RI 02908

REVISIONS		
No.	DATE	BY
1	7/2/12	CEC

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

HIGHWAY IMPROVEMENTS TO
U.S. ROUTE 44 (PUTNAM PIKE)
VICTORY HIGHWAY (ROUTE 102)
GLOCESTER TO TOURTELLOT HILL ROAD RHODE ISLAND

GENERAL PLAN NO. 1

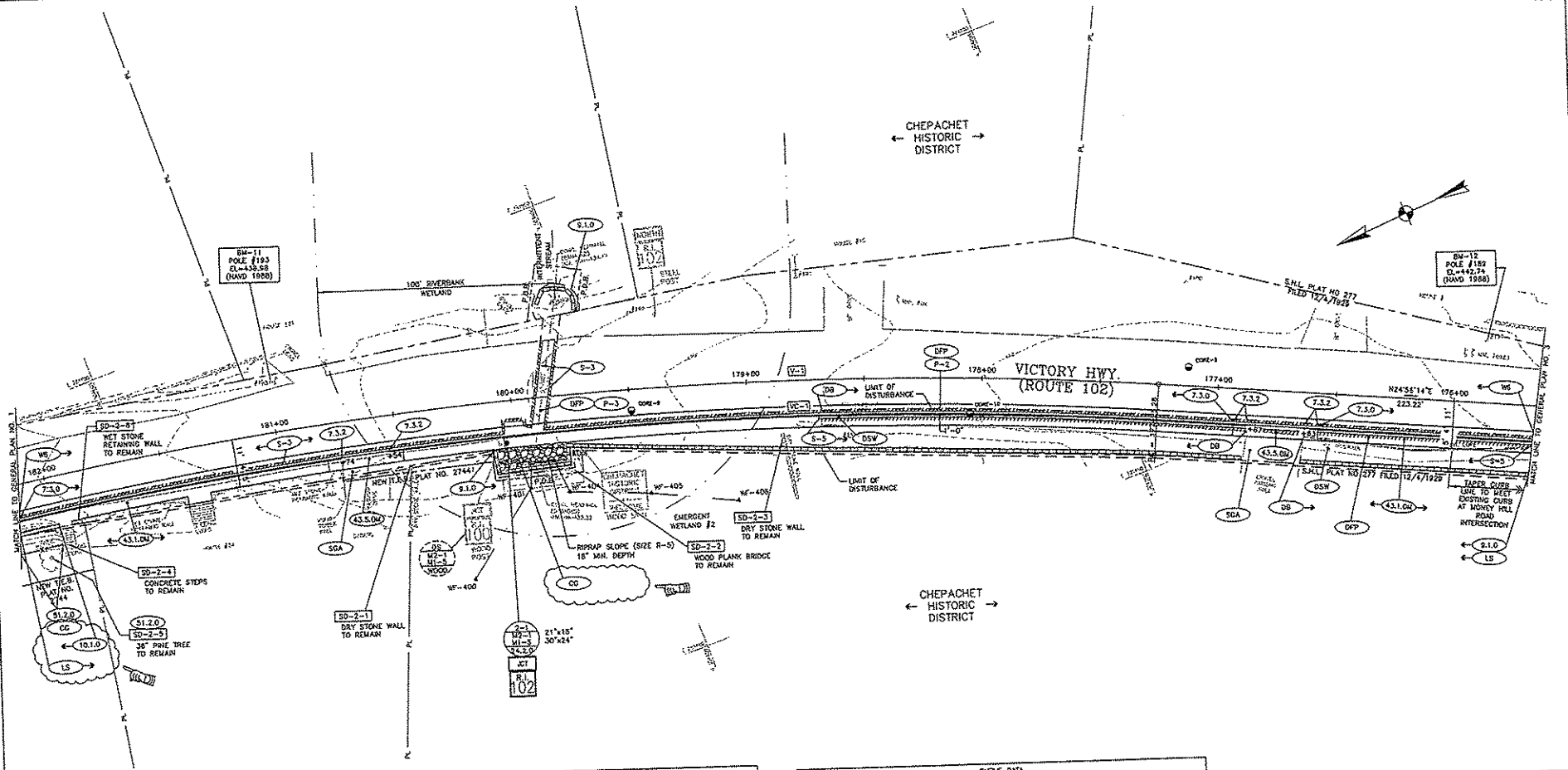
CHECKED BY______ DATE______ SCALE 1"=20'

0051E_V1_011_GENERAL001_AD001

CE&C #97061.09

CONTRACT DRAWING	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2012	12	82

R-1



BASELINE CURVE DATA				
CURVE NO.	DELTA	RADIUS	TANGENT	LENGTH
V-1	16°51'50"	1666.48'	250.00'	496.38'

BASELINE COORDINATE DATA (NAD-83)			
CURVE NO.	STATION	R.I. STATE COORDINATE SYSTEM NORTHING	EASTING
V-1	PC 177+25.26	304181.7003	281431.8015
	RP	304832.7636	279902.5521
	PT 182+21.64	304655.9123	281572.3174
	PI	304408.3915	281537.2073

CURVE COORDINATE DATA (NAD-83)			
CURVE NO.	STATION	R.I. STATE COORDINATE SYSTEM NORTHING	EASTING
VC-1	PC 177+25.26	304188.0247	281418.2000
	RP	304892.7636	279902.5521
	PT 182+21.64	304658.0183	281557.4851
	PI	304412.8928	281522.8883

CURVE DATA								
NO.	Δ	RADIUS	TANGENT	LENGTH	PC STA.	OFFSET	PT STA.	OFFSET
VC-1	16°51'50"	1871.48'	247.78'	491.97'	177+25.26	15.00', LT.	182+21.64	15.00', LT.

NOTE:
THE BASE OF LEVELS FOR THIS PROJECT IS NAVD 1988.

ADDENDUM No. 1

COMMONWEALTH ENGINEERS & CONSULTANTS, INC.
100 SMITH STREET PROVIDENCE, RI 02908

REVISIONS		
No.	DATE	BY
1	7/23/13	CEC

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

HIGHWAY IMPROVEMENTS TO
U.S. ROUTE 44 (PUTNAM PIKE)
VICTORY HIGHWAY (ROUTE 102)
GLOCESTER TO TOURTELLOT HILL ROAD SMITHFIELD RHODE ISLAND

GENERAL PLAN NO. 2

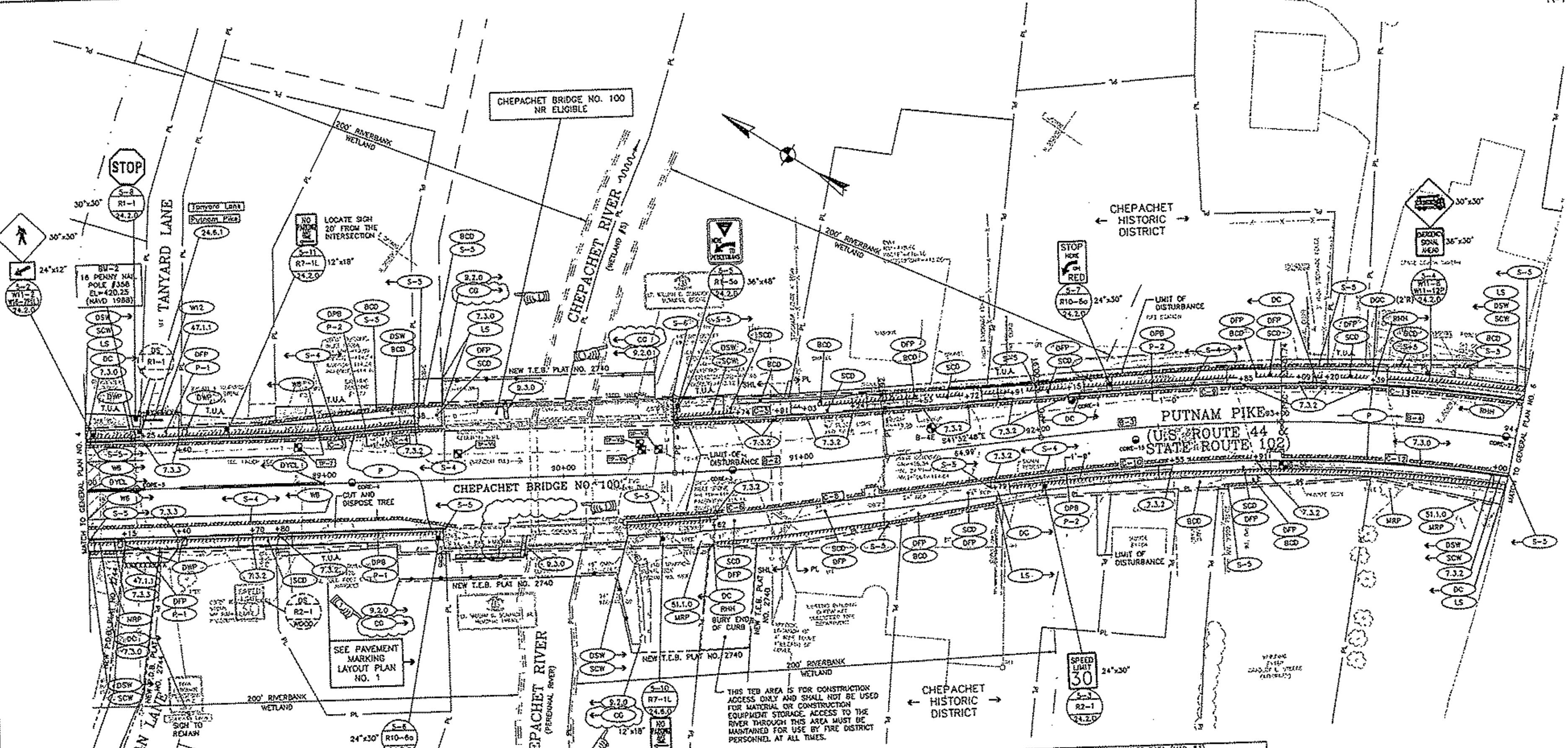
CHECKED BY _____ DATE _____ SCALE 1"=20'

0061E_V1_012_GENERAL002_ADD01

CC&C #97061.09

FEDERAL DIVISION	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2012	15	82

R-1



CURB CURVE DATA

No.	Δ	RADIUS	TANGENT	LENGTH	PC STA.	OFFSET	PT STA.	OFFSET
C-3	4°20'52"	320.00'	19.74'	39.46'	88+84.88	20.00'LT	89+24.30	21.50'LT
C-4	4°52'13"	300.00'	12.76'	25.50'	89+24.30	21.50'LT	89+49.78	22.34'LT
C-5	2°33'34"	1200.00'	26.81'	53.60'	90+62.30	21.89'LT	91+18.99	20.53'LT
C-6	4°08'22"	500.00'	18.07'	36.12'	90+59.53	18.64'RT	90+95.01	17.25'RT
C-8	0°57'13"	2500.00'	20.81'	41.61'	90+95.01	17.25'RT	91+35.92	16.15'RT
C-9	3°48'59"	916.00'	30.52'	61.01'	92+41.80	18.00'LT	93+01.74	18.00'LT
C-10	6°25'09"	884.00'	49.57'	99.04'	92+00.91	16.00'RT	93+01.74	16.00'RT
C-11	17°00'23"	641.00'	95.83'	190.26'	93+01.74	16.00'LT	94+87.26	16.00'LT
C-12	17°00'23"	609.00'	91.05'	108.76'	93+01.74	16.00'RT	94+87.26	16.00'RT

BASELINE COORDINATE DATA (NAD-83)

CURVE NO.	POINT/STATION	R.I. STATE COORDINATE SYSTEM NORTHING	EASTING
B-2	PC STA 90+46.57	302852.4115	281790.3025
	PT STA 91+35.92	302582.9777	281846.5013
	PI	302818.5020	281816.9285
B-3	PC STA 92+00.91	302534.3398	281889.6023
	POC STA 93+01.74	302455.2891	281952.1146
	PI	302496.5572	281923.0749
B-4	POC STA 93+01.74	302455.2891	281952.1146
	POC STA 94+87.26	302290.0556	282034.9428
	PI	302378.8641	282005.8805

BASELINE CURVE DATA

CURVE	DELTA	RADIUS	TANGENT	LENGTH
B-2	04°51'38"	1053.32'	44.70'	89.35'
B-3	06°25'09"	900.00'	50.47'	100.83'
B-4	17°00'23"	625.00'	93.44'	185.51'

NOTES:

1. THE BASE OF LEVELS FOR THIS PROJECT IS NAVD 1988.
2. THE HIGHWAY GRANITE CURB SHALL TRANSITION FROM A 6" REVEAL TO A 7" BRIDGE REVEAL.
3. AT THE BROWN AND HOPKINS COUNTRY STORE (NO. 1179 PUTNAM PIKE) NEATLY SAW CUT AROUND THE 3 COLUMNS AND REPLACE THE SIDEWALK AS DIRECTED BY THE ENGINEER.
4. AT BUILDING NO. 1177 PUTNAM PIKE, THE EXISTING SIDEWALK SHALL BE SAWCUT ALONG THE BUILDING FOUNDATION AND AS NECESSARY TO REMOVE IT MANUALLY WITHOUT THE USE OF A JACK HAMMER OR OTHER MECHANICAL EQUIPMENT THAT COULD CAUSE DAMAGE TO THE BUILDING FOUNDATION.

LEGEND:

TEMPORARY USE AREA (T.U.A.)

ADDENDUM No. 1

COMMONWEALTH ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RI 02908

REVISIONS		
No.	DATE	BY
1	7/2/12	CEC

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

HIGHWAY IMPROVEMENTS TO
U.S. ROUTE 44 (PUTNAM PIKE)
VICTORY HIGHWAY (ROUTE 102)
TO TOURTELLOT HILL ROAD
GLOCESTER — RHODE ISLAND

GENERAL PLAN NO. 5

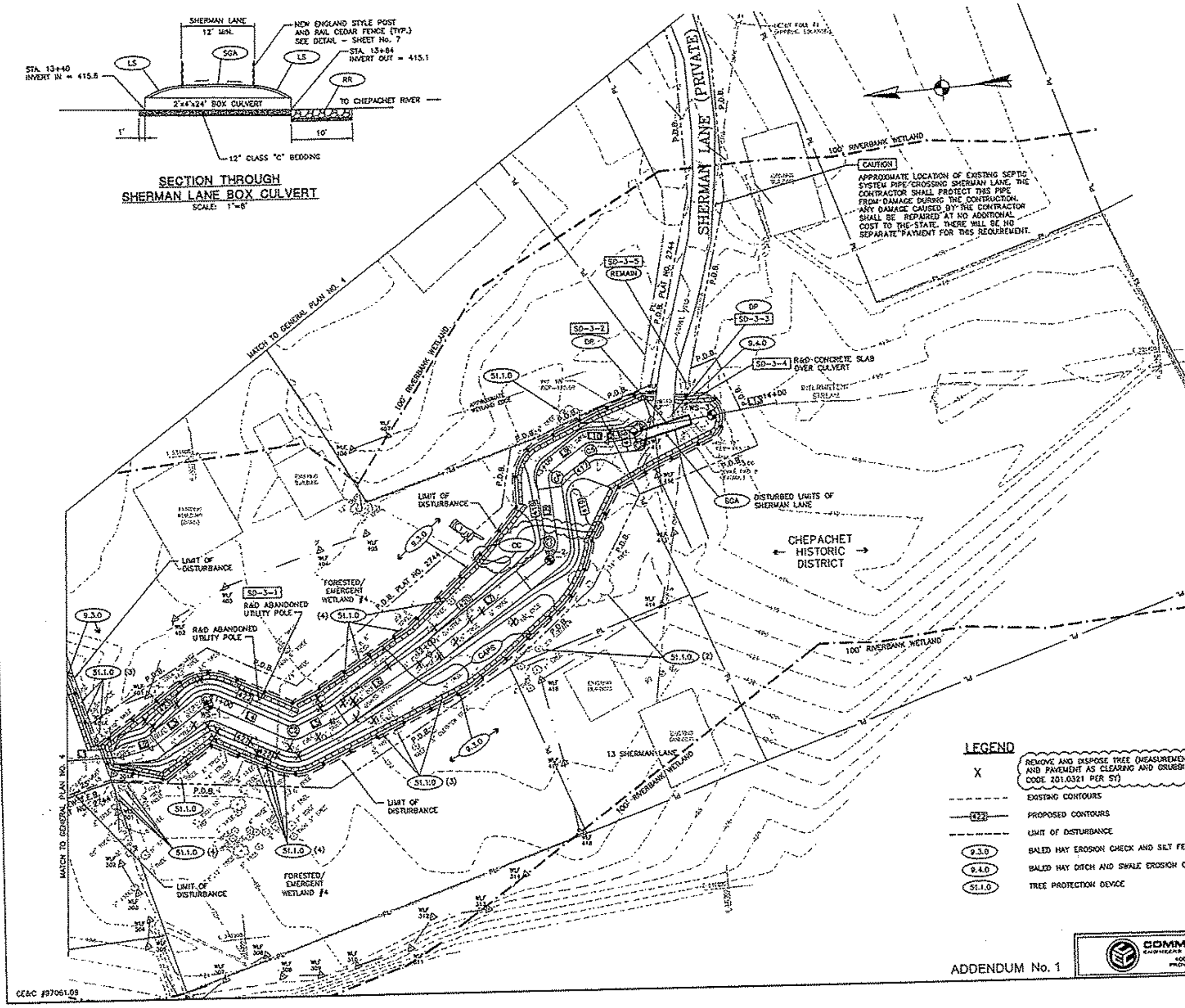
CHECKED BY______ DATE______ SCALE 1"=20'

0051E_V1_015_GENERAL005_ADD01

CE&C #97061.03

FEDERAL AID ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	R.I.		2012	24	82

R-1



LEGEND

X	REMOVE AND DISPOSE TREE (MEASUREMENT AND PAYMENT AS CLEARING AND GRUBBING CODE 201.0321 PER SY)
- - - - -	EXISTING CONTOURS
— 422 —	PROPOSED CONTOURS
— · — · —	LIMIT OF DISTURBANCE
9.3.0	BALED HAY EROSION CHECK AND SILT FENCE COMBINED
9.4.0	BALED HAY DITCH AND SWALE EROSION CHECK
51.1.0	TREE PROTECTION DEVICE

SHERMAN LANE BASELINE INFORMATION							
NO.	LENGTH	RADIUS	DIRECTION	BEGIN NORTHING	BEGIN EASTING	END NORTHING	END EASTING
L1	54.00'		S2°18'07"W	303098.2374	281281.6389	303042.2789	281279.4698
L2	12.53'		S10°24'18"E	303042.2789	281279.4698	303029.9529	281281.7332
L3	28.22'		S31°38'29"E	303029.9529	281281.7332	303007.6266	281295.4728
C1	5.29'	5.00'	S1°19'12"E	303007.6266	281295.4728	303002.5844	281295.5890
L4	30.89'		S28°59'06"W	303002.5844	281295.5890	302975.5676	281280.6329
C2	8.78'	10.00'	S3°49'18"W	302975.5676	281280.6329	302967.0876	281280.0885
L5	13.32'		S21°19'33"E	302967.0876	281280.0885	302954.8833	281284.9092
L6	48.05'		S28°23'55"E	302954.8833	281284.9092	302912.4187	281307.7803
L7	62.38'		S32°07'21"E	302912.4187	281307.7803	302859.5843	281340.9323
C3	10.51'	10.00'	S62°13'39"E	302859.5843	281340.9323	302854.9099	281349.8083
L8	24.15'		N87°40'04"E	302854.9099	281349.8083	302855.8928	281373.9425
C4	5.23'	5.00'	S62°23'34"E	302855.8928	281373.9425	302853.5800	281378.3651
L9	16.38'		S32°27'12"E	302853.5800	281378.3651	302839.7741	281387.1446
C5	3.46'	5.00'	S12°36'09"E	302839.7741	281387.1446	302836.4602	281387.8855
L10	6.10'		S7°14'54"W	302836.4602	281387.8855	302830.4096	281387.1160
L11	10.50'		S2°35'45"E	302830.4096	281387.1160	302819.9174	281387.5917
C6	3.27'	5.00'	S21°18'27"E	302819.9174	281387.5917	302816.9288	281388.7574
L12	3.95'		S40°01'08"E	302816.9288	281388.7574	302813.9043	281391.2958
L13	55.03'		S5°05'43"E	302813.9043	281391.2958	302759.0943	281396.1840

NOTES:

1. THE BASE OF LEVELS FOR THIS PROJECT IS NAVD 1988.
2. SAFE PEDESTRIAN ACCESS TO 13 SHERMAN LANE SHALL BE MAINTAINED AT ALL TIMES. THERE WILL BE NO SEPARATE PAYMENT FOR THIS REQUIREMENT.
3. INSTALL 24' OF NEW ENGLAND STYLE POST AND RAIL CEDAR FENCE ON BOTH SIDES OF SHERMAN LANE AT THE CULVERT CROSSING WITH A MINIMUM ROAD CLEARANCE OF 12' (SEE SECTION - THIS SHEET).
4. INSTALL BALED HAY DITCH AND SWALE EROSION CHECKS. STANDARD 9.4.0 AT 50' SPACING ALONG THE STREAM BED.

REVISIONS		
NO.	DATE	BY
1	7/2/12	CEC

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

HIGHWAY IMPROVEMENTS TO
U.S. ROUTE 44 (PUTNAM PIKE)
VICTORY HIGHWAY (ROUTE 102)
TO TOURTELLOT HILL ROAD
GLOCESTER RHODE ISLAND

GENERAL PLAN NO. 14

ADDENDUM No. 1

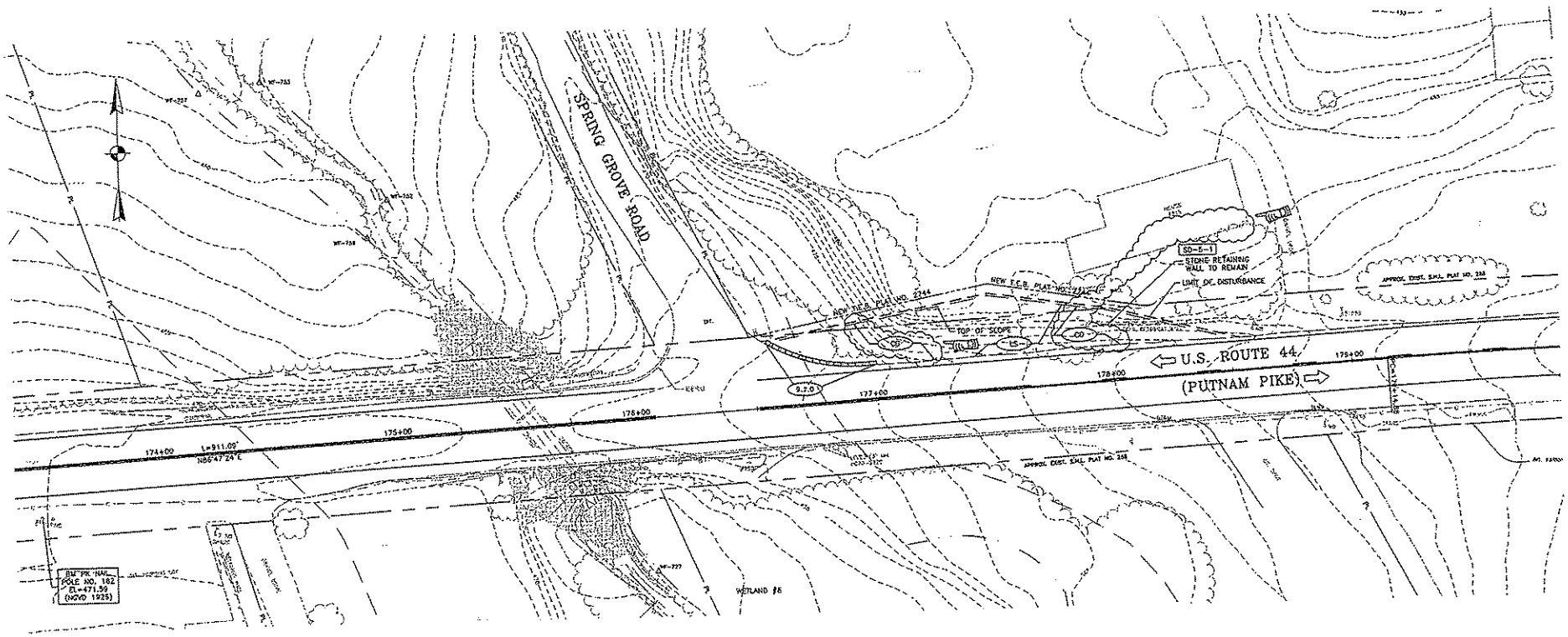
COMMONWEALTH ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RI 02908

CHECKED BY ______ DATE ______ SCALE 1"=20'

0081E_V1_024_GENERAL014_ADD01

FEDERAL GROUP	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
I	RI.		2012	79	82

R-1



NOTES:

1. THE BASE OF LEVELS FOR THIS SHEET IS NGVD 1929.
2. THE CONTRACTOR SHALL PERFORM A "PRE-AND-POST-CONDITION SURVEY OF EXISTING STRUCTURES" FOR NO. 815 PUTNAM PIKE. REFER TO THE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.
3. THE CONTRACTOR SHALL SUBMIT HIS METHOD OF ROCK REMOVAL AND THE EQUIPMENT TO BE USED TO THE ENGINEER FOR APPROVAL PRIOR TO THE WORK. ANY DAMAGE CAUSED BY THE CONTRACTOR WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

ADDENDUM No. 1

REVISIONS		
No.	DATE	BY
1	7/2/12	CEC

COMMONWEALTH ENGINEERS & CONSULTANTS, INC.
400 SMITH STREET
PROVIDENCE, RI 02908

RHODE ISLAND
DEPARTMENT OF TRANSPORTATION

HIGHWAY IMPROVEMENTS TO
U.S. ROUTE 44 (PUTNAM PIKE)
VICTORY HIGHWAY (ROUTE 102)
TO TOURTELLOT HILL ROAD
GLOCESTER RHODE ISLAND

SPRING GROVE ROAD
INTERSECTION SIGHT DISTANCE
IMPROVEMENT PLAN

CHECKED BY _____ DATE _____ SCALE 1" = 20'

00811E_V1_079_DETAIL001_ADD01

CE&C #97061.09

Table of Contents - Distribution of Quantities

Project Name - 1R Impr. to Rte. 44 Cont. - 3C (Chepachet)
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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
001	201.0301	CUTTING AND DISPOSING ISOLATED TREES AND STUMPS (4"- 24")	EACH			
		PUTNAM PIKE				
		105+50 RT		1.00	0005	01
		106+25 RT		1.00	0005	01
		177+80 LT (EAST OF SPRING GROVE ROAD)			0005	01
		89+05 RT		1.00	0005	01
		SHERMAN LANE				
		NORTH SIDE WITHIN STREAM GRADING LIMITS			0005	01
		VICTORY HIGHWAY				
		180+00 LT			0005	01
		182+00 TO 182+40 LT			0005	01
		183+25 TO 183+75 LT			0005	01
		Item 201.0301 Total:		3.00		
002	201.0305	COMPLETE REMOVAL AND DISPOSAL OF ISOLATED STUMPS (6" TO 24")	EACH			
		PUTNAM PIKE				
		89+00 RT			0005	01
		Item 201.0305 Total:	**DELETED**			
003	201.0401	REMOVE AND DISPOSE GRANITE CURB	LF			
		MONEY HILL ROAD				
		232+17 TO 232+23 RT		6.00	0005	01
		232+37 TO 232+43 RT		6.00	0005	01
		233+59 TO 233+65 LT		6.00	0005	01
		233+71 TO 233+77 RT		6.00	0005	01
		233+92 TO 233+98 RT		6.00	0005	01
		234+53 TO 234+59 LT		6.00	0005	01
		234+88 TO 234+94 LT		6.00	0005	01
		235+30 TO 235+36 RT		6.00	0005	01

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
139	907.0200 Cont.	EXPOSED TO TRAFFIC		3.00	0005	01
		Item 907.0200 Total:		3.00		
140	911.0100	WET STONE MASONRY RETAINING WALL	CY			
		STANDARD 10.1.0				
		PUTNAM PIKE				
		128+55 TO 129+15 RT		24.00	0005	01
		VICTORY HIGHWAY				
		181+98 TO 182+44 LT		24.00	0005	01
		183+18 TO 183+88 LT		35.00	0005	01
		Item 911.0100 Total:		83.00		
141	912.9901	REBUILD STONE WALLS IN HISTORIC,	SF			
		SCENIC OR RURAL AREAS				
		PUTNAM PIKE				
		89+50 RT CHEPACHET BRIDGE		36.00	0005	01
		Item 912.9901 Total:		36.00		
142	914.5010	FLAGPERSONS	MHRS			
		TRAFFIC CONTROL				
		(4 FLAGGERS)(35 WEEKS)(40 HR/WEEK)		5,600.00	0005	01
		Item 914.5010 Total:		5,600.00		
143	914.5020	FLAGPERSONS - OVERTIME	MHRS			
		TRAFFIC CONTROL				
		10% OF FLAG PERSONS		560.00	0005	01
		Item 914.5020 Total:		560.00		
144	915.0500	PRECISE LEVEL MONUMENT REINFORCED	EACH			
		CONCRETE W/ STANDARD BENCH MARK				
		HEAD STANDARDS 14.4.0 & 14.4.1				
		PUTNAM PIKE				

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
151	920.0200 Cont.	STONE CHECK DAMS - STREAM RESTORATION		125.00	0005	01
		SHERMAN LANE (RIRRP)				
		2'X4' BOX CULVERT (RIRRP)		30.00	0005	01
		Item 920.0200 Total:		**273.00**		
152	922.0100	**TEMPORARY CONSTRUCTION SIGNS**	**SF**			
		STANDARD 29.1.0 AND 27.1.1				
		MAINTENANCE AND PROTECTION OF TRAFFIC				
		G20-2, (13)(36"X18")		58.50	0005	01
		R9-9, (2)(24'X12")		4.00	0005	01
		STD. 27.1.1, (6)(36"X24")		36.00	0005	01
		W20-1, (7)(36"X36")		63.00	0005	01
		W20-4, (4)(36"X36")		36.00	0005	01
		W20-7A, (4)(36"X36")		36.00	0005	01
		W24-1(L), (1)(36"X36"))		9.00	0005	01
		W24-1(R), (1)(36"X36")		9.00	0005	01
		W8-1 BUMP (2) 36X36		18.00	0005	01
		W8-24 STEEL PLATE AHEAD (4) 36X36		36.00	0005	01
		W8-8 ROUGH ROAD (2) 36X36		18.00	0005	01
		ROUNDING				
		QUANTITY AND AS DIRECTED BY THE ENGINEER		100.50	0005	01
		Item 922.0100 Total:		**424.00**		
153	923.0105	**DRUM BARRICADE STANDARD 26.2.0**	**BDAY**			
		MAINTENANCE AND PROTECTION OF TRAFFIC				
		(100 DRUMS)(35 WEEKS)(7 DAYS/WEEK)		24,500.00	0005	01
		Item 923.0105 Total:		**24,500.00**		

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
154	923.0125	PLASTIC PIPE TYPE III BARRICADE STANDARD 26.3.1	EACH			
		CONTRACT 3C (2 SIDES OF ROAD)(2 LOCATIONS)		8.00	0005	01
		Item 923.0125 Total:		8.00		
155	923.0200	FLUORESCENT TRAFFIC CONES STANDARD 26.1.0	EACH			
		FOR TRAFFIC PROTECTION				
		ADDITIONAL ALLOWANCE FOR ACTUAL FIELD CONDITIONS		50.00	0005	01
		TYPICAL LANE CLOSURE (2 CREWS)(20)		40.00	0005	01
		TYPICAL SHOULDER WORK (1 CREW)(10)		10.00	0005	01
		Item 923.0200 Total:		100.00		
156	924.0113	ADVANCE WARNING ARROW PANEL	PDAY			
		CONTRACT 3C (4 PANELS)(35 WEEKS)(5 DAYS/WEEK)		700.00	0005	01
		Item 924.0113 Total:		700.00		
157	929.0110	FIELD OFFICE	PMO			
		NOTICE TO PROCEED TO FINAL ACCEPTANCE		20.00	0017	03
		Item 929.0110 Total:		20.00		
158	931.0110	CLEANING AND SWEEPING PAVEMENT	HSY			
		ALL ROADWAYS				
		SECOND CLEANING AND SWEEPING		169.00	0005	01
		THIRD CLEANING AND SWEEPING		169.00	0005	01

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
158	931.0110 Cont.	CHOPMIST HILL ROAD (PVMTP)				

Distribution of Quantities

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S191	T04.5001 Cont.	FLASHER CABINET - UP#154		435.00	0021	02
		Item T04.5001 Total:		**955.00**		
S192	T04.5302	**14 AWG 2 CONDUCTOR TWISTED SHIELDED CABLE**	LF			
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 1 LOOP 1 - SIGNAL CONTROL CABINET		230.00	0021	02
		LOOP 2 - SIGNAL CONTROL CABINET		95.00	0021	02
		LOOP 3 - SIGNAL CONTROL CABINET		95.00	0021	02
		LOOP 7 - SIGNAL CONTROL CABINET		25.00	0021	02
		LOOP 8 - SIGNAL CONTROL CABINET		25.00	0021	02
		Item T04.5302 Total:		**470.00**		
S193	T04.5303	**14 AWG 3 CONDUCTOR CABLE**	LF			
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 1 84+00, RT - SIGNAL CONTROL CABINET		125.00	0021	02
		84+25, LT - SIGNAL CONTROL CABINET		115.00	0021	02
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 2 SIGNAL CONTROL CABINET - FIRE STATION		890.00	0021	02
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 3 PUTNAM PIKE/CHOPMIST HILL		240.00	0021	02

Distribution of Quantities

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S193	T04.5303 Cont.	ROAD FLASHING SIGNAL				
		Item T04.5303 Total:		1,370.00		
S194	T04.5305	14 AWG 5 CONDUCTOR CABLE	LF			

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S194	T04.5305 Cont.	PUTNAM PIKE TRAFFIC SIGNAL PLAN				
		NO. 1				
		84+00, RT - SIGNAL CONTROL CABINET		1,055.00	0021	02
		84+25, LT - SIGNAL CONTROL CABINET		125.00	0021	02
		PUTNAM PIKE TRAFFIC SIGNAL PLAN				
		NO. 2				
		90+50, RT - SIGNAL CONTROL CABINET		160.00	0021	02
		91+27, LT - SIGNAL CONTROL CABINET		840.00	0021	02
		Item T04.5305 Total:		2,180.00		
S195	T04.5307	14 AWG 7 CONDUCTOR CABLE	LF			
		PUTNAM PIKE TRAFFIC SIGNAL PLAN				
		NO. 1				
		84+00, RT - SIGNAL CONTROL CABINET		190.00	0005	01
		PUTNAM PIKE TRAFFIC SIGNAL PLAN				
		NO. 3			0021	02
		PUTNAM PIKE/CHOPMIST HILL ROAD FLASHING SIGNAL				
		Item T04.5307 Total:		190.00		
S196	T04.6906	'6' STRANDED COPPER CONDUCTOR 600V INSULATION	LF			
		LIGHTING PEDESTAL NO. 1				
		CIRCUIT A		1,950.00	0043	06
		CIRCUIT B		2,250.00	0043	06
		CIRCUIT C		1,450.00	0043	06
		CIRCUIT D		1,950.00	0043	06
		LIGHTING PEDESTAL NO. 2				

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S202	T05.0100 Cont.	114+02, RT		1.00	0021	02
		Item T05.0100 Total:		9.00		
S203	T05.0300	**PRECAST TYPE B HEAVY DUTY HANDHOLE**	EACH			
		STANDARD 18.2.2				
		PUTNAM PIKE LIGHTING				
		PEDESTAL NO. 1		1.00	0043	06
		PEDESTAL NO. 2		1.00	0043	06
		Item T05.0300 Total:		2.00		
S204	T05.0400	**BREAK INTO EXISTING HANDHOLE**	EACH			
		PUTNAM PIKE				
		TRAFFIC MONITORING STATION		2.00	0021	02
		PUTNAM PIKE TRAFFIC SIGNAL PLAN				
		NO. 1				
		83+64, LT		1.00	0021	02
		83+85, RT		1.00	0021	02
		84+19, LT		1.00	0021	02
		PUTNAM PIKE TRAFFIC SIGNAL PLAN				
		NO. 2				
		90+50, RT		1.00	0021	02
		Item T05.0400 Total:		6.00		
S205	T05.1030	**ADJUST HANDHOLE TO GRADE**	EACH			
		PUTNAM PIKE				
		102+00 LT TRAFFIC MONITORING STATION		1.00	0021	02
		102+18 LT TRAFFIC MONITORING STATION		1.00	0021	02
		PUTNAM PIKE TRAFFIC SIGNAL PLAN				
		NO. 1				
		83+85, RT		1.00	0021	02
		84+20, LT		1.00	0021	02

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S205	T05.1030 Cont.	84+35, LT		1.00	0021	02
		85+05, LT		1.00	0021	02
		Item T05.1030 Total:		6.00		
S206	T06.1020	2 IN. RIGID STEEL CONDUIT -	LF			

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S230	T13.9902 Cont.	TRAFFIC MONITORING STATION		280.00	0021	02
		Item T13.9902 Total:		280.00		
S231	T14.3431	3 WAY 1 SECTION SPAN MOUNTED SIGNAL HEAD 12 INCH	EACH			
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 3				
		PUTNAM PIKE/CHOPMIST HILL ROAD FLASHING SIGNAL			0021	02
		Item T14.3431 Total:		**DELETED**		
S232	T14.3513	1 WAY 3 SECTION MAST ARM MOUNTED SIGNAL HEAD 12 INCH	EACH			
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 2				
		91+27, LT		2.00	0021	02
		Item T14.3513 Total:		2.00		
S233	T14.3517	1 WAY 3 SECTION MAST ARM MTD SIGNAL HEAD 2-12 INCH SECTIONS, 1-8 INCH SECTION	EACH			
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 2				
		90+50, RT		2.00	0021	02
		91+27, LT		2.00	0021	02
		Item T14.3517 Total:		4.00		
S234	T15.0100	DIRECTIONAL REGULATORY AND WARNING SIGNS	SF			
		CHEPACHET FIRE STATION SIGNAL MAST ARM				
		R10-13 EMERGENCY SIGNAL (2) 42X30 OVERHEAD MOUNTED		17.50	0021	02

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Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S245	T20.9903 Cont.	WINTER SEASON				
		101+24 TO 111+84		2,120.00	0021	02
		112+52 TO 113+47		190.00	0021	02
		114+00 TO 116+30		460.00	0021	02
		85+13 TO 87+84		542.00	0021	02
		87+94 TO 88+25		62.00	0021	02
		88+40 TO 96+28		1,576.00	0021	02
		96+58 TO 97+38		160.00	0021	02
		97+48 TO 100+99		702.00	0021	02
		VICTORY HIGHWAY (DYCL) PRIOR TO WINTER SEASON				
		174+94 TO 175+07		28.00	0021	02
		Item T20.9903 Total:		8,138.00		
S246	T20.9904	**FAST DRYING WATERBORNE PAVEMENT MARKING WORDS - "STOP AHEAD" 8' LETTER HEIGHT WITH 32' SPACE**	EACH			
		CHOPMIST HILL ROAD				
		APPROACH TO PUTNAM PIKE		1.00	0021	02
		Item T20.9904 Total:		1.00		
247	201.0321	**CLEARING AND GRUBBING**	SY			
		PUTNAM PIKE AT THE CHEPACHET BRIDGE				
		NORTH SIDE		75.00	0005	01
		SOUTH SIDE		100.00	0005	01
		PUTNAM PIKE EAST OF SPRING GROVE ROAD				
		176+55 TO 178+55 LT		555.00	0005	01
		SHERMAN LANE				
		CULVERT AND WITHIN STREAM GRADING LIMITS		1,200.00	0005	01
		VICTORY HIGHWAY				

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FAP Nos: STP-0044(060), STPG-0044(061), STP-TEA2(044)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
247	201.0321 Cont.	179+75 TO 180+10 LT		60.00	0005	01
		182+00 TO 182+45 LT		75.00	0005	01
		183+15 TO 183+95 LT		135.00	0005	01
		Item 201.0321 Total:		**2,200.00**		
S248	T14.3511	**1 WAY 1 SECTION MAST ARM MOUNTED SIGNAL HEAD 12 INCH**	**EACH**			
		PUTNAM PIKE TRAFFIC SIGNAL PLAN NO. 3				
		PUTNAM PIKE/CHOPMIST HILL ROAD FLASHING SIGNAL		3.00	0021	02
		Item T14.3511 Total:		**3.00**		