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Determination of Final Remediation Limits Dawes Avenue Bridge to Confluence 1.5-Mile Reach Removal Action

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General Electric (GE)/Housatonic River Project
Pittsfield, Massachusetts**

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SOLUTIONS
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Introduction

This report has been prepared to present analytical results for soil samples collected along the riverbanks from the Dawes Avenue Bridge downstream to the Confluence of the East and West Branch of the Housatonic River as a part of the investigation stage of Phase 3 of the 1.5 Mile Reach Removal Action of the Housatonic River in Pittsfield, Massachusetts. Field sampling activities associated with this investigation were conducted on two separate occasions. The first round of sampling was conducted from March 28, 2002 through May 10, 2002 and the second round of sampling was conducted from October 27, 2003 through December 5, 2003. Included in this report is an analysis and evaluation of the new bank sample data in combination with the existing/historical data. The results of the data analysis and UCL evaluation are used to confirm, and in some cases modify excavation limits that were originally provided in the Engineering Evaluation/Cost Analysis (EE/CA) (07-0032) for the 1.5 Mile Reach Removal Action and finalized in the Environmental Protection Agency's (EPA) November 21, 2000 Action Memorandum. This report includes the following sections:

- Purpose and Objectives
- Sampling Locations
- Field Sampling and Analytical Procedures
- Analytical Results
- Data Evaluation
- Removal Recommendations

Also included in this report are several attachments:

- Attachment A: Pro UCL software output for the analysis of surficial PCB concentrations
- Attachment B: Residential averaging worksheets for each parcel for the analysis of PCB concentrations at depth
- Attachment C: Residential Parcel Maps – individual parcel maps depicting each residential parcel adjacent to the river within the reach, the at-depth (3 feet and deeper) PCB sampling locations and results, and the approximate location of the averaging areas established on each residential parcel utilized for the at depth evaluation
- Attachment D: Cross Sectional Sample Projections – provides graphical analysis of the sample locations utilized in the higher riverbank evaluations

The activities described in this report were conducted in accordance with project-wide and area specific planning documents. These planning documents include the following:

- Work Plan Addendum (Sampling Plan), March 11, 2002

- Work Plan Addendum (Sampling Plan), October 22, 2003
- Project Field Sampling Plan (00-0334)
- Project Health and Safety Plan (HASP) (00-0313)
- Project Quality Assurance Project Plan and Addendum (QAPP) (00-0305)
- Site Specific Health and Safety Plan (00-0475)

Purpose and Objectives

The purpose of the sampling investigation was to supplement existing riverbank soil data for the Phase 3 of the 1.5 Mile Reach in order to finalize the location of the limit of excavation for the Phase 3 Removal Action. The investigation had the following objectives:

1. Further assess PCB concentrations in riverbank soils at elevations greater than that previously tested in order to determine whether the limit of excavation on the east bank between transects 186 and 194 and west bank between transects 198 and 204 could be lowered from the top of bank.
2. Reevaluate PCB concentrations in riverbank soils where higher banks exist on the west bank between transects 162 and 168 and on the east bank between transects 170 and 176 in order to determine whether the horizontal limit of excavation could be lowered from the top of bank and whether the vertical limit of excavation could be adjusted to a shallower depth than three feet.
3. Further assess PCB concentrations at depths greater than three feet on residential parcels downstream of the Dawes Avenue Bridge to the Confluence of the East and West Branch of the Housatonic River. The cleanup level for depths greater than three feet on residential properties specified in the EE/CA and Action Memorandum include a “not-to-exceed” PCB concentration of 50 parts per million (ppm) and an average concentration of PCBs of less than 10 ppm in bank soils from 3 to 15 feet deep, or to the groundwater table, whichever is less.

Note that the limit of excavation in the Phase 3 reach was first proposed by General Electric (GE) along the top of bank based on the existing topography. EPA reviewed the location of this line and made revisions based on a more recent topographic survey of the Phase 3 reach. The revised top of bank location of the limit of excavation was agreed upon by both parties and further evaluation of the location was made based on the results of the sampling described herein. On April 24, 2004, EPA transmitted final top of bank figures to GE.

Sampling Locations

A total of sixty-six sample locations were established to further characterize the PCB concentrations in the riverbanks from the Dawes Avenue Bridge to the Confluence of the East and West Branch of the Housatonic River. However, in six sample locations complete refusal was met, therefore, a total of sixty locations were sampled. The attached maps (Figure 2) depict the locations of these samples collected as part of this effort.

Seven of the sixty total sample locations were selected in order to characterize areas where existing data was not available along higher banks at the 0-3 foot depth interval (with sample depths including 0-1, 1-2, and 2-3 feet). Furthermore, these sample locations were located on the banks at elevation 972 feet above mean sea level (AMSL) based on the evaluation of adjacent existing data at that elevation or greater. The adjacent existing data on the higher banks above or at elevation 972 feet AMSL showed PCB concentrations less than 2 ppm. Therefore, by supplementing this existing data the limit of excavation could be re-established at a lower elevation in the area of these higher banks. Two of the seven locations were located on the east bank between transects 190 and 192 on Parcel I6-1-68. The remaining five locations were located on the west bank between transects 198 and 204 on Parcel I7-1-101. Because these sample locations were intended to be located at a particular elevation, each location was surveyed and staked prior to sampling.

The remaining fifty-three sample locations were located on thirty-one residential parcels located downstream of the Dawes Avenue Bridge on both the east and west bank. These sample locations were placed at approximately mid bank between the edge of river and the limit of excavation. The sample locations were surveyed for horizontal coordinates as well as elevation. These sample locations were established for use in the evaluation of PCB concentrations on residential properties at depths greater than three feet (with sample depths including 3-4, 4-5, and 5-6 feet).

Field Sampling and Analytical Procedures

Sampling protocols were conducted in accordance with the WESTON Work Plan Addendum (Sampling Plan, March 11, 2002), the WESTON Work Plan Addendum (Sampling Plan, October 22, 2003), and the WESTON Field Sampling Plan (30 July 2001) for soil sampling (C.32). Refusal was encountered before the design depth could be achieved at sixteen of the residential sampling locations (at six of the sixteen residential sampling locations, complete refusal was met). Locations where refusal was met before the design depth could be achieved are depicted on Figure 2. For these locations, no result is shown on Figure 2 for depths where refusal was met.

All samples were analyzed for PCBs at a fixed, off site laboratory approved by CENAE. QA/QC samples were obtained in accordance with the requirements outlined in the project QAPP and Addendum (00-03-05). WESTON conducted data management and data validation of sample analyses in accordance with the procedures outlined in the project QAPP. All analyses were found to meet the Level III data quality objectives as outlined in the project QAPP.

Analytical Results

A total of 167 samples were analyzed for Aroclors and Total PCBs and used in the data evaluation from the Spring 2002 and Fall 2004 sampling events. Tables showing the validated analytical results for all of the samples collected during the sampling events have been attached to this report (See Table 1 for all surficial, 0-3 feet, PCB results and Table 2 for at depth, 3 feet and deeper, PCB results).

Data Evaluation

The November 21, 2000 Action Memorandum for the 1.5 Mile Reach states that riverbank soils adjacent to recreational or commercial properties are classified as recreational use exposure scenarios. The recreational use cleanup criteria is 10 parts per million (ppm) PCBs in the top three feet. The Action Memorandum further states that compliance with the 10 ppm cleanup criteria will be based on the 95% Upper Confidence Limit of the mean PCB concentration in riverbank soils. For properties classified as recreational, there is no remediation required for riverbank soil at depths greater than three feet.

For residential properties, the November 21, 2000 Action Memorandum specifies a cleanup level of 2 ppm in the top three feet, based on the 95% Upper Confidence Limit of the mean PCB concentration in riverbank soils. For residential properties, there are additional cleanup criteria. For depths from three to fifteen feet (and above the groundwater table) there is a not-to-exceed concentration of 50 ppm PCBs. Furthermore, the arithmetic average of the PCBs in soil from three to fifteen feet (and above the groundwater table) must be less than 10 ppm.

For the Dawes Avenue to the confluence section of the 1.5 Mile Reach, the EE/CA classified thirty-one properties as residential and the remaining riverbank properties were classified as recreational. All the properties between the Dawes Avenue Bridge and the Pomeroy Avenue Bridge have been classified as residential properties. In addition, there are four residential properties located immediately downstream of the Pomeroy Avenue Bridge on the east side of the river. The remaining properties downstream of the Pomeroy Avenue Bridge have been classified as recreational.

Surficial PCB Evaluation Along Higher Riverbanks: 0 – 3 Feet

Four areas of evaluation were established along higher riverbanks where existing PCB concentrations apparently decreased as elevation increased in order to determine whether the horizontal limit of excavation could be lowered from the top of bank and if the vertical limit of excavation could be adjusted to a shallower depth than three feet. Each of the four areas of evaluation (Area #1 through Area #4) are depicted on Figure 3 (Maps 1 and 2). Existing data in two of these evaluation areas, Area #3 and Area#4, were supplemented with new PCB samples. However, Area#1 and Area #2 were evaluated using existing data only. Area #1 includes several residential properties on the west bank between transects 162 and 168. Area #2 includes several residential properties located on the east bank between transects 170 and 176. Area #3 includes three residential properties along the east bank directly downstream of the Pomeroy Avenue Bridge between transects 186 and 194 and Area #4 was established on the west bank on the Fred Garner Park property between transects 198 and 204. The sample sets for each area of evaluation and their respective Total PCB results are presented in Tables 3 through 6 attached to this report. The samples are also further organized by parcel for each area.

Area #1 and Area #2:

For Area #1 and Area #2, the PCB concentration evaluation in surficial riverbank soils was completed using existing data and was based on the proposed final grades developed in the Phase 3 Design package. In both areas, the design requires the riverbank to be backfilled to a final grade above the existing grade. Therefore, in the as-built condition along these two areas, the existing grade was approximated to be over three feet below the proposed final ground surface, except near the top of the riverbank where the new final grade would meet the existing ground surface. In this situation, the majority of the existing samples in these two areas would be covered with three feet of clean fill. In turn, for most sample locations in these areas, the clean up criteria for the top three feet of riverbank soil along these averaging areas (all residential parcels) would be met.

To complete this evaluation properly, sample locations were projected onto the closest adjacent Phase 3 Design Construction Cross Section from the Phase 3 Design package (see Attachment D). Each cross section consisted of the existing ground surface generated from topographic and aerial surveys of the riverbanks as well as the proposed final grade. Sample locations were placed along the appropriate cross section via a computer aided design program for precision. Once the sample locations were projected onto the appropriate cross section, the depth of each sample relative to the final grade was evaluated. Therefore, if at the location of a particular sample point, the distance between the final grade and the existing ground surface was equal to or greater than three feet, then the PCB concentrations for the samples were reevaluated to ensure it would meet the at depth (3 feet to 15 feet) averaging criteria. Under a second scenario, if at a particular sample point, the distance between the final grade and the existing ground surface was

less than three feet, then the PCB concentrations for the sample were reevaluated to ensure it would meet the surficial (0 to 3 feet) averaging criteria. A more detailed description of this evaluation for both areas follows below:

Area #1 Analysis

The area to be evaluated as part of Area #1 began just downstream of the storm water outfall located on Parcel I7-2-26, where the top of bank elevation increases significantly. The area extended the entire length of this higher bank to approximately Transect 168, where the top of bank elevation decreases. The Total PCB results for samples that fall within Area #1 are presented in Table 3 attached. The large majority of these samples did not require evaluation in this report, as they were either below 2 ppm total PCBs, or were eliminated based on their location and/or depth. Included in Table 3 is a description for each sample of whether it was subjected to further analysis and the rationale for its disposition. Table 3A includes those sample locations and their associated samples that remained for further evaluation once after this initial culling of samples based on location or PCB concentration. Below is a brief description of the process followed to arrive at the final set of sample locations used in the re-evaluation of the limit of work in Area #1.

The first step was to eliminate from the analysis all sample locations where PCB concentrations were less than 2 ppm. Those sample locations that remained (i.e., contained one or more samples with PCBs greater than 2 ppm) were then located and projected onto the nearest design cross section, if possible, based on their sample identification format. The samples collected by EPA START were collected using a sampling protocol where the sample identification number described the actual location of the sample. These sample locations were readily projected onto the nearest cross section and are shown on the cross sections in Attachment D. All other samples were surveyed, and their surveyed location was used to determine their location on or near the bank. As a result of this step, several sample locations (R50AZ127, R50CZ130, R51AZ142, R51BZ143, R51CZ148, R75AZ151, R75BZ149.5, R75CZ162, and R74BZ160) were eliminated from further analysis as noted on Table 3, as they were found to be actually within the riverbed area as defined on the cross section and would be excavated as part of the three foot mandatory removal in the riverbed. In addition, because of the plan view location of sample I7-2-25B relative to sample R50CZ130, it was also deemed to be part of the riverbed removal and not considered in the bank evaluation.

Table 3A presents the reduced list of sample locations, and includes a descriptor indicating how each location was handled as part of the further analysis. To summarize, each of the sample locations included on Table 3A had one or more samples with total PCBs above 2 ppm, and was found after the location/projection step to be within the bank in Area #1. This left a total of 7 sample locations (HR-EB6, I7-2-25A, RB021642, R51AZ134, R75CZ140, R74AZ144, and R74CZ150) to be considered for further analysis.

Based on the depths of the samples taken and the projection of the sample locations on the cross sections, three of these 7 locations (HR-EB6, I7-2-25A, and R74AZ144) had samples with PCB concentrations above 2 ppm in the top 0.0 to 0.5 foot interval only. The evaluation of these three sample locations is presented below under the “Evaluation of Surface Samples with PCBs > 2 ppm” subheading. One sample location (RB02164) had PCB concentrations above 2 ppm only at the 2 to 2.5 foot depth. Based on the proposed final grade for this riverbank area, this sample location fell equal to or greater than three feet below the proposed final grade. Therefore, this sample location was evaluated only in the “Deep Residential PCB Evaluation” discussed below. Sample locations R51AZ134, and R75CZ140 had samples with PCB concentrations greater than 2 ppm in both the top 0.0 to 0.5 foot interval and in the deeper intervals below 1 foot depth. The surficial sampling increment of these location is evaluated below under the “Evaluation of Surface Samples with PCBs > 2 ppm” subheading. Based on the proposed final grade for this riverbank area, the subsurface sample location increments for these two locations fall equal to or greater than three feet below the proposed final grade. Therefore, these two locations were also evaluated in the “Deep Residential PCB Evaluation” discussed below. Sample location R74CZ150 also had samples with PCB concentrations greater than 2 ppm in both the top 0.0 to 0.5 foot interval and in the intervals below 1 foot. However, as discussed in the “Evaluation of Surface Samples with PCBs > 2 ppm” subheading, soil associated with the sampling location was targeted for excavation from 0 to 3 feet. Therefore, the depth increments greater than one foot were not reevaluated in the “Deep Residential PCB Evaluation” at this sample location.

Evaluation of Surface Samples with PCBs > 2 ppm

Based on the sample results for the following two sample locations with sample results greater than 2 ppm (I7-2-25A, HR-EB6) it was decided to set the vertical limit of excavation at 1 foot below the ground surface in two distinct areas within the Area #1 evaluation area. The first area was started downstream of the outfall on Parcel I7-2-26 and extended downstream to approximately Transect 164. This results in the removal of the soil associated with the 0-1 foot depth interval for sample locations I7-2-25A, HR-EB6, and R51AZ134 (note that although the 0-1 foot interval from R51AZ134 was removed; it was 3 feet or more below the final grade, as stated in the paragraph above). The horizontal limits of this removal area were established using the closest upper bank sample locations that showed Total PCB sample results less than 2 ppm. These sample locations and the proposed new limit of removal are shown on Figure 4 attached to this report.

Downstream of this first adjusted 0 to 1 foot removal area there were no Total PCB sample results greater than 2 ppm, therefore, it was considered unnecessary to remove any material from this section of the bank. The vertical limit of removal was set to 0 feet and the horizontal limit of removal was adjusted to the edge of river, as shown on Figure 4.

Working further downstream to the bank area where R75CZ140 was located, the vertical extent of the limit of removal was adjusted to 1 foot below the original ground surface. The horizontal extent of this adjusted removal area was created by using the closest upstream and downstream sample locations that had Total PCB results less than 2 ppm. This included samples R75BZ143 upstream and R74AZ156 downstream. The horizontal limit up the riverbank was not changed because there were no samples between R75CZ140 and the limit of removal (see Figure 4). This one foot excavation will remove the soil associated with sample location R74AZ140 that had PCB concentrations > 2 ppm in the top foot.

Downstream of this second 1 foot removal area the vertical limit of removal was once again set at 0 feet and the horizontal limit was set at the edge of river based on the Total PCB sample results for R74BZ142 and R74BZ151, which were less than 2 ppm. From the location of these samples, however, the horizontal location of the limit of removal was angled back up to the original limit of removal at the top of bank, intersecting it at approximately the location of Transect 168. This was due to sample R74CZ150 which had Total PCB sample results greater than 50 ppm in all three depth intervals from 0 feet to 3 feet. Therefore, soil associated with this sampling point was excavated. The vertical limit of removal was restored to its original three feet in this last area. This coincided with the natural topography of the riverbank in this area as the elevation of the top of bank descended.

In the areas where the limit of removal was adjusted horizontally, the 95% Upper Confidence Level (UCL) of the arithmetic mean of PCB concentrations was calculated. The calculated UCL was compared against the bank soil cleanup goal of 2 ppm for residential properties. UCL values were calculated using the EPA approved *Pro UCL* software (version 2.1, December, 2002). The Pro UCL Software printout containing the results of the UCL calculation is attached to this report in Attachment A. For this data set, the 0-3 foot depth interval was evaluated. This included all sample locations bounding the new removal areas and any locations in between the previous limit of removal and the new limit. Two UCL evaluations, Area #1 – Upstream and Area #1 - Downstream were completed due to the horizontal adjustment of the limit of removal in two distinct zones of Area #1. The UCL evaluation entitled Area #1 – Upstream evaluates the surficial PCB concentrations from the outfall on Parcel I7-2-26 to a point just upstream of Transect 166. The sample locations used in this UCL evaluation are included in Table 3B and the results of the UCL calculation is in Attachment A. The second UCL evaluation for Area #1, Area #1 – Downstream, evaluates the other area within Area #1 where the limit of removal was moved down the bank. This area includes sample location R74AZ144, which was not excavated. The sample locations used in this UCL evaluation are included in Table 3C and the results of the UCL calculation is in Attachment A. An overall summary of all the UCL analysis results is provided in Table 7. As shown in Attachment A and Table 7, the UCL for both of these areas is less than 2 ppm. Therefore, the cleanup standard is met in these two areas without excavating soil associated with these data points.

Area #2 Analysis

Per the Phase 3 Design, the area of the riverbank from approximately Transect 170 to a point just downstream of Transect 174 was to be backfilled to a final grade well above the existing grade to compensate for the existing steepness of the slope. The Total PCB results utilized for the evaluation of this area are presented in Table 4. The area of evaluation was bounded by sample locations along this section of bank that exceeded the surficial (0 to 3 feet) Total PCB cleanup criteria for residential properties of 2 ppm. This included a total of eight samples bounded by R53BZ113 at the upstream end of the evaluation area and R64CZ142 at the downstream end. Since R53BZ113 was located near the property line between parcels I7-3-4 and I7-3-3, the upstream limit of Area #2 was set at the property line between these two parcels. Exceedances of 2 ppm at particular depth sample intervals for the ten locations bounded by R53BZ113 and R64CZ142 ranged from the 0 to 0.5 foot interval to the 2 to 2.5 foot interval. Therefore, it was deemed necessary to set the vertical limit of the removal in this area at a minimum of one foot with additional excavation as necessary to allow for the placement of three feet of clean backfill. This resulted in either the removal of soil associated with PCB levels greater than 2 ppm or the placement of three feet of clean soil over soils associated with PCB levels greater than 2 ppm. Therefore, the cleanup criteria mandating that soils from the zero to three foot depth interval have PCB concentrations less than 2 ppm was met. For soil that will be greater than 3 feet deep in the proposed finished condition, two sample locations, R65BZ108 and R64CZ142, had total PCB results greater than 10 ppm below 1 foot. Therefore, these sample locations were also evaluated in the deep residential PCB analysis section below. Samples with PCBs less than 10 ppm which would be greater than 3 feet deep in the finished condition did not require re-evaluation, as they could not result in an average PCB concentration greater than 10 ppm, and no single sample exceeded 50 ppm PCBs (additional explanation of the evaluation of deeper samples is provided in a later section of this report).

Based on this evaluation, the limit of excavation was adjusted in Area #1 in both the horizontal and vertical directions and in Area #2 in vertical direction only. The result of this analysis is depicted in Figure 4, which shows the previous limit of excavation and the new limit of excavation for comparison purposes. Note that based on the EECA, the previous vertical limit of excavation for these two areas was set at three feet below the existing ground surface.

Area #3 and Area #4:

Riverbank soil data from Area #3 and Area #4 were evaluated by calculating the 95% Upper Confidence Level (UCL) of the arithmetic mean of PCB concentrations and comparing the appropriate bank soil cleanup goals, 2 ppm for residential properties (Area 3) and 10 ppm for recreational properties (Area 4), to each UCL calculated. UCL values

were calculated using the EPA approved *Pro UCL* software (version 2.1, December, 2002). The Pro UCL Software printouts containing the results of the UCL calculations are attached to this report in Attachment A. For these two data sets, the 0-3 foot depth interval was evaluated.

For Area #3, the data set consisted of 20 sample locations including 60 total samples from depths between 0 and 3 feet located at or above elevation 972 AMSL. The data set had an average PCB concentration of 0.31 ppm and a maximum PCB concentration of 1.6 ppm. The data was determined to have a non-parametric distribution and the 95% UCL was calculated to be between 0.36 and 0.44 ppm. Therefore, the 95% UCL fell below the cleanup level of 2 ppm and no remediation above these sample locations was required. The remediation limit was set at elevation 972 feet in this area. The Total PCB data set used for the evaluation of Area #3 is presented in Table 5.

The data set for Area #4 consisted of 7 sample locations including 19 total samples from depths between 0 and 3 feet located at or above elevation 972 AMSL. The data set had an average PCB concentration of 0.57 ppm and a maximum PCB concentration of 7.58 ppm. The data was determined to have a non-parametric distribution and the 95% UCL was calculated to be between 1.22 and 4.74 ppm. Therefore, the 95% UCL fell below the cleanup level of 10 ppm and no remediation above these sample locations was required. The remediation limit was set at elevation 972 feet in this area. The Total PCB data set used for the evaluation of Area #4 is presented in Table 6.

Table 7, Summary of PCB UCL Evaluations to Determine Remediation Limits, summarizes the UCL results and remediation requirements for Area #3 and Area #4. Figure 4 shows the revised excavation limits based on the evaluation above.

Deep Residential PCB Evaluation: Greater than 3 Feet

This analysis evaluated all PCB results from samples obtained below three feet in the proposed bank remediation area on a total of 31 parcels. To perform this evaluation, the bank for each residential parcel was divided into averaging areas along each parcel. The number of averaging areas for each parcel varies from one to five depending on the number of sample locations on each parcel. The number of deep residential sample locations was generally based on the size of the property. For each averaging area, one sample location that had sample depth intervals greater than three feet was utilized in the analysis (see Figure 5 showing how a deep sample was generally collected). Therefore, the PCB concentrations for each sample location would represent riverbank soils from the perpendicular bi-sector between each sample location, extending from the edge of river to the limit of excavation.

Attachment B contains sample and location information for each parcel where the averaging analysis has been completed. For each parcel, four tables have been created displaying the samples used in the averaging analysis in tabular format. In addition, a

map is included for each parcel showing the sample locations and approximate area that each sample represents for the averaging analysis (See Attachment C).

The first table for each parcel, titled “All Data”, displays the results for the deeper samples on the parcel including sample identification numbers, location identification numbers, the sample depth intervals, and the data qualifier or flag for each result. The second table, “Data By Area”, shows the sample results by location divided into each averaging area (see the associated map for each parcel). The next two tables display the results of the averaging analysis. The first averaging analysis table shows the existing conditions with the sample results by area for each depth. Sample intervals where duplicate samples were collected have been averaged. This table also shows samples with PCB concentrations greater than the 50 ppm NTE level. The second averaging table depicts the same samples assuming that the depth intervals with PCB concentrations greater than the 50 ppm NTE level are removed as well as intervals necessary to achieve compliance with the 10 ppm overall average requirement. All samples above depth intervals where PCB concentrations exceeded the 50-ppm NTE level and including the depth interval with the exceedance are presumed to be excavated and replaced with clean fill and were assigned a PCB concentration of half the detection level of 0.018 ppm. In addition, an average PCB concentration for each averaging area and the overall bank average is presented at the bottom of the second averaging analysis table. For samples where PCB concentrations were not detected, a PCB concentration of half the detection level was used in calculating the averages.

For all properties, the overall average for PCBs below three feet was always less than 10 ppm once proposed removals were considered. Note that if additional data were not available below the six foot depth interval for a particular area, and the last sample interval collected exhibited high concentrations of PCBs (greater than 50 ppm in general), then the excavation in that area would be carried down to the ground water table.

In addition to the averaging analysis, a further evaluation was completed for each parcel where data beyond the limit of excavation in the adjacent floodplain was considered. This evaluation was completed based on the fact that General Electric will be completing a removal action in the adjacent floodplain where high concentrations of PCBs exist on residential parcels. Therefore, for a more consistent removal between the work to be completed on the riverbanks and work in the adjacent floodplain, the vertical extent of the removal along the riverbanks was reconsidered and occasionally extended deeper based on the proposed removal in the floodplain. This would also address constructability issues with the interface between the removal action to be completed on the riverbanks and the removal proposed on the adjacent floodplain, since the removal action for the riverbanks is scheduled to be completed prior to the work in the adjacent floodplain.

Table 8, Summary of Deep Excavation Limits for Residential Properties, summarizes where additional excavation will be necessary based on the results of this averaging

analysis. More specifically, for each set of tables per parcel in Attachment C the shaded areas on the third table are those proposed to be excavated, where applicable. Figure 6 displays the required deep residential excavation in plan view.

Summary and Recommendations

Additional bank sampling was completed downstream of the Dawes Avenue Bridge to the Confluence of the East Branch and West Branch of the Housatonic River. Samples were collected on the east bank between transects 190 and 192 and west bank between transects 198 and 204 to further characterize concentrations of PCBs in the upper banks on these transects. In addition, samples were collected at depth (3 to 6 feet) on residential properties. Both efforts were completed to determine if modifications to the limit of excavation established in the EE/CA would be appropriate. Based on these new results and an evaluation utilizing UCL averaging as well as arithmetic averaging analyses, the following conclusions were made:

- Based on the evaluation of the new and existing sample results along the upper banks between transects 186 and 194 on the east side of the river and between transects 198 and 204 on the west side of the river, the limit of excavation can be moved down the bank in these two areas to the elevation contour of 972 feet AMSL.
- Based on the evaluation of the existing sample results along the riverbank between transects 162 and 168 on the west side of the river the limit of excavation can be adjusted vertically and horizontally to the locations shown on Figure 6.
- Based on the evaluation of the existing sample results along the riverbank between transects 170 and 176 on the east side of the river the limit of excavation can be adjusted vertically to that shown on Figure 6.
- Based on the evaluation of sample results at depth (3 – 6 feet), it will be necessary to remove additional soil at depths greater than the proposed three feet in several areas. Table 8, Summary of Deep Excavation Limits for Residential Properties, summarizes where additional excavation will be necessary. Figure 6 displays the required deep excavations on residential properties in plan view. All other properties will not need further excavation beyond the three feet established by the EE/CA.

Figure 6, Final Remediation Limits (2 Maps), depicts the final horizontal and vertical limits for Phase 3 of the removal action.

TABLE 1
New Surficial (0-3 Feet) PCB Results

Location ID	Depth (ft)	Total PCBs (ppm)
BS000349	0 - 1	0.21
BS000349	1 - 2	0.019U
BS000349	2 - 3	0.81
BS000350	0 - 1	0.031
BS000350	0 - 1	0.28
BS000350	1 - 2	0.031
BS000350	2 - 3	0.03
BS000353	0 - 1	0.042
BS000353	1 - 2	0.018U
BS000353	2 - 3	0.018U
BS000354	0 - 1	0.37
BS000354	1 - 2	0.12
BS000354	2 - 3	0.071
BS000355	0 - 1	0.079
BS000355	1 - 2	0.02U
BS000355	2 - 3	0.018U
BS000356	0 - 1	0.018U
BS000356	1 - 2	0.018U
BS000356	2 - 3	0.018U
BS000357	0 - 1	0.94
BS000357	1 - 2	0.098
BS000357	2 - 3	0.14

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 2
New At Depth (3 Feet and Deeper) PCB Results

Location ID	Depth (ft)	Total PCBs (ppm)	Location ID	Depth (ft)	Total PCBs (ppm)
BS000290	3 - 4	10	BS000309	5 - 6	0.017U
BS000290	4 - 5	11	BS000310	3 - 4	0.018U
BS000290	5 - 6	2.6	BS000310	4 - 5	0.018U
BS000293	3 - 4	180	BS000310	5 - 6	0.018U
BS000293	4 - 5	47	BS000311	3 - 4	0.05
BS000293	5 - 6	29	BS000311	4 - 5	0.017U
BS000294	3 - 4	20	BS000311	5 - 6	0.02
BS000294	3 - 4	21	BS000312	3 - 4	0.019U
BS000295	3 - 4	30	BS000312	4 - 5	0.018U
BS000295	4 - 5	5.8	BS000312	5 - 6	0.018U
BS000296	3 - 4	7.7	BS000313	3 - 4	0.018U
BS000296	4 - 5	9.9	BS000313	4 - 5	0.017U
BS000296	4 - 5	12	BS000313	5 - 6	0.017U
BS000296	5 - 6	10	BS000314	3 - 4	0.019
BS000297	3 - 4	77	BS000314	4 - 5	0.028J
BS000297	4 - 5	14	BS000314	5 - 6	0.036J
BS000297	5 - 6	10	BS000316	3 - 4	0.8
BS000298	3 - 4	160	BS000316	4 - 5	0.23
BS000298	4 - 5	21	BS000316	5 - 6	1.1
BS000299	3 - 4	250	BS000323	3 - 4	0.43
BS000299	4 - 5	98	BS000323	4 - 5	0.65J
BS000300	3 - 4	80	BS000323	5 - 6	0.56J
BS000300	4 - 5	56	BS000323	5 - 6	11J
BS000300	5 - 6	64	BS000324	3 - 4	0.11
BS000301	3 - 4	100	BS000324	4 - 5	0.064
BS000301	4 - 5	63	BS000324	5 - 6	0.091
BS000301	5 - 6	79	BS000326	3 - 4	7
BS000302	3 - 4	82	BS000327	3 - 4	34
BS000302	4 - 5	18	BS000327	4 - 5	8.9
BS000302	5 - 6	16	BS000329	3 - 4	1.5
BS000303	3 - 4	110	BS000329	4 - 5	3.7
BS000303	4 - 5	30	BS000329	5 - 6	2.4
BS000303	5 - 6	14	BS000330	3 - 4	74
BS000304	3 - 4	37	BS000330	4 - 5	27
BS000304	4 - 5	13	BS000330	5 - 6	10
BS000304	5 - 6	13	BS000331	3 - 4	450
BS000305	3 - 4	100	BS000331	4 - 5	270
BS000305	4 - 5	14	BS000332	3 - 4	46
BS000305	4 - 5	18	BS000332	4 - 5	100J
BS000305	5 - 6	1.5	BS000332	5 - 6	220
BS000306	3 - 4	9	BS000332	5 - 6	340J
BS000307	3 - 4	0.11	BS000333	3 - 4	840
BS000307	4 - 5	0.18	BS000333	4 - 5	650
BS000307	5 - 6	0.35	BS000333	5 - 6	73
BS000307	5 - 6	0.36J	BS000334	3 - 4	40
BS000308	3 - 4	0.019U	BS000334	4 - 5	2.4
BS000308	4 - 5	0.019U	BS000334	5 - 6	7.3
BS000308	5 - 6	0.026	BS000335	3 - 4	30
BS000309	3 - 4	0.034	BS000335	4 - 5	28
BS000309	4 - 5	0.023	BS000335	5 - 6	15

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 2
New At Depth (3 Feet and Deeper) PCB Results

Location ID	Depth (ft)	Total PCBs (ppm)
BS000336	3 - 4	40
BS000336	4 - 5	2.6
BS000336	5 - 6	11
BS000340	3 - 4	1.3J
BS000340	4 - 5	28J
BS000341	3 - 4	0.4J
BS000341	4 - 5	0.018U
BS000341	5 - 6	0.018U
BS000342	3 - 4	0.018U
BS000342	4 - 5	0.023U
BS000343	3 - 4	380J
BS000343	4 - 5	260
BS000343	5 - 6	14
BS000344	3 - 4	0.034
BS000344	4 - 5	0.053
BS000344	5 - 6	0.026U
BS000345	3 - 4	0.96J
BS000345	4 - 5	0.022U
BS000345	5 - 6	0.022U
BS000346	3 - 4	15J
BS000346	4 - 5	0.61J
BS000346	5 - 6	0.064
BS000347	3 - 4	0.056
BS000347	3 - 4	0.085J
BS000347	4 - 5	0.99J
BS000347	4 - 5	1J
BS000347	5 - 6	0.27J
BS000348	3 - 4	0.02
BS000348	4 - 5	0.022
BS000348	4 - 5	0.028
BS000348	5 - 6	0.023
BS000348	5 - 6	0.024
BS000351	3 - 4	2.8J
BS000351	4 - 5	0.14
BS000351	5 - 6	0.094J
BS000352	3 - 4	20J
BS000352	4 - 5	0.022U
BS000352	5 - 6	0.095J
BS000358	3 - 4	21J
BS000358	3 - 4	32J
BS000358	4 - 5	0.12J
BS000358	5 - 6	0.023U
BS000359	3 - 4	0.081
BS000359	4 - 5	0.021U
BS000359	5 - 6	0.023U
BS000360	3 - 4	140
BS000360	4 - 5	460
BS000360	5 - 6	7.8J

Location ID	Depth (ft)	Total PCBs (ppm)
BS000361	3 - 4	32J
BS000361	4 - 5	19J
BS000361	5 - 6	21J
BS000362	3 - 4	2.6J
BS000362	4 - 5	0.097J
BS000362	5 - 6	0.023U
BS000363	3 - 4	0.022U
BS000363	4 - 5	0.039U
BS000363	5 - 6	0.052U

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 3
Higher Bank Evaluation Area #1 PCB Results - First Tier Evaluation

Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)	Evaluation Result
I7-2-26	HR-EB6	0 - 0.5	3.13	See Table 3A
	I7-2-25A	0 - 0.5	39	See Table 3A
	RB021621	0 - 0.5	0.38	Eliminated (<2 ppm)
	R49C115	0 - 0.5	0.9J	Eliminated (<2 ppm)
	R49C115	0.5 - 1	0.5J	Eliminated (<2 ppm)
	R49C115	0.5 - 1	0.5J	Eliminated (<2 ppm)
	R49C115	1 - 1.5	1J	Eliminated (<2 ppm)
	R49C115	1.5 - 2	0.7	Eliminated (<2 ppm)
	R49CZ120	0 - 0.5	0.2J	Eliminated (<2 ppm)
	R49CZ120	1 - 1.5	0.32	Eliminated (<2 ppm)
	R49CZ120	1 - 1.5	1.2J	Eliminated (<2 ppm)
	R49CZ120	2 - 2.5	0.6J	Eliminated (<2 ppm)
	R49CZ125	0 - 0.5	1J	Eliminated (<2 ppm)
	R49CZ125	1 - 1.5	0.7J	Eliminated (<2 ppm)
	R49CZ125	2 - 2.5	0.6J	Eliminated (<2 ppm)
I7-2-25	R50AZ109	0 - 0.5	0.2J	Eliminated (<2 ppm)
	R50AZ109	1 - 1.5	0.2J	Eliminated (<2 ppm)
	R50AZ109	1 - 1.5	0.4J	Eliminated (<2 ppm)
	R50AZ109	2 - 2.5	0.2J	Eliminated (<2 ppm)
	R50AZ118	0 - 0.5	0.59	Eliminated (<2 ppm)
	R50AZ118	0 - 0.5	1.1J	Eliminated (<2 ppm)
	R50AZ118	1 - 1.5	0.6J	Eliminated (<2 ppm)
	R50AZ118	2 - 2.5	0.5J	Eliminated (<2 ppm)
	R50AZ127	0 - 0.5	41J	Located in River
	R50AZ127	1 - 1.5	53J	Located in River
	R50AZ127	2 - 2.5	41J	Located in River
	R50BZ111	0 - 0.5	0.5U	Eliminated (<2 ppm)
	R50BZ111	1 - 1.5	0.6U	Eliminated (<2 ppm)
	R50BZ111	2 - 2.5	0.6U	Eliminated (<2 ppm)
	R50BZ117	0 - 0.5	0.5J	Eliminated (<2 ppm)
	R50BZ117	1 - 1.5	0.1U	Eliminated (<2 ppm)
	R50BZ117	1 - 1.5	0.5U	Eliminated (<2 ppm)
	R50BZ117	1 - 1.5	0.5U	Eliminated (<2 ppm)
	R50BZ117	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R50BZ123	0 - 0.5	0.2J	Eliminated (<2 ppm)
	R50BZ123	1 - 1.5	0.2J	Eliminated (<2 ppm)
	R50BZ123	2 - 2.5	0.3J	Eliminated (<2 ppm)
	R50CZ114	0 - 0.5	0.3J	Eliminated (<2 ppm)
	R50CZ114	1 - 1.5	0.6J	Eliminated (<2 ppm)
	R50CZ114	2 - 2.5	0.3	Eliminated (<2 ppm)
	R50CZ114	2 - 2.5	0.6J	Eliminated (<2 ppm)
	R50CZ122	0 - 0.5	1.3J	Eliminated (<2 ppm)
	R50CZ122	1 - 1.5	0.6J	Eliminated (<2 ppm)
	R50CZ122	2 - 2.5	0.4J	Eliminated (<2 ppm)
	R50CZ130	0 - 0.5	36J	Located in River
	R50CZ130	1 - 1.5	200J	Located in River
	R50CZ130	2 - 2.5	71J	Located in River
I7-2-24	RB021642	2 - 2.5	7.5	See Table 3A
	R51AZ126	0 - 0.5	0.13	Eliminated (<2 ppm)
	R51AZ126	0 - 0.5	1U	Eliminated (<2 ppm)
	R51AZ126	1 - 1.5	1.4U	Eliminated (<2 ppm)
	R51AZ126	2 - 2.5	1.5U	Eliminated (<2 ppm)

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 3
Higher Bank Evaluation Area #1 PCB Results - First Tier Evaluation

Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)	Evaluation Result
I7-2-24	R51AZ134	0 - 0.5	33J	See Table 3A
	R51AZ134	1 - 1.5	12J	See Table 3A
	R51AZ134	2 - 2.5	7.6J	See Table 3A
	R51AZ142	0 - 0.5	37J	Located in River
	R51AZ142	1 - 1.5	42J	Located in River
	R51AZ142	2 - 2.5	71J	Located in River
	R51BZ129	0 - 0.5	0.6U	Eliminated (<2 ppm)
	R51BZ129	1 - 1.5	0.6U	Eliminated (<2 ppm)
	R51BZ129	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R51BZ136	0 - 0.5	0.2J	Eliminated (<2 ppm)
	R51BZ136	1 - 1.5	0.9	Eliminated (<2 ppm)
	R51BZ136	1 - 1.5	1.1	Eliminated (<2 ppm)
	R51BZ136	2 - 2.5	1.9	Eliminated (<2 ppm)
	R51BZ143	0 - 0.5	3.0	Located in River
	R51BZ143	1 - 1.5	1.8	Located in River
	R51BZ143	2 - 2.5	5.6	Located in River
	R51CZ134	0 - 0.5	1U	Eliminated (<2 ppm)
	R51CZ134	1 - 1.5	0.7U	Eliminated (<2 ppm)
	R51CZ134	2 - 2.5	0.1J	Eliminated (<2 ppm)
	R51CZ134	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R51CZ141	0 - 0.5	1.9	Eliminated (<2 ppm)
	R51CZ141	0 - 0.5	1.2J	Eliminated (<2 ppm)
	R51CZ141	1 - 1.5	0.2J	Eliminated (<2 ppm)
	R51CZ141	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R51CZ148	0 - 0.5	1.4	Located in River
	R51CZ148	1 - 1.5	6.2	Located in River
	R51CZ148	2 - 2.5	6.4	Located in River
I7-2-23	RB021663	2 - 2.5	0.28	Eliminated (<2 ppm)
	R75AZ137	0 - 0.5	0.4J	Eliminated (<2 ppm)
	R75AZ137	0 - 0.5	0.41	Eliminated (<2 ppm)
	R75AZ137	1 - 1.5	0.2J	Eliminated (<2 ppm)
	R75AZ137	2 - 2.5	0.4J	Eliminated (<2 ppm)
	R75AZ144	0 - 0.5	0.7J	Eliminated (<2 ppm)
	R75AZ144	0 - 0.5	0.5J	Eliminated (<2 ppm)
	R75AZ144	1 - 1.5	0.5U	Eliminated (<2 ppm)
	R75AZ144	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R75AZ151	0 - 0.5	6.8J	Located in River
	R75AZ151	1 - 1.5	3.3J	Located in River
	R75AZ151	2 - 2.5	2.9J	Located in River
	R75BZ136.5	0 - 0.5	0.5J	Eliminated (<2 ppm)
	R75BZ136.5	1 - 1.5	0.4J	Eliminated (<2 ppm)
	R75BZ136.5	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R75BZ143	0 - 0.5	0.7J	Eliminated (<2 ppm)
	R75BZ143	1 - 1.5	0.22	Eliminated (<2 ppm)
	R75BZ143	1 - 1.5	0.3J	Eliminated (<2 ppm)
	R75BZ143	2 - 2.5	0.2J	Eliminated (<2 ppm)
	R75BZ149.5	0 - 0.5	2.6J	Located in River
	R75BZ149.5	1 - 1.5	1.5J	Located in River
	R75BZ149.5	2 - 2.5	1.4J	Located in River
	R75CZ140	0 - 0.5	35J	See Table 3A
	R75CZ140	1 - 1.5	8.1J	See Table 3A
	R75CZ140	2 - 2.5	9.1	See Table 3A

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 3
Higher Bank Evaluation Area #1 PCB Results - First Tier Evaluation

Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)	Evaluation Result
I7-2-23	R75CZ140	2 - 2.5	14J	See Table 3A
	R75CZ162	0 - 0.5	2.2J	Located in River
	R75CZ162	1 - 1.5	6.6J	Located in River
	R75CZ162	2 - 2.5	1.2J	Located in River
I7-2-22	R74AZ144	0 - 0.5	1.8	See Table 3A
	R74AZ144	0 - 0.5	2.5	See Table 3A
	R74AZ144	1 - 1.5	1.2	Eliminated (<2 ppm)
	R74AZ144	2 - 2.5	0.6	Eliminated (<2 ppm)
	R74BZ142	0 - 0.5	0.6U	Eliminated (<2 ppm)
	R74BZ142	1 - 1.5	0.5U	Eliminated (<2 ppm)
	R74BZ142	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R74BZ151	0 - 0.5	1.6	Eliminated (<2 ppm)
	R74BZ151	1 - 1.5	0.8	Eliminated (<2 ppm)
	R74BZ151	1 - 1.5	1.1	Eliminated (<2 ppm)
	R74BZ151	2 - 2.5	1	Eliminated (<2 ppm)
	R74BZ160	0 - 0.5	1.4J	Located in River
	R74BZ160	1 - 1.5	64	Located in River
	R74BZ160	2 - 2.5	9.0J	Located in River
	R74CZ141.5	0 - 0.5	0.5U	Eliminated (<2 ppm)
	R74CZ141.5	1 - 1.5	2.4U	Eliminated (<2 ppm)
	R74CZ141.5	2 - 2.5	0.9U	Eliminated (<2 ppm)
	R74CZ150	0 - 0.5	170	See Table 3A
	R74CZ150	1 - 1.5	74	See Table 3A
	R74CZ150	2 - 2.5	64	See Table 3A

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 3A
Higher Bank Evaluation Area #1 PCB Results - Second Tier Evaluation

Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)	Evaluation Result
I7-2-26	HR-EB6	0 - 0.5	3.13	Excavated
	I7-2-25A	0 - 0.5	39	Excavated
I7-2-24	RB021642	2 - 2.5	7.5	>3 ft Below Final Grade - Evaluated with Deep Residential Data
	R51AZ134	0 - 0.5	33J	Excavated
	R51AZ134	1 - 1.5	12J	>3 ft Below Final Grade - Evaluated with Deep Residential Data
	R51AZ134	2 - 2.5	7.6J	>3 ft Below Final Grade - Evaluated with Deep Residential Data
I7-2-23	R75CZ140	0 - 0.5	35J	Excavated
	R75CZ140	1 - 1.5	8.1J	>3 ft Below Final Grade - Evaluated with Deep Residential Data
	R75CZ140	2 - 2.5	9.1	>3 ft Below Final Grade - Evaluated with Deep Residential Data
	R75CZ140	2 - 2.5	14J	>3 ft Below Final Grade - Evaluated with Deep Residential Data
I7-2-22	R74AZ144	0 - 0.5	1.8	Not Excavated - See UCL evaluation for Area #1 Downstream
	R74AZ144	0 - 0.5	2.5	Not Excavated - See UCL evaluation for Area #1 Downstream
	R74CZ150	0 - 0.5	170	Excavated
	R74CZ150	1 - 1.5	74	Excavated
	R74CZ150	2 - 2.5	64	Excavated

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

Table 3B
Area #1 Upstream
Samples included in UCL Calculation

LOCATION_ID	Depth (ft)	Total PCBs (ppm)
R49CZ120	0 - 0.5	0.2J
R49CZ120	1 - 1.5	0.32
R49CZ120	2 - 2.5	0.6J
R49CZ125	0 - 0.5	1J
R49CZ125	1 - 1.5	0.7J
R49CZ125	2 - 2.5	0.6J
R50AZ109	0 - 0.5	0.2J
R50AZ109	1 - 1.5	0.2J
R50AZ109	2 - 2.5	0.2J
R50AZ118	0 - 0.5	0.59
R50AZ118	1 - 1.5	0.6J
R50AZ118	2 - 2.5	0.6J
R50BZ111	0 - 0.5	0.5U
R50BZ111	1 - 1.5	0.6U
R50BZ111	2 - 2.5	0.6U
R50BZ117	0 - 0.5	0.5J
R50BZ117	1 - 1.5	0.1U
R50BZ117	2 - 2.5	0.5U
R50CZ114	0 - 0.5	0.3J
R50CZ114	1 - 1.5	0.6J
R50CZ114	2 - 2.5	0.3
R50CZ122	0 - 0.5	1.3J
R50CZ122	1 - 1.5	0.6J
R50CZ122	2 - 2.5	0.4J
R51AZ126	0 - 0.5	0.13
R51AZ126	1 - 1.5	1.4U
R51AZ126	2 - 2.5	1.5U
R51BZ129	0 - 0.5	0.6U
R51BZ129	1 - 1.5	0.6U
R51BZ129	2 - 2.5	0.5U
R51BZ136	0 - 0.5	0.2J
R51BZ136	1 - 1.5	0.9
R51BZ136	2 - 2.5	1.9
R51CZ134	0 - 0.5	1U
R51CZ134	1 - 1.5	0.7U
R51CZ134	2 - 2.5	0.1J
R51CZ141	0 - 0.5	1.9
R51CZ141	1 - 1.5	0.2J
R51CZ141	2 - 2.5	0.5U
R75AZ137	0 - 0.5	0.41

PCB Concentration Qualifiers: U - Non Detect; J - Estimated

Table 3B
Area #1 Upstream
Samples included in UCL Calculation

LOCATION_ID	Depth (ft)	Total PCBs (ppm)
R75AZ137	1 - 1.5	0.2J
R75AZ137	2 - 2.5	0.4J
R75AZ144	0 - 0.5	0.7J
R75AZ144	1 - 1.5	0.5U
R75AZ144	2 - 2.5	0.5U
R75BZ136.5	0 - 0.5	0.5J
R75BZ136.5	1 - 1.5	0.4J
R75BZ136.5	2 - 2.5	0.5U
R75BZ143	0 - 0.5	0.7J
R75BZ143	1 - 1.5	0.22
R75BZ143	2 - 2.5	0.2J
R49C115	0 - 0.5	0.9J
R49C115	1 - 1.5	1J
R49C115	1.5 - 2	0.7
R49C115	0.5 - 1	0.5J

PCB Concentration Qualifiers: U - Non Detect; J - Estimated

Table 3C
Area #1 Downstream
Samples Included in UCL Calculation

LOCATION_ID	Depth (ft)	Total PCBs (ppm)
R74AZ144	0 - 0.5	1.8
R74AZ144	1 - 1.5	1.2
R74AZ144	2 - 2.5	0.6
R74BZ142	0 - 0.5	0.6U
R74BZ142	1 - 1.5	0.5U
R74BZ142	2 - 2.5	0.5U
R74BZ151	0 - 0.5	1.6
R74BZ151	1 - 1.5	0.8
R74BZ151	2 - 2.5	1

PCB Concentration Qualifiers: U - Non Detect; J - Estimated

TABLE 4
Higher Bank Evaluation Area #2 PCB Results

Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)	Evaluation Result
I7-3-4	I7-3-4-SS-4	0 - 0.5	0.412	Excavated
	I7-3-4-SS-4	0.5 - 1	0.132U	Excavated
	R53AZ100	0 - 0.5	1.2	Excavated
	R53AZ100	1 - 1.5	0.6U	Excavated
	R53AZ100	2 - 2.5	0.4J	Excavated
	R53AZ107	0 - 0.5	2.6	Excavated
	R53AZ107	0 - 0.5	4	Excavated
	R53AZ107	1 - 1.5	0.8	Excavated
	R53AZ107	2 - 2.5	1.5	Excavated
	R53AZ114	0 - 0.5	10.3	Excavated
	R53AZ114	1 - 1.5	2.7	Excavated
	R53AZ114	2 - 2.5	1.6	Excavated
	R53AZ114	0 - 0.5	7.8	Excavated
	R53BZ113	0 - 0.5	18	Excavated
	R53BZ113	1 - 1.5	0.8	Excavated
	R53BZ113	2 - 2.5	1.7	Excavated
	R53BZ113	2 - 2.5	2.7	Excavated
I7-3-3	R65A100	0 - 0.5	1.6	Excavated
	R65A100	1 - 1.5	0.6	Eliminated (<2 ppm)
	R65A100	1.5 - 2	0.5U	Eliminated (<2 ppm)
	R65A100	0.5 - 1	1.2	Excavated
	R65AZ105	0 - 0.5	0.6U	Eliminated (<2 ppm)
	R65AZ105	1 - 1.5	0.6U	Eliminated (<2 ppm)
	R65AZ105	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R65AZ110	0 - 0.5	1.2J	Eliminated (<2 ppm)
	R65AZ110	1 - 1.5	4.1J	> 3 ft below final grade
	R65AZ110	2 - 2.5	3.1J	> 3 ft below final grade
	R65AZ115	0 - .5	24	Excavated
	R65AZ115	0 - 0.5	11	Excavated
	R65AZ115	1 - 1.5	0.5J	Eliminated (<2 ppm)
	R65AZ115	2 - 2.5	0.6J	Eliminated (<2 ppm)
	R65BZ098	0 - 0.5	3.3J	Excavated
	R65BZ098	1 - 1.5	0.6J	Eliminated (<2 ppm)
	R65BZ098	2 - 2.5	0.09	Eliminated (<2 ppm)
	R65BZ098	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R65BZ103	0 - 0.5	2.2J	Excavated
	R65BZ103	1 - 1.5	0.7J	Eliminated (<2 ppm)
	R65BZ103	2 - 2.5	1.1J	Eliminated (<2 ppm)
	R65BZ108	0 - 0.5	12	Excavated
	R65BZ108	1 - 1.5	7.8J	> 3 ft below final grade
	R65BZ108	2 - 2.5	21J	> 3 ft below final grade
	R65CZ096	0 - 0.5	1.2U	Excavated
	R65CZ096	1 - 1.5	0.5U	Eliminated (<2 ppm)
	R65CZ096	2 - 2.5	0.5U	Eliminated (<2 ppm)
	R65CZ103	0 - 0.5	2.2J	Excavated
	R65CZ103	1 - 1.5	0.7J	Eliminated (<2 ppm)
	R65CZ103	2 - 2.5	1.1J	Eliminated (<2 ppm)
	R65CZ110	0 - 0.5	11J	Excavated
	R65CZ110	1 - 1.5	0.7J	Eliminated (<2 ppm)
	R65CZ110	2 - 2.5	3.5J	> 3 ft below final grade
	R65CZ110	2 - 2.5	2.5J	> 3 ft below final grade
	RB021724	1 - 1.5	0.533J	Eliminated (<2 ppm)

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 4
Higher Bank Evaluation Area #2 PCB Results

Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)	Evaluation Result
I7-3-2	R64CZ142	0 - 0.5	9.1	Excavated
	R64CZ142	1 - 1.5	13	> 3 ft below final grade
	R64CZ142	1 - 1.5	18	> 3 ft below final grade
	R64CZ142	2 - 2.5	12	> 3 ft below final grade
	R64CZ142	2 - 2.5	15	> 3 ft below final grade
	R64DZ097	0 - 0.5	2.1	Excavated
	R64DZ097	1 - 1.5	0.4J	Eliminated (<2 ppm)
	R64DZ097	2 - 2.5	0.4J	Eliminated (<2 ppm)
	R64DZ108	0 - 0.5	0.3J	Excavated
	R64DZ108	1 - 1.5	0.3J	Excavated
	R64DZ108	2 - 2.5	0.2J	Excavated
	R64DZ108	1 - 1.5	0.6	Excavated
	R64DZ119	0 - 0.5	1.8	Excavated
	R64DZ119	1 - 1.5	0.5U	Excavated
	R64DZ119	2 - 2.5	0.2J	Excavated
	R64EZ096	0 - 0.5	0.2	Excavated
	R64EZ096	0 - 0.5	0.3J	Excavated
	R64EZ096	1 - 1.5	0.1U	Excavated
	R64EZ096	1 - 1.5	0.5U	Excavated
	R64EZ096	2 - 2.5	0.5U	Excavated
	R64EZ096	2 - 2.5	0.5U	Excavated
	R64EZ105	0 - 0.5	0.25	Excavated
	R64EZ105	0 - 0.5	0.5J	Excavated
	R64EZ105	1 - 1.5	0.2J	Excavated
	R64EZ105	2 - 2.5	0.12	Excavated
	R64EZ105	2 - 2.5	0.2J	Excavated
	R64EZ105	0 - 0.5	0.4J	Excavated
	R64EZ114	0 - 0.5	1.8	Excavated
	R64EZ114	0 - 0.5	3	Excavated
	R64EZ114	1 - 1.5	0.3J	Excavated
	R64EZ114	1 - 1.5	0.41	Excavated
	R64EZ114	2 - 2.5	0.5	Excavated
	R64EZ114	2 - 2.5	0.4J	Excavated

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 5
Higher Bank Evaluation Area #3 PCB Results

Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)	Parcel ID	Location ID	Depth (ft)	Total PCBs (ppm)
I6-1-68	BE-0007	0 - 0.5	0.2U	I6-1-69	R78AZ145	0 - 0.5	0.36
	BE-0007	1 - 1.5	0.2U		R78AZ145	0 - 0.5	0.4J
	BE-0007	2 - 2.5	0.2U		R78AZ145	1 - 1.5	0.5U
	BS000349	0 - 1	0.21		R78AZ145	2 - 2.5	1U
	BS000349	1 - 2	0.019U		R78BZ132	0 - 0.5	0.3J
	BS000349	2 - 3	0.81		R78BZ132	1 - 1.5	0.5U
	BS000350	0 - 1	0.28		R78BZ132	2 - 2.5	0.5U
	BS000350	1 - 2	0.031		R78BZ139	0 - 0.5	0.5J
	BS000350	2 - 3	0.03		R78BZ139	1 - 1.5	0.5U
	R56AZ208	0 - 0.5	0.2		R78BZ139	2 - 2.5	0.5U
	R56AZ208	0 - 0.5	0.6U		R78CZ119	0 - 0.5	0.4J
	R56AZ208	1 - 1.5	0.5U		R78CZ119	1 - 1.5	0.5U
	R56AZ208	2 - 2.5	0.5U		R78CZ119	2 - 2.5	0.5U
	R56AZ216	0 - 0.5	0.5U		R78DZ116	0 - 0.5	0.3J
	R56AZ216	1 - 1.5	0.5U		R78DZ116	1 - 1.5	0.5U
	R56AZ216	1 - 1.5	0.5U		R78DZ116	2 - 2.5	0.5U
	R56AZ216	2 - 2.5	0.3J		R78DZ124	0 - 0.5	0.5J
	R56BZ205	0 - 0.5	0.5J		R78DZ124	1 - 1.5	0.5U
	R56BZ205	1 - 1.5	0.5U		R78DZ124	2 - 2.5	0.5U
	R56BZ205	2 - 2.5	0.5U		R78EZ109	0 - 0.5	0.5U
	R56CZ185	0 - 0.5	0.4J		R78EZ109	1 - 1.5	0.5U
	R56CZ185	1 - 1.5	0.4J		R78EZ109	2 - 2.5	0.5U
	R56CZ185	2 - 2.5	1.6		R78EZ118	0 - 0.5	0.37
	R56CZ195	0 - 0.5	0.3J		R78EZ118	0 - 0.5	0.4J
	R56CZ195	1 - 1.5	0.5U		R78EZ118	1 - 1.5	0.5U
	R56CZ195	2 - 2.5	0.5U		R78EZ118	2 - 2.5	0.5U
	R56DZ172	0 - 0.5	0.3J		R78FZ100	0 - 0.5	0.6U
	R56DZ172	1 - 1.5	0.6U		R78FZ100	1 - 1.5	0.3J
	R56DZ172	2 - 2.5	0.5U		R78FZ100	2 - 2.5	0.3J
	R56DZ180	0 - 0.5	0.7		R78FZ111	0 - 0.5	0.5U
	R56DZ180	1 - 1.5	0.7		R78FZ111	1 - 1.5	0.5U
	R56DZ180	2 - 2.5	0.5U		R78FZ111	2 - 2.5	0.5U

PCB Concentration Qualifiers: U - Non-Detect J - Estimated

TABLE 6
Higher Bank Evaluation Area #4 PCB Results

Location ID	Depth (ft)	Total PCBs (ppm)
BS000353	0 - 1	0.042
BS000353	1 - 2	0.018U
BS000353	2 - 3	0.018U
BS000354	0 - 1	0.37
BS000354	1 - 2	0.12
BS000354	2 - 3	0.071
BS000355	0 - 1	0.079
BS000355	1 - 2	0.02U
BS000355	2 - 3	0.018U
BS000356	0 - 1	0.018U
BS000356	1 - 2	0.018U
BS000356	2 - 3	0.018U
BS000357	0 - 1	0.94
BS000357	1 - 2	0.098
BS000357	2 - 3	0.14
RB022021	0 - .5	1.61U
RB022021	1 - 1.5	0.608U
RB022021	2 - 2.5	0.603U
RB022022	0 - 0.5	7.58

Note: All samples located on Parcel
I7-1-101 (Fred Garner Park)

TABLE 7
Summary of PCB UCL Evaluation to Determine Surficial Remediation Limits

Area	Data Set Characteristics		Property Usage Classification	UCL Information			Remediation Requirement
	Bank Position ^x	Sample Depths (ft)		Data Distribution	UCL	UCL Method	
Area 1 - Upstream (West Bank)	Variable	0-3	Residential (Parcels I7-2-26, I7-2-25, I7-2-24, I7-2-23)	Non-Parametric	0.590539-0.720405 ^t	95% Standard Bootstrap 95% Chebyshev (Mean, Std)	The UCL results are less than the 2 ppm cleanup level. Data indicates that no remediation is necessary within the data evaluation area.
Area 1 - Downstream (West Bank)	Variable	0-3	Residential (Parcels I7-2-22)	Normal	1.329012	Student's-t	The UCL results are less than the 2 ppm cleanup level. Data indicates that no remediation is necessary within the data evaluation area.
Area 3 (East Bank)	High	0-3	Residential (Parcels I6-1-68, I6-1-69)	Non-Parametric	0.35853-0.43755 ^t	95% Standard Bootstrap 95% Chebyshev (Mean, Std)	The UCL results are less than the 2 ppm cleanup level. Data indicates that no remediation is necessary within the data evaluation area.
Area 4 (West Bank)	High	0-3	Recreational (Parcel I7-1-101 Fred Garner Park)	Non-Parametric	1.22165-4.74060 ^t	95% Standard Bootstrap 95% Bootstrap-t	The UCL results are less than the 10 ppm cleanup level. Data indicates that no remediation is necessary within the data evaluation area.

Notes:

^x The bank position was established by spatial analysis in the ArcView GIS program.

^t The minimum and maximum of five separate non parametric UCL calculations is presented

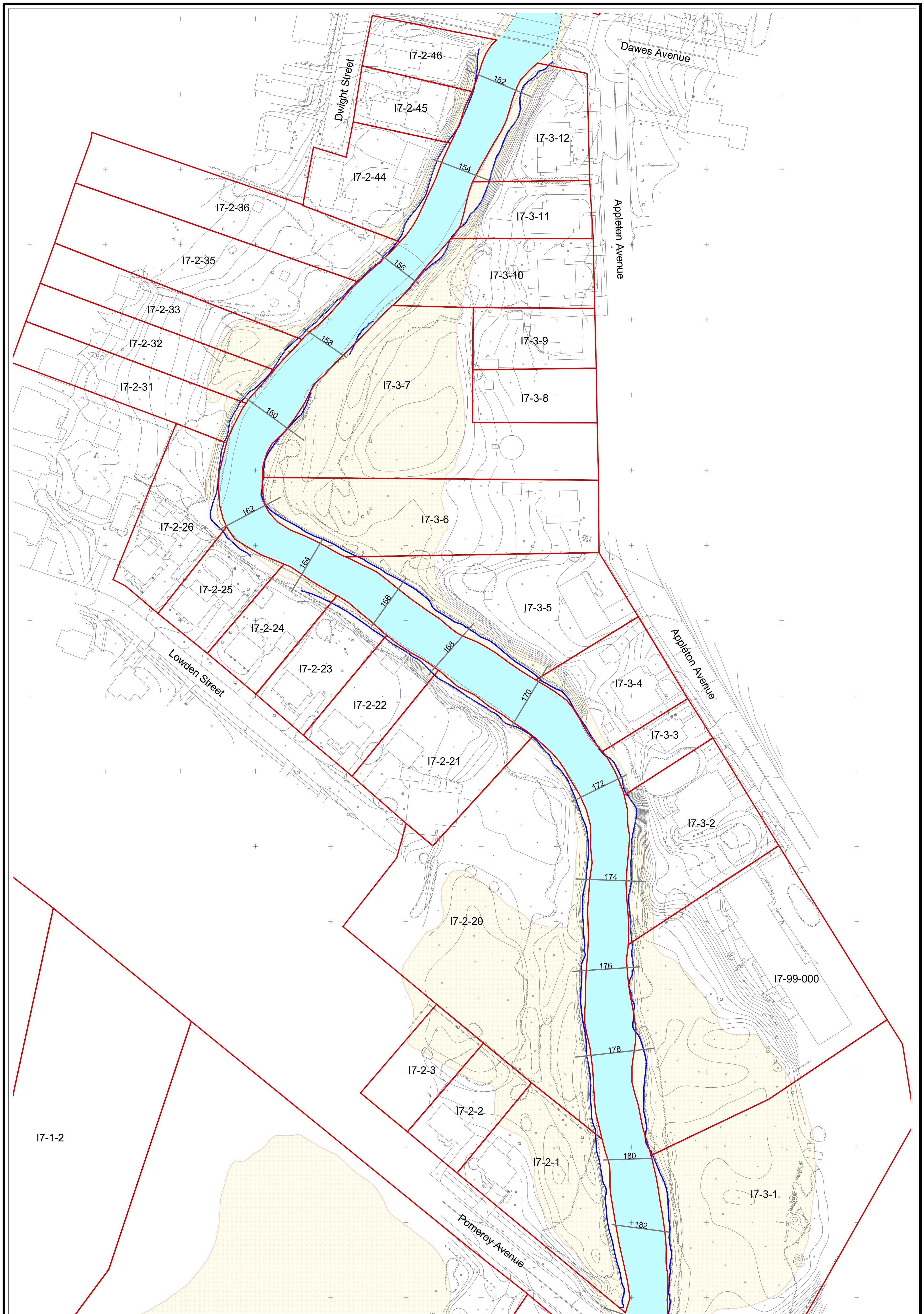
All non-detected PCB results were used at half the detection limit reported

Duplicate Sample Results: If both sample results were non-detects, the higher result was used at its full detection limit. If both sample results were detect/hits, the results were averaged. If one sample result was a detect/hit and one a non-detect, the detect/hit result was used.

TABLE 8
Summary of Deep (Greater than 3 Foot) Excavation Limits for Residential Properties

Parcel ID	Area of Additional Excavation	Depth of Excavation (ft)
I6-1-66	1	4
	2	4
I7-2-20	1	5
	2	5
I7-2-26	1	4
	2	5
I7-2-31	1	4
	2	4
	3	4
I7-2-32	1	Ground Water Table
	2	Ground Water Table
	3	4
I7-2-33	1	Ground Water Table
	2	Ground Water Table
	3	Ground Water Table
I7-2-35	1	4
	2	4
I7-2-36	1	4
I7-2-44	2	5
	3	5
I7-3-1	3	4
I7-3-4	3	8
	4	4
I7-3-5	1	4
	2	5
	3	5
	4	4
I7-3-6	1	Ground Water Table
	2	Ground Water Table
	3	Ground Water Table
I7-3-7	2	5
	3	5
	4	Ground Water Table
I7-3-10	1	4
I7-99-000	1	5
	3	5

Note: The depth of the Ground Water Table will be established in the Phase 3 Design. Removal of soil to these depths in these areas results in an overall PCB arithmetic average concentration of less than 10 ppm in the 1.5 Mile Removal Action excavation area from 0-6 feet depth, and no exceedance of 50 ppm at any location within this area. All other residential parcels do not require remediation below three feet.



LEGEND:

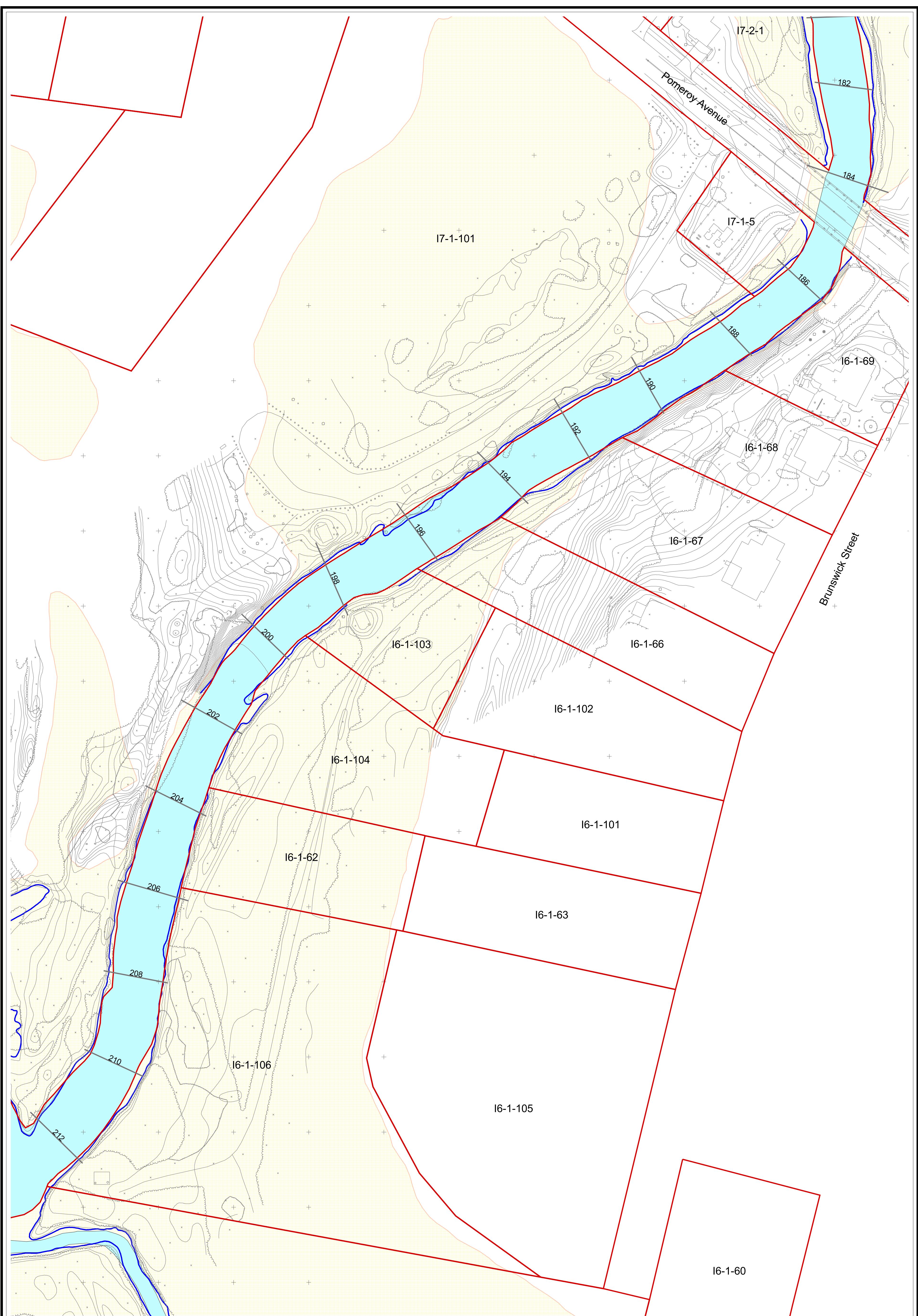
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|---|--------------------|--|----------|
| | River | — | Transect |
| | 10-year Floodplain | — | Roads |
| | Parcel | | |

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50 0 50 100 Feet

Housatonic River Project
Pittsfield, Massachusetts

**Phase 3 - 1.5 Mile Removal Action
Site Map
Figure 1 - Map 1 Of 2**



LEGEND:

River

154 Transect

10-year Floodplain

 Roads

A small, empty square box with a thick red border.

Parce

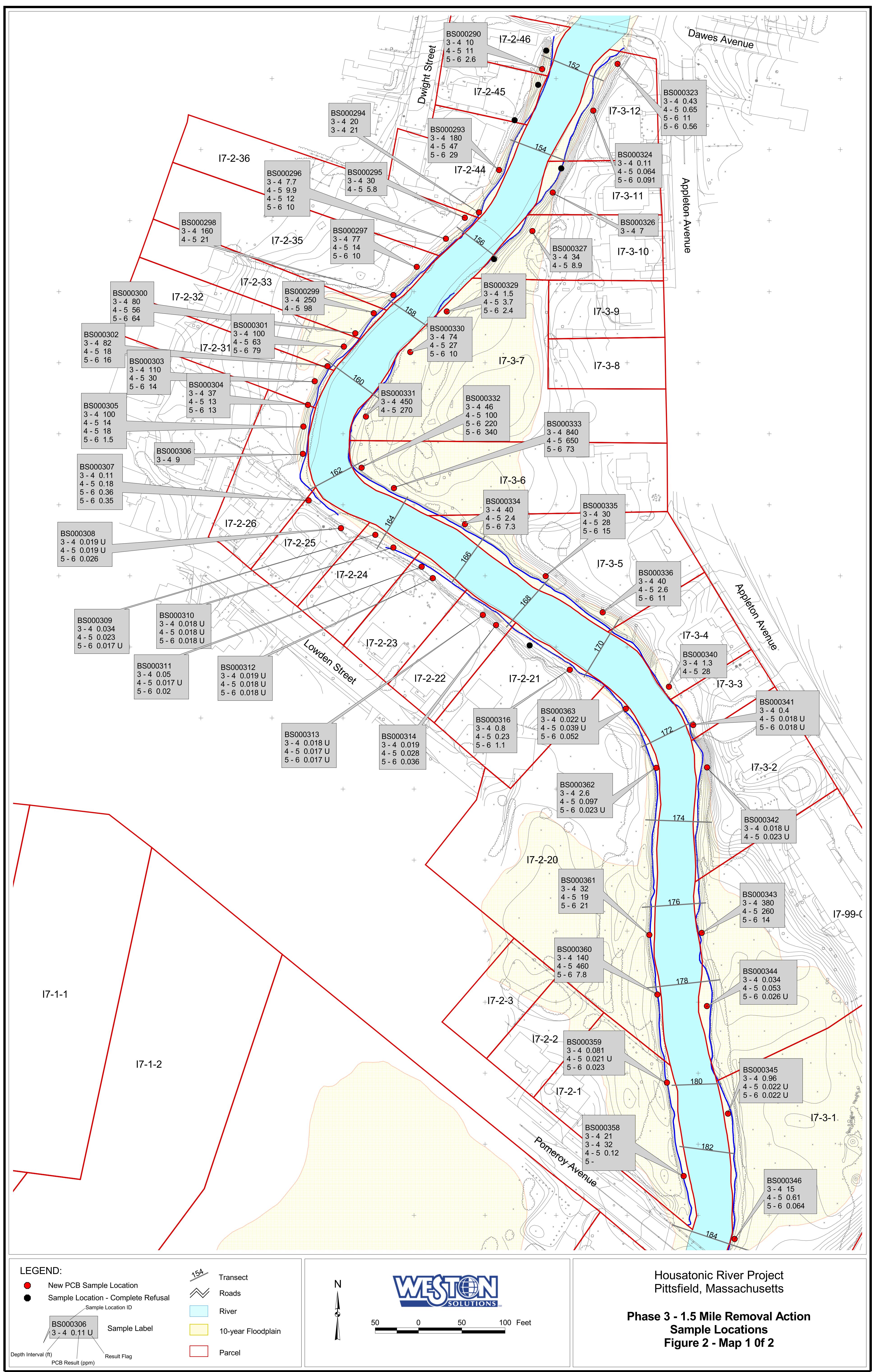


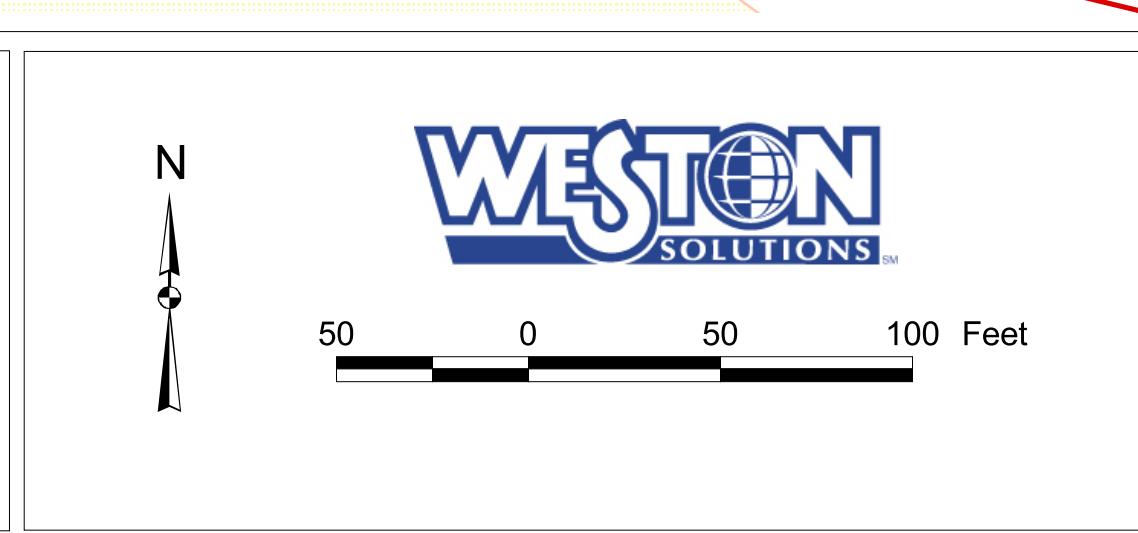
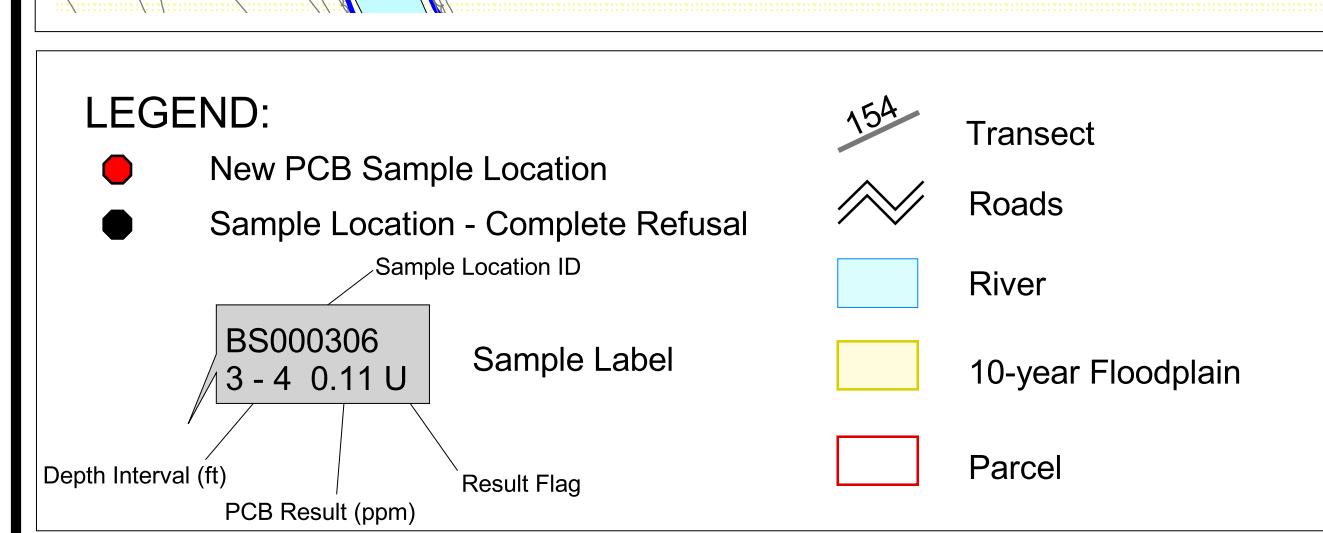
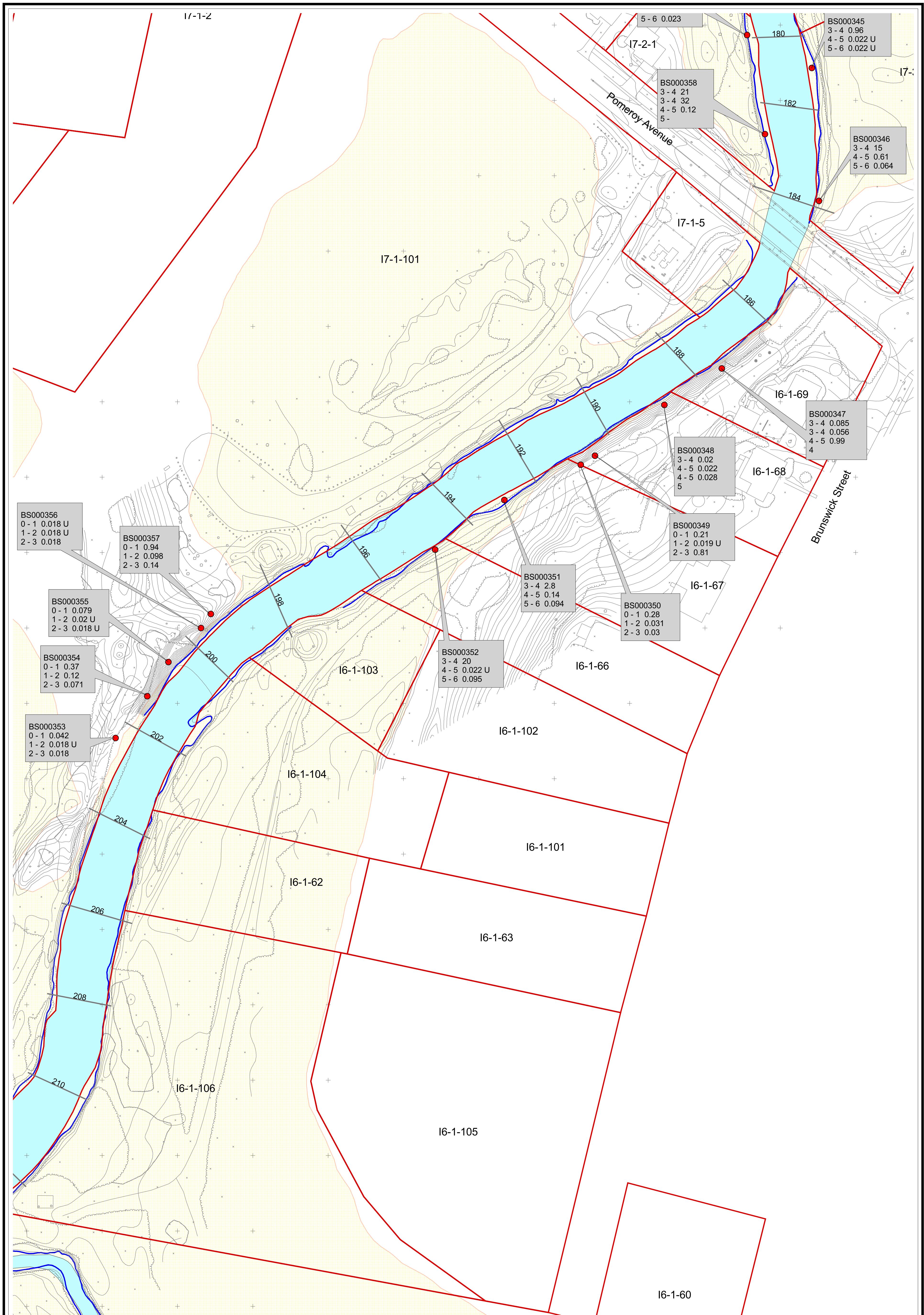
50 0 50 100 Feet

Housatonic River Project Pittsfield, Massachusetts

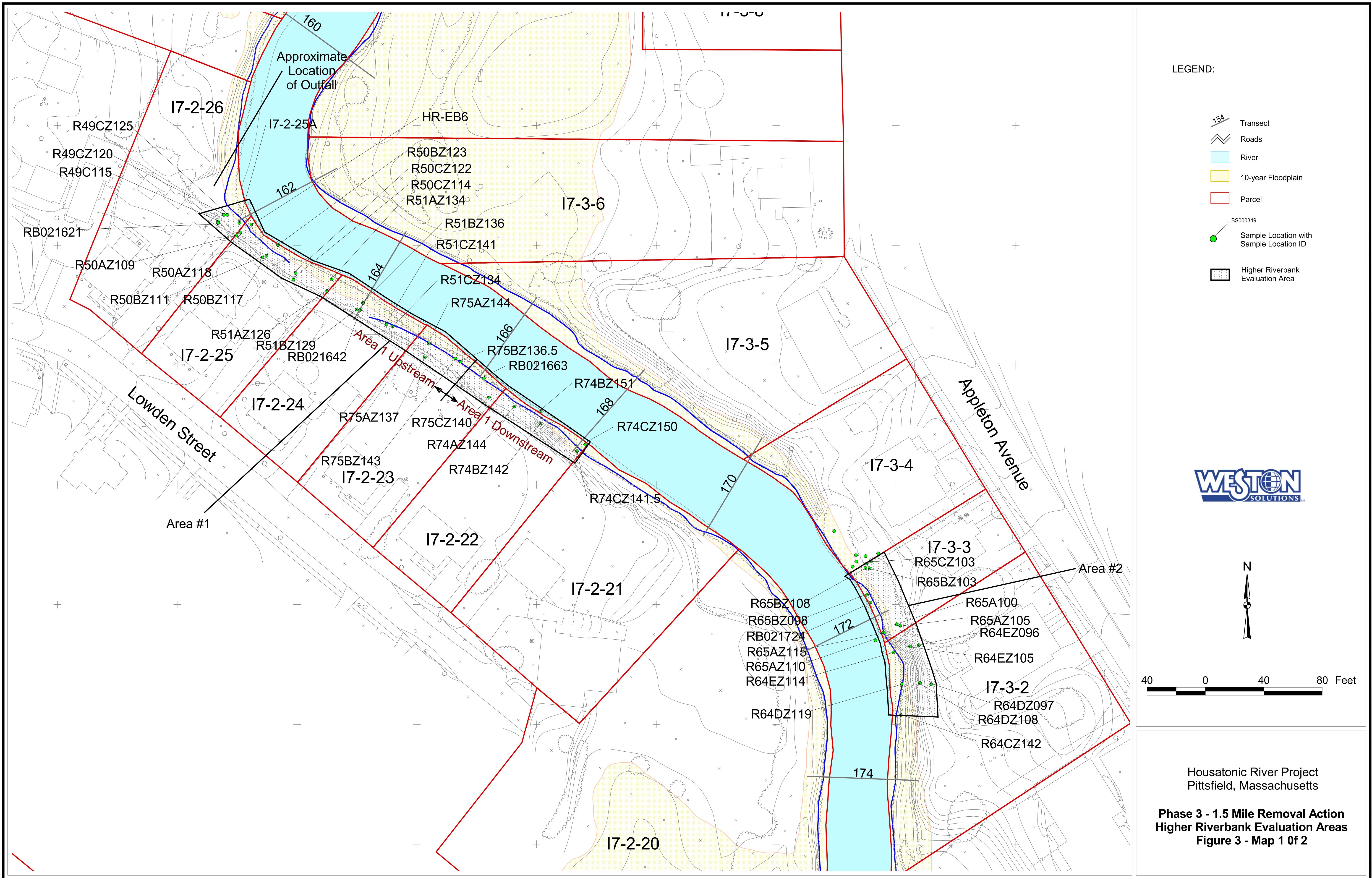
Phase 3 - 1.5 Mile Removal Action Site Map

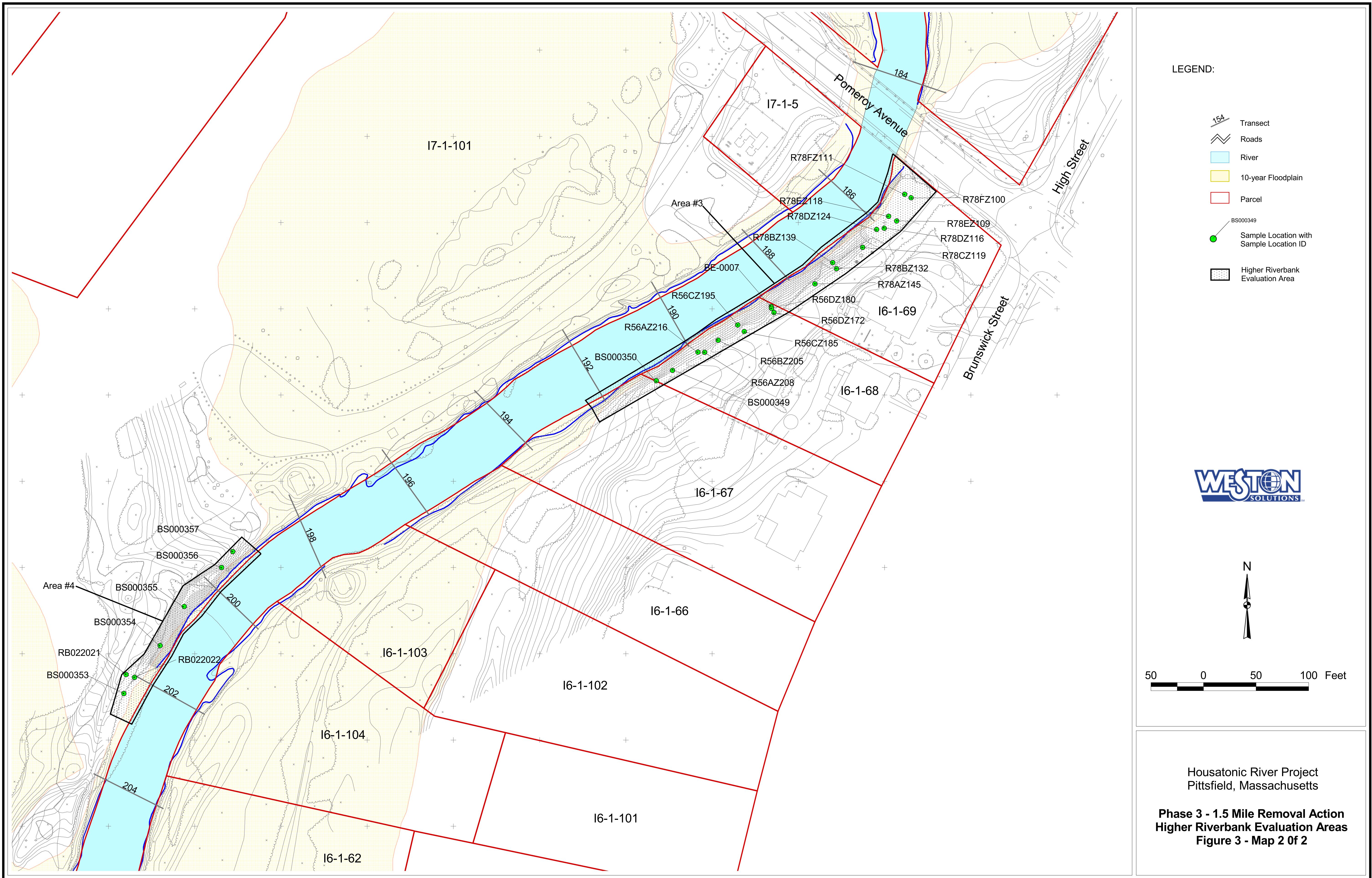
Figure 1 - Map 2 Of 2

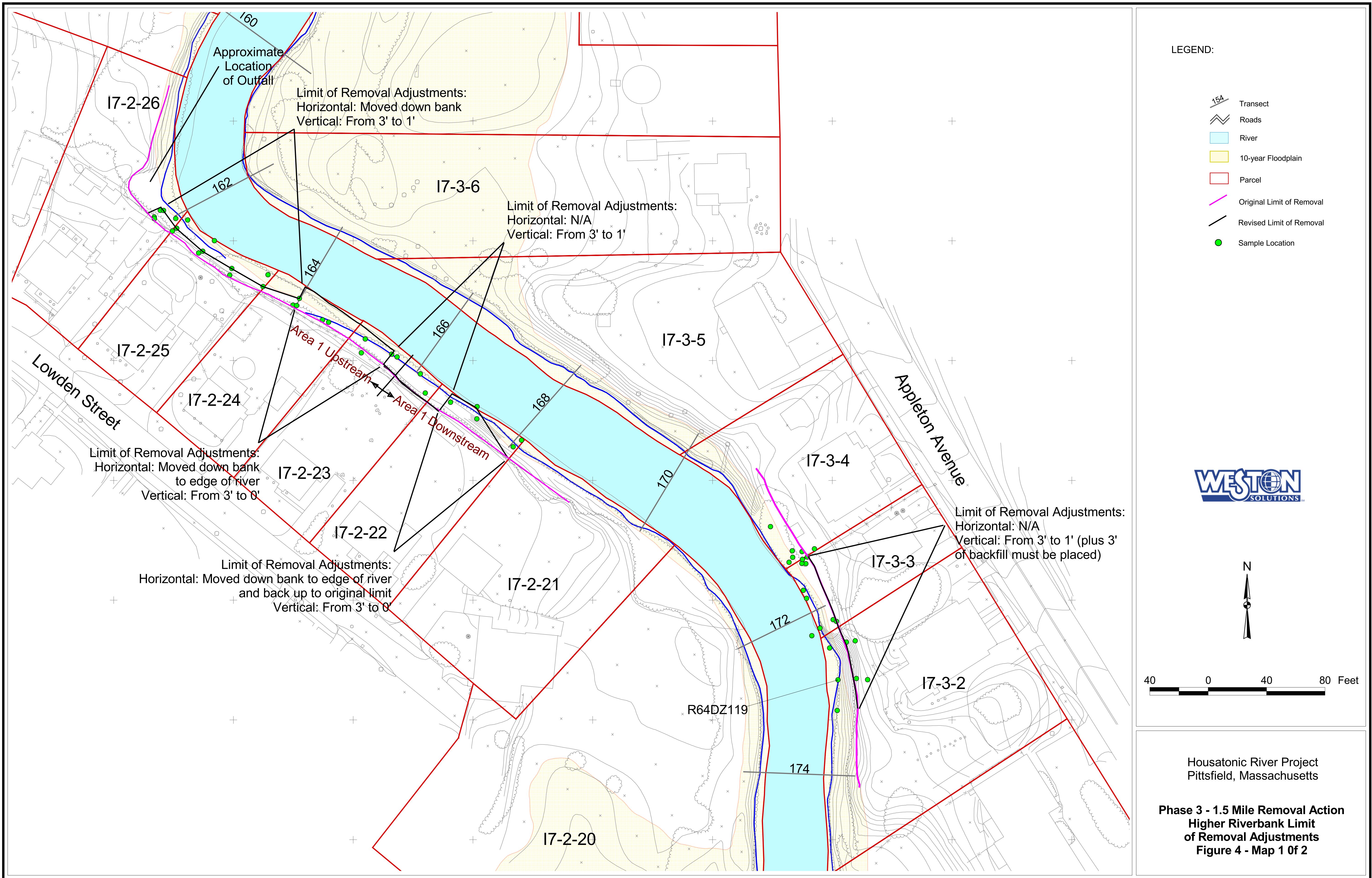


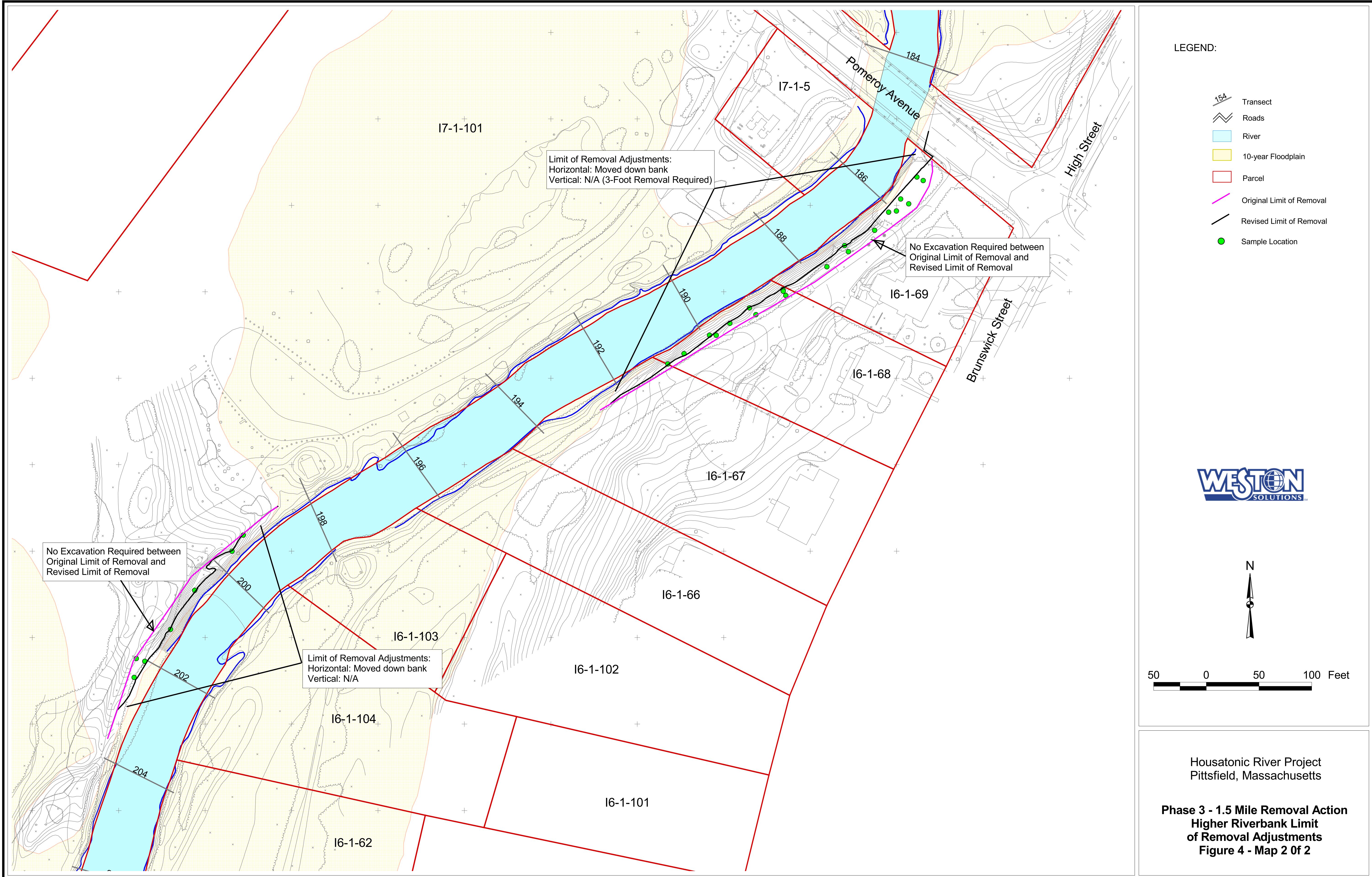


Housatonic River Project
Pittsfield, Massachusetts
**Phase 3 - 1.5 Mile Removal Action
Sample Locations**
Figure 2 - Map 2 of 2



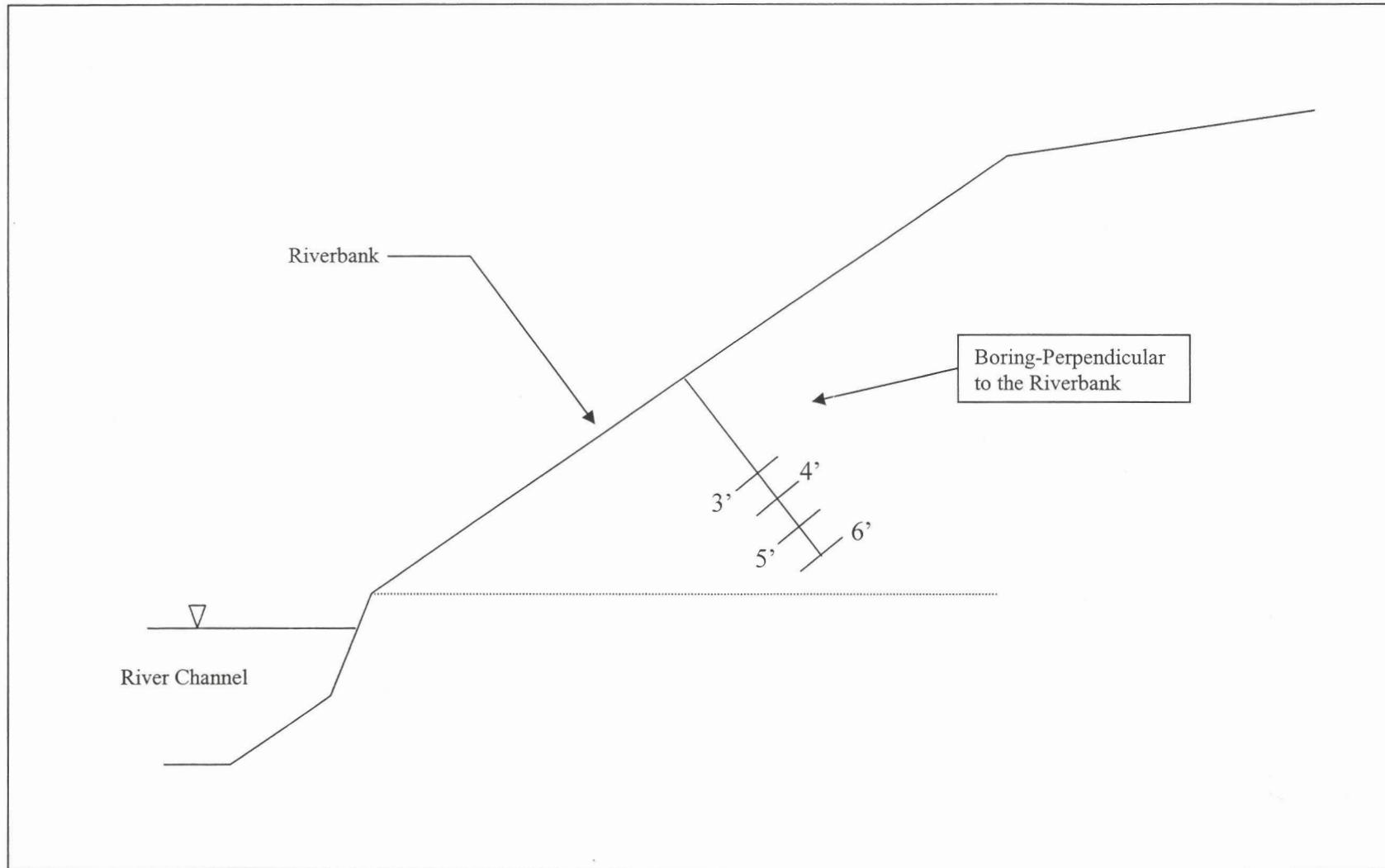


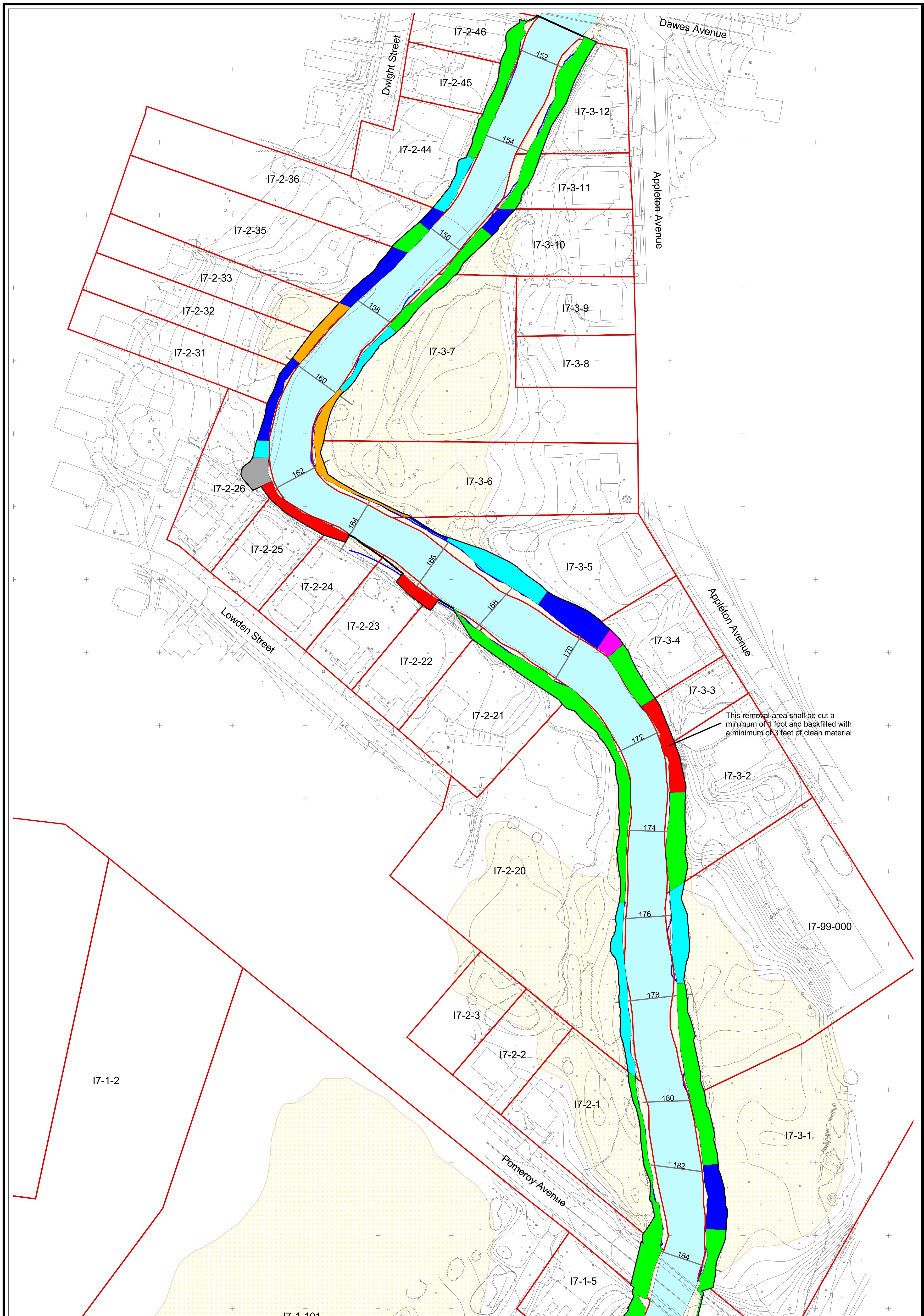




| g:\1_5 mile\1_5 mile phase iii\phase 3 rb sampling\phase3rbSampling.apr | Figure 3 Eval Areas 1 of 2 | Full Name of Plot File | 11:16 AM, 6/28/20

Figure 5: Cross Section Schematic for Deep Sample Locations





LEGEND:

- River
- 10-year Floodplain
- Parcel
- Transect
- Roads

Final Horizontal Limit of Removal

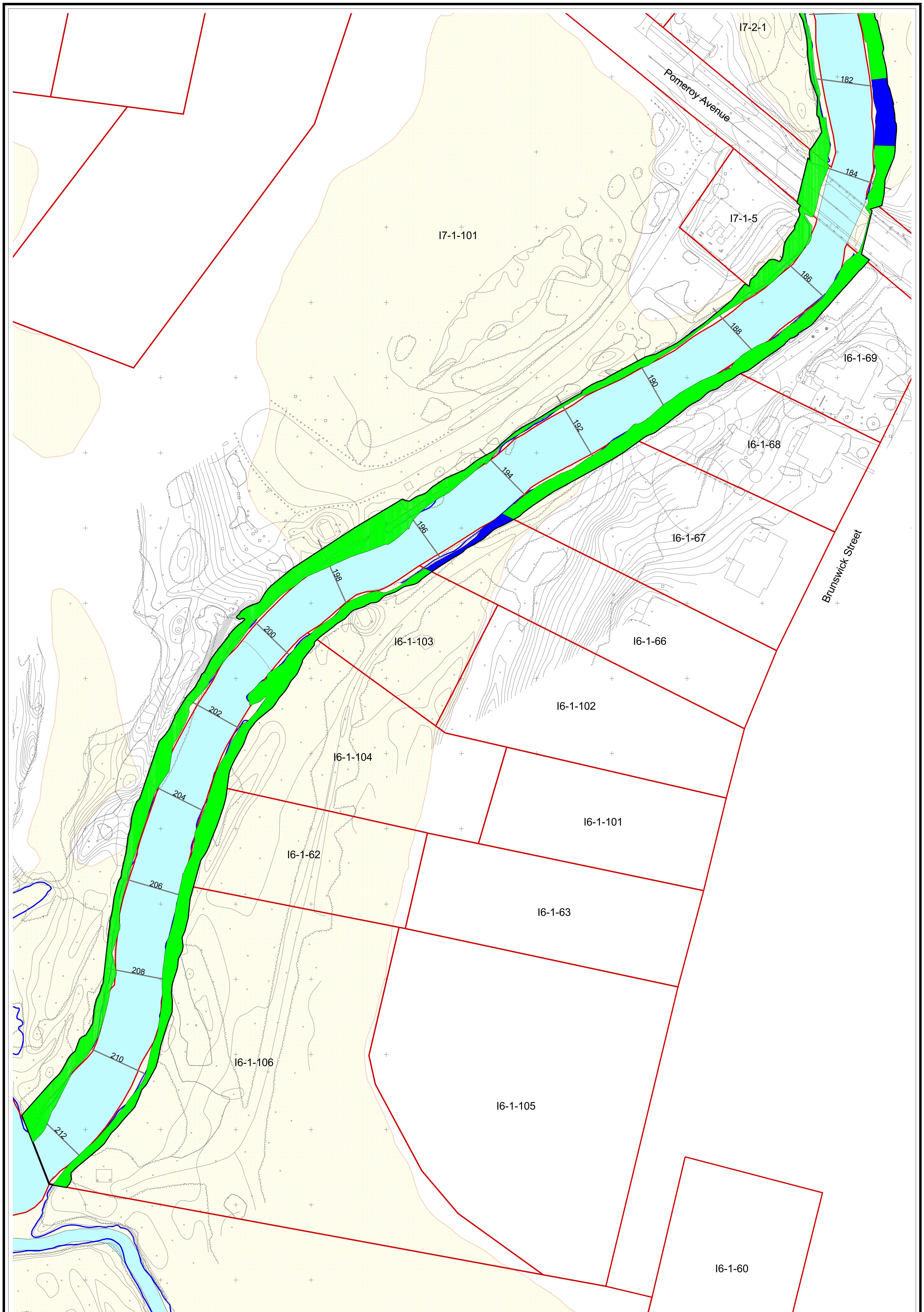
- | Legend for Vertical Limit of Removal | |
|--------------------------------------|------------------|
| 1 Foot Cut Depth | 3 Foot Cut Depth |
| 4 Foot Cut Depth | 5 Foot Cut Depth |
| 6 Foot Cut Depth | 8 Foot Cut Depth |
| Ground Water Cut Depth | |
| Outfall Cut Area | |



50 0 50 100 Feet

Housatonic River Project
Pittsfield, Massachusetts

**Phase 3 - 1.5 Mile Removal Action
Final Limit of Removal
Figure 6 - Map 1 Of 2**



LEGEND:

- River
- 10-year Floodplain
- Parcel
- Transect
- Roads

Final Horizontal Limit of Removal

- | | |
|--------------------------------------|------------------|
| Legend for Vertical Limit of Removal | |
| 3 Foot Cut Depth | 4 Foot Cut Depth |



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50 0 50 100 Feet

Housatonic River Project
Pittsfield, Massachusetts

**Phase 3 - 1.5 Mile Removal Action
Final Limit of Removal
Figure 6 - Map 2 of 2**

ATTACHMENT A

Area #1 - Upstream
ProUCL Software Output for Analysis of Surficial PCB Concentrations

ProUCL Output

Summary Statistics for Area#1 Upstream
Number of Samples 55
Minimum 0.1
Maximum 1.9
Mean 0.513090909
Median 0.41
Standard Deviation 0.352724175
Variance 0.124414343
Coefficient of Variation 0.687449667
Skewness 1.792517789

Lilliefors Test Statistic 0.151166534
Lilliefors 5% Critical Value 0.119468216
Data not Normal at 5% Significance Level
Data not Lognormal: Try Non-parametric UCL

95 % UCL (Assuming Normal Data)
Student's-t 0.592687849

95 % UCL (Adjusted for Skewness)
Adjusted-CLT 0.603605654
Modified-t 0.594603802

95 % Non-parametric UCL
CLT 0.591322316
Jackknife 0.592687849
Standard Bootstrap 0.590539748
Bootstrap-t 0.608811891
Chebyshev (Mean, Std) 0.720405888

Area #1 - Downstream
ProUCL Software Output for Analysis of Surficial PCB Concentrations

ProUCL Output

Summary Statistics for Area#1 Downstream
Number of Samples 9
Minimum 0.25
Maximum 2.15
Mean 0.922222222
Median 0.95
Standard Deviation 0.656273148
Variance 0.430694444
Coefficient of Variation 0.711621486
Skewness 0.740418813

Shapiro-Wilk Test Statistic 0.911705185

Shapiro-Wilk 5% Critical Value 0.829

Data are Normal at 5% Significance Level

Recommended UCL to use Student's-t

95 % UCL (Assuming Normal Data)

Student's-t 1.329012702

95 % UCL (Adjusted for Skewness)

Adjusted-CLT 1.339736571
Modified-t 1.338011164

95 % Non-parametric UCL

CLT 1.282046645
Jackknife 1.329012702
Standard Bootstrap 1.257367871
Bootstrap-t 1.45437266
Chebyshev (Mean, Std) 1.875764999

Area #3
ProUCL Software Output for Analysis of Surficial PCB Concentrations

ProUCL Output

Summary Statistics for Area #3
Number of Samples 60
Minimum 0.0095
Maximum 1.6
Mean 0.312758333
Median 0.25
Standard Deviation 0.221772893
Variance 0.049183216
Coefficient of Variation 0.709087079
Skewness 3.679948928

Lilliefors Test Statistic 0.30627143
Lilliefors 5% Critical Value 0.114382108
Data not Normal at 5% Significance Level
Data not Lognormal: Try Non-parametric UCL

95 % UCL (Assuming Normal Data)
Student's-t 0.360602982

95 % UCL (Adjusted for Skewness)
Adjusted-CLT 0.374385546
Modified-t 0.362869963

95 % Non-parametric UCL
CLT 0.359851739
Jackknife 0.360602982
Standard Bootstrap 0.358530909
Bootstrap-t 0.384143933
Chebyshev (Mean, Std) 0.437556911

Area #4
ProUCL Software Output for Analysis of Surficial PCB Concentrations

ProUCL Output

Summary Statistics for Area #4
Number of Samples 19
Minimum 0.009
Maximum 7.58
Mean 0.574447368
Median 0.079
Standard Deviation 1.71748643
Variance 2.949759636
Coefficient of Variation 2.989806419
Skewness 4.190121849

Shapiro-Wilk Test Statistic 0.351895712
Shapiro-Wilk 5% Critical Value 0.901
Data not Normal at 5% Significance Level
Data not Lognormal: Try Non-parametric UCL

95 % UCL (Assuming Normal Data)
Student's-t 1.257700286

95 % UCL (Adjusted for Skewness)
Adjusted-CLT 1.62726263
Modified-t 1.320827281

95 % Non-parametric UCL
CLT 1.222549979
Jackknife 1.257700286
Standard Bootstrap 1.221659751
Bootstrap-t 4.740608941
Chebyshev (Mean, Std) 2.291933798

ATTACHMENT B

Parcel I7-2-46
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000122-0-0030	BS000122	3 - 3.5	3.88	
H2-BS000122-0-0040	BS000122	4 - 4.5	5.91	
H2-BS000122-0-0050	BS000122	5 - 5.5	8.97	
H2-BS000290-0-0030	BS000290	3 - 4	10	
H2-BS000290-0-0040	BS000290	4 - 5	11	
H2-BS000290-0-0050	BS000290	5 - 6	2.6	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000122	3 - 3.5	3.88	
	BS000122	4 - 4.5	5.91	
	BS000122	5 - 5.5	8.97	
	BS000290	3 - 4	10	
	BS000290	4 - 5	11	
	BS000290	5 - 6	2.6	

Averaging Calculations

Depth Interval(ft)	Areas	
	BS000122 & BS000290	
	1	
3 - 4		6.94
4 - 5		8.455
5 - 6		5.785

Depth Interval(ft)	Areas	
	BS000122 & BS000290	
	1	
3 - 4		6.94
4 - 5		8.455
5 - 6		5.785
Averages		7.060
Overall Average=		7.060

Parcel I7-2-45
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000123-0-0030	BS000123	3 - 3.5	0.5	U

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000123	3 - 3.5	0.5	U

Averaging Calculations

Depth Interval(ft)	Areas
	BS000123
	1
3 - 4	0.5
4 - 5	
5 - 6	

Depth Interval(ft)	Areas
	BS000123
	1
3 - 4	0.25
4 - 5	
5 - 6	
Averages	0.250
Overall Average=	0.250

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-44
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000124-0-0030	BS000124	3 - 3.5	6.31	
H2-BS000124-0-0040	BS000124	4 - 4.5	2.1	
H2-BS000293-0-0030	BS000293	3 - 4	180	
H2-BS000293-0-0040	BS000293	4 - 5	47	
H2-BS000293-0-0050	BS000293	5 - 6	29	
H2-BS000294-0-0030	BS000294	3 - 4	20	
H2-BS000294-1-0030	BS000294	3 - 4	21	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000124	3 - 3.5	6.31	
	BS000124	4 - 4.5	2.1	
2	BS000293	3 - 4	180	
	BS000293	4 - 5	47	
3	BS000293	5 - 6	29	
	BS000294	3 - 4	20	
3	BS000294	3 - 4	21	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000124	BS000293	BS000294
	1	2	3
3 - 4	6.31	180	20.5
4 - 5	2.1	47	
5 - 6		29	

Depth Interval(ft)	Areas		
	BS000124	BS000293	BS000294
	1	2	3
3 - 4	6.31	0.009	0.009
4 - 5	2.1	0.009	0.009
5 - 6		29	
Averages	4.205	9.673	0.009
	Overall Average=		4.629

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-36
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000295-0-0030	BS000295	3 - 4	30	
H2-BS000295-0-0040	BS000295	4 - 5	5.8	
H2-BS000296-0-0030	BS000296	3 - 4	7.7	
H2-BS000296-0-0040	BS000296	4 - 5	9.9	
H2-BS000296-0-0050	BS000296	5 - 6	10	
H2-BS000296-1-0040	BS000296	4 - 5	12	
H2-BS000125-0-0030	BS000125	3 - 3.5	11.4	
H2-BS000125-1-0030	BS000125	3 - 3.5	10.4	
H2-BS000125-0-0040	BS000125	4 - 4.5	19.8	
H2-BS000125-0-0050	BS000125	5 - 5.5	3.6	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000295	3 - 4	30	
	BS000295	4 - 5	5.8	
2	BS000296	3 - 4	7.7	
	BS000296	4 - 5	9.9	
3	BS000296	5 - 6	10	
	BS000296	4 - 5	12	
3	BS000125	3 - 3.5	11.4	
	BS000125	3 - 3.5	10.4	
3	BS000125	4 - 4.5	19.8	
	BS000125	5 - 5.5	3.6	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000295	BS000296	BS000125
3 - 4	30	7.7	10.9
4 - 5	5.8	10.95	19.8
5 - 6		10	3.6

Depth Interval(ft)	Areas		
	BS000295	BS000296	BS000125
3 - 4	0.009	7.7	10.9
4 - 5	5.8	10.95	19.8
5 - 6		10	3.6
Averages	2.905	9.550	11.433
	Overall Average=		7.963

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-35
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000297-0-0030	BS000297	3 - 4	77	
H2-BS000297-0-0040	BS000297	4 - 5	14	
H2-BS000297-0-0050	BS000297	5 - 6	10	
H2-BS000298-0-0030	BS000298	3 - 4	160	
H2-BS000298-0-0040	BS000298	4 - 5	21	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000297	3 - 4	77	
	BS000297	4 - 5	14	
	BS000297	5 - 6	10	
2	BS000298	3 - 4	160	
	BS000298	4 - 5	21	

Averaging Calculations

Depth Interval(ft)	Areas	
	BS000297	BS000298
	1	2
3 - 4	77	160
4 - 5	14	21
5 - 6	10	

Depth Interval(ft)	Areas	
	BS000297	BS000298
	1	2
3 - 4	0.009	0.009
4 - 5	14	21
5 - 6	10	
Averages	8.003	10.505
Overall Average=		9.254

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-33
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000126-0-0030	BS000126	3 - 3.5	3.66	
H2-BS000126-0-0040	BS000126	4 - 4.5	2.52	
H2-BS000126-0-0050	BS000126	5 - 5.5	0.858	
H2-BS000299-0-0030	BS000299	3 - 4	250	
H2-BS000299-0-0040	BS000299	4 - 5	98	
H2-BS000300-0-0030	BS000300	3 - 4	80	
H2-BS000300-0-0040	BS000300	4 - 5	56	
H2-BS000300-0-0050	BS000300	5 - 6	64	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000126	3 - 3.5	3.66	
	BS000126	4 - 4.5	2.52	
	BS000126	5 - 5.5	0.858	
2	BS000299	3 - 4	250	
	BS000299	4 - 5	98	
3	BS000300	3 - 4	80	
	BS000300	4 - 5	56	
	BS000300	5 - 6	64	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000126	BS000299	BS000300
	1	2	3
3 - 4	3.66	250	80
4 - 5	2.52	98	56
5 - 6	0.858		64

Depth Interval(ft)	Areas		
	BS000126	BS000299	BS000300
	1	2	3
3 - 4	0.009	0.009	0.009
4 - 5	0.009	0.009	0.009
5 - 6	0.009	0.009	0.009
Averages	0.009	0.009	0.009
Overall Average=			0.009

Note: Shaded depth intervals were designated for additional excavation.

Parcel I7-2-32
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000301-0-0030	BS000301	3 - 4	100	
H2-BS000301-0-0040	BS000301	4 - 5	63	
H2-BS000301-0-0050	BS000301	5 - 6	79	
H2-BS000128-0-0030	BS000128	3 - 3.5	32.8	
H2-BS000128-0-0040	BS000128	4 - 4.5	36.9	
H2-BS000128-0-0050	BS000128	5 - 5.5	23.4	
H2-BS000302-0-0030	BS000302	3 - 4	82	
H2-BS000302-0-0040	BS000302	4 - 5	18	
H2-BS000302-0-0050	BS000302	5 - 6	16	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000301	3 - 4	100	
	BS000301	4 - 5	63	
	BS000301	5 - 6	79	
2	BS000128	3 - 3.5	32.8	
	BS000128	4 - 4.5	36.9	
	BS000128	5 - 5.5	23.4	
3	BS000302	3 - 4	82	
	BS000302	4 - 5	18	
	BS000302	5 - 6	16	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000301	BS000128	BS000302
	1	2	3
3 - 4	100	32.8	82
4 - 5	63	36.9	18
5 - 6	79	23.4	16

Depth Interval(ft)	Areas		
	BS000301	BS000128	BS000302
	1	2	3
3 - 4	0.009	0.009	0.009
4 - 5	0.009	0.009	18
5 - 6	0.009	0.009	16
Averages	0.009	0.009	11.336
		Overall Average=	3.785

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-31
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000129-0-0030	BS000129	3 - 3.5	12.4	
H2-BS000129-0-0040	BS000129	4 - 4.5	3.76	
H2-BS000129-1-0040	BS000129	4 - 4.5	4.24	
H2-BS000129-0-0050	BS000129	5 - 5.5	1.62	
H2-BS000303-0-0030	BS000303	3 - 4	110	
H2-BS000303-0-0040	BS000303	4 - 5	30	
H2-BS000303-0-0050	BS000303	5 - 6	14	
H2-BS000304-0-0030	BS000304	3 - 4	37	
H2-BS000304-0-0040	BS000304	4 - 5	13	
H2-BS000304-0-0050	BS000304	5 - 6	13	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000129	3 - 3.5	12.4	
	BS000129	4 - 4.5	3.76	
	BS000129	4 - 4.5	4.24	
	BS000129	5 - 5.5	1.62	
2	BS000303	3 - 4	110	
	BS000303	4 - 5	30	
	BS000303	5 - 6	14	
3	BS000304	3 - 4	37	
	BS000304	4 - 5	13	
	BS000304	5 - 6	13	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000129	BS000303	BS000304
3 - 4	12.4	110	37
4 - 5	4	30	13
5 - 6	1.62	14	13

Depth Interval(ft)	Areas		
	BS000129	BS000303	BS000304
3 - 4	0.009	0.009	0.009
4 - 5	4	30	13
5 - 6	1.62	14	13
Averages	1.876	14.670	8.670
	Overall Average=		8.405

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-26
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000305-0-0030	BS000305	3 - 4	100	
H2-BS000305-0-0040	BS000305	4 - 5	14	
H2-BS000305-0-0050	BS000305	5 - 6	1.5	
H2-BS000305-1-0040	BS000305	4 - 5	18	
H2-BS000306-0-0030	BS000306	3 - 4	9	
H2-BS000307-0-0030	BS000307	3 - 4	0.11	
H2-BS000307-0-0040	BS000307	4 - 5	0.18	
H2-BS000307-0-0050	BS000307	5 - 6	0.36	J
H2-BS000307-1-0050	BS000307	5 - 6	0.35	
H2-BS000130-0-0030	BS000130	3 - 3.5	16.2	
H2-BS000130-0-0040	BS000130	4 - 4.5	67	
H2-BS000130-0-0050	BS000130	5 - 5.5	32.2	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000305	3 - 4	100	
	BS000305	4 - 5	14	
	BS000305	5 - 6	1.5	
	BS000305	4 - 5	18	
2	BS000306	3 - 4	9	
	BS000130	3 - 3.5	16.2	
	BS000130	4 - 4.5	67	
	BS000130	5 - 5.5	32.2	
3	BS000307	3 - 4	0.11	
	BS000307	4 - 5	0.18	
	BS000307	5 - 6	0.36	J
	BS000307	5 - 6	0.35	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000305	BS000306/BS000130	BS000307
	1	2	3
3 - 4	100	12.6	0.11
4 - 5	16	67	0.18
5 - 6	1.5	32.2	0.36

Depth Interval(ft)	Areas		
	BS000305	BS000306/BS000130	BS000307*
	1	2	3
3 - 4	0.009	0.009	0.11
4 - 5	16	0.009	0.18
5 - 6	1.5	32.2	0.36
Averages	5.836	10.739	0.217
Overall Average=			5.478

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

* Although sample location BS000307 is on parcel I7-2-25, it also best represents conditions in Area 3 on parcel I7-2-26.

Parcel I7-2-25
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000307-0-0030	BS000307	3 - 4	0.11	
H2-BS000307-0-0040	BS000307	4 - 5	0.18	
H2-BS000307-0-0050	BS000307	5 - 6	0.36	J
H2-BS000307-1-0050	BS000307	5 - 6	0.35	
H2-BS000138-0-0030	BS000138	3 - 3.5	0.5	U
H2-BS000138-0-0040	BS000138	4 - 4.5	0.501	U
H2-BS000308-0-0030	BS000308	3 - 4	0.019	U
H2-BS000308-0-0040	BS000308	4 - 5	0.019	U
H2-BS000308-0-0050	BS000308	5 - 6	0.026	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000307	3 - 4	0.11	
	BS000307	4 - 5	0.18	
	BS000307	5 - 6	0.36	J
	BS000307	5 - 6	0.35	
2	BS000138	3 - 3.5	0.5	U
	BS000138	4 - 4.5	0.501	U
3	BS000308	3 - 4	0.019	U
	BS000308	4 - 5	0.019	U
	BS000308	5 - 6	0.026	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000307	BS000138	BS000308
	1	2	3
3 - 4	0.11	0.5	0.019
4 - 5	0.18	0.501	0.019
5 - 6	0.355		0.026

Depth Interval(ft)	Areas		
	BS000307	BS000138	BS000308
	1	2	3
3 - 4	0.11	0.25	0.0095
4 - 5	0.18	0.2505	0.0095
5 - 6	0.355		0.026
Averages	0.215	0.250	0.015
		Overall Average=	0.160

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-24
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-RB021642-0-0020	RB021642	5.3 - 5.8	7.5	
R51AZ134(0-6)	R51AZ134	3.5 - 4	33	J
R51AZ134(12-18)	R51AZ134	4.5 - 5	12	J
R51AZ134(24-30)	R51AZ134	5.5 - 6	7.6	J
H2-BS000137-0-0030	BS000137	3 - 3.5	0.501	U
H2-BS000137-0-0040	BS000137	4 - 4.5	0.513	
H2-BS000137-0-0050	BS000137	5 - 5.5	0.405	J
H2-BS000309-0-0030	BS000309	3 - 4	0.034	
H2-BS000309-0-0040	BS000309	4 - 5	0.023	
H2-BS000309-0-0050	BS000309	5 - 6	0.017	U
H2-BS000310-0-0030	BS000310	3 - 4	0.018	U
H2-BS000310-0-0040	BS000310	4 - 5	0.018	U
H2-BS000310-0-0050	BS000310	5 - 6	0.018	U

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	R51AZ134	3.5 - 4	33	J
	R51AZ134	4.5 - 5	12	J
	R51AZ134	5.5 - 6	7.6	J
	BS000137	3 - 3.5	0.501	U
	BS000137	4 - 4.5	0.513	
	BS000137	5 - 5.5	0.405	J
2	BS000309	3 - 4	0.034	
	BS000309	4 - 5	0.023	
	BS000309	5 - 6	0.017	U
3	RB021642	5.3 - 5.8	7.5	
4	BS000310	3 - 4	0.018	U
	BS000310	4 - 5	0.018	U
	BS000310	5 - 6	0.018	U

Averaging Calculations

Depth Interval(ft)	Areas			
	BS000137/R51AZ134	BS000309	RB021642	BS000310
3 - 4	0.501/33	0.034		0.018
4 - 5	0.513/12	0.023		0.018
5 - 6	0.405/7.6	0.017	7.5	0.018

Depth Interval(ft)	Areas			
	BS000137/R51AZ134	BS000309	RB021642	BS000310
3 - 4	0.009	0.034		0.009
4 - 5	12	0.023		0.009
5 - 6	7.6	0.0085	7.5	0.009
Averages	6.536	0.022	7.500	0.009
Overall Average=				3.517

Note: Sample location R51AZ134 was added to this analysis based on its position relative to the proposed final grade (see analysis for higher riverbank Area #1). The 3 to 4 foot depth interval for this sample was removed based on the analysis completed for the higher riverbank Area #1. The PCB sample results for sample location R51AZ134 were utilized in the final averaging analysis over BS000137 due to the low concentrations found in that sample (average less than 10 ppm).

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-23
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000311-0-0030	BS000311	3 - 4	0.05	
H2-BS000311-0-0040	BS000311	4 - 5	0.017	U
H2-BS000311-0-0050	BS000311	5 - 6	0.02	
H2-BS000312-0-0030	BS000312	3 - 4	0.019	U
H2-BS000312-0-0040	BS000312	4 - 5	0.018	U
H2-BS000312-0-0050	BS000312	5 - 6	0.018	U
H2-BS000136-0-0030	BS000136	3 - 3.5	0.501	U
H2-BS000136-0-0040	BS000136	4 - 4.5	0.15	J
H2-BS000136-1-0040	BS000136	4 - 4.5	0.501	U
R75CZ140(0-6)	R75CZ140	3 - 3.5	35	J
R75CZ140(12-18)	R75CZ140	4 - 4.5	8.1	J
R75CZ140(24-30)	R75CZ140	5 - 5.5	14	J
R75CZ140(24-30)	R75CZ140	5 - 5.5	9.1	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000311	3 - 4	0.05	
	BS000311	4 - 5	0.017	U
	BS000311	5 - 6	0.02	
2	BS000312	3 - 4	0.019	U
	BS000312	4 - 5	0.018	U
	BS000312	5 - 6	0.018	U
3	BS000136	3 - 3.5	0.501	U
	BS000136	4 - 4.5	0.15	J
	BS000136	4 - 4.5	0.501	U
4	R75CZ140	3 - 3.5	35	J
	R75CZ140	4 - 4.5	8.1	J
	R75CZ140	5 - 5.5	14	J
	R75CZ140	5 - 5.5	9.1	

Averaging Calculations

Depth Interval(ft)	Areas			
	BS000311	BS000312	BS000136	R75CZ140
	1	2	3	4
3 - 4	0.05	0.019	0.501	35
4 - 5	0.017	0.018	0.15	8.1
5 - 6	0.02	0.018		11.55

Depth Interval(ft)	Areas			
	BS000311	BS000312	BS000136	R75CZ140
	1	2	3	4
3 - 4	0.05	0.0095	0.2505	0.009
4 - 5	0.0085	0.009	0.15	8.1
5 - 6	0.02	0.009		11.55
Averages	0.026	0.009	0.200	6.553
		Overall Average=		1.697

Note: Sample location R75CZ140 was added to this analysis based on its position relative to the proposed final grade (see analysis for higher riverbank Area #1). The 3 to 4 foot depth interval for this sample was removed based on the analysis completed for the higher riverbank Area #1 (i.e. a one foot excavation followed by 4 feet of backfill).

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-22
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000134-0-0030	BS000134	3 - 3.5	0.14	J
H2-BS000134-0-0040	BS000134	4 - 4.5	0.31	
H2-BS000134-0-0050	BS000134	5 - 5.5	0.477	J
H2-BS000313-0-0030	BS000313	3 - 4	0.018	U
H2-BS000313-0-0040	BS000313	4 - 5	0.017	U
H2-BS000313-0-0050	BS000313	5 - 6	0.017	U
H2-BS000314-0-0030	BS000314	3 - 4	0.019	
H2-BS000314-0-0040	BS000314	4 - 5	0.028	J
H2-BS000314-0-0050	BS000314	5 - 6	0.036	J

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000134	3 - 3.5	0.14	J
	BS000134	4 - 4.5	0.31	
	BS000134	5 - 5.5	0.477	J
2	BS000313	3 - 4	0.018	U
	BS000313	4 - 5	0.017	U
	BS000313	5 - 6	0.017	U
3	BS000314	3 - 4	0.019	
	BS000314	4 - 5	0.028	J
	BS000314	5 - 6	0.036	J

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000134	BS000313	BS000314
	1	2	3
3 - 4	0.14	0.018	0.019
4 - 5	0.31	0.017	0.028
5 - 6	0.477	0.017	0.036

Depth Interval(ft)	Areas		
	BS000134	BS000313	BS000314
	1	2	3
3 - 4	0.14	0.009	0.019
4 - 5	0.31	0.0085	0.028
5 - 6	0.477	0.0085	0.036
Averages	0.309	0.009	0.028
	Overall Average=		0.115

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging calculations.

Parcel I7-2-21
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000133-0-0030	BS000133	3 - 3.5	0.282	J
H2-BS000133-0-0040	BS000133	4 - 4.5	0.322	J
H2-BS000133-0-0050	BS000133	5 - 5.5	0.502	U
H2-BS000316-0-0030	BS000316	3 - 4	0.8	
H2-BS000316-0-0040	BS000316	4 - 5	0.23	
H2-BS000316-0-0050	BS000316	5 - 6	1.1	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000133	3 - 3.5	0.282	J
	BS000133	4 - 4.5	0.322	J
	BS000133	5 - 5.5	0.502	U
2	BS000316	3 - 4	0.8	
	BS000316	4 - 5	0.23	
	BS000316	5 - 6	1.1	

Averaging Calculations

Depth Interval(ft)	Areas	
	BS000133	BS000316
	1	2
3 - 4	0.282	0.8
4 - 5	0.322	0.23
5 - 6	0.502	1.1

Depth Interval(ft)	Areas	
	BS000133	BS000316
	1	2
3 - 4	0.282	0.8
4 - 5	0.322	0.23
5 - 6	0.251	1.1
Averages	0.285	0.710
Overall Average=		0.498

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-20
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000360-0-0030	BS000360	3 - 4	140	
H2-BS000360-0-0040	BS000360	4 - 5	460	
H2-BS000360-0-0050	BS000360	5 - 6	7.8	
H2-BS000361-0-0030	BS000361	3 - 4	32	
H2-BS000361-0-0040	BS000361	4 - 5	19	
H2-BS000361-0-0050	BS000361	5 - 6	21	
H2-BS000362-0-0030	BS000362	3 - 4	2.6	
H2-BS000362-0-0040	BS000362	4 - 5	0.097	
H2-BS000362-0-0050	BS000362	5 - 6	0.023	U
H2-BS000363-0-0030	BS000363	3 - 4	0.022	U
H2-BS000363-0-0040	BS000363	4 - 5	0.039	U
H2-BS000363-0-0050	BS000363	5 - 6	0.052	U
H2-BS000121-0-0030	BS000121	3 - 3.5	16.5	
H2-BS000121-0-0040	BS000121	4 - 4.5	5.26	
H2-BS000121-0-0050	BS000121	5 - 5.5	5.28	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000360	3 - 4	140	
	BS000360	4 - 5	460	
	BS000360	5 - 6	7.8	
2	BS000361	3 - 4	32	
	BS000361	4 - 5	19	
	BS000361	5 - 6	21	
3	BS000362	3 - 4	2.6	
	BS000362	4 - 5	0.097	
	BS000362	5 - 6	0.023	U
4	BS000363	3 - 4	0.022	U
	BS000363	4 - 5	0.039	U
	BS000363	5 - 6	0.052	U
5	BS000121	3 - 3.5	16.5	
	BS000121	4 - 4.5	5.26	
	BS000121	5 - 5.5	5.28	

Averaging Calculations

Depth Interval(ft)	Areas				
	BS000360	BS000361	BS000362	BS000363	BS000121
	1	2	3	4	5
3 - 4	140	32	2.6	0.022	16.5
4 - 5	460	19	0.097	0.039	5.26
5 - 6	7.8	21	0.023	0.052	5.28

Depth Interval(ft)	Areas				
	BS000360	BS000361	BS000362	BS000363	BS000121
	1	2	3	4	5
3 - 4	0.009	0.009	2.6	0.011	16.5
4 - 5	0.009	0.009	0.097	0.0195	5.26
5 - 6	7.8	21	0.0115	0.026	5.28
Averages	2.606	7.006	0.903	0.019	9.013
			Overall Average=		3.909

Notes: Shaded depth intervals were designated for additional excavation.

For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-2-1
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000358-0-0030	BS000358	3 - 4	21	
H2-BS000358-1-0030	BS000358	3 - 4	32	
H2-BS000358-0-0040	BS000358	4 - 5	0.12	
H2-BS000358-0-0050	BS000358	5 - 6	0.023	U
H2-BS000359-0-0030	BS000359	3 - 4	0.081	
H2-BS000359-0-0040	BS000359	4 - 5	0.021	U
H2-BS000359-0-0050	BS000359	5 - 6	0.023	U
H2-RB021842-0-0030	RB021842	3 - 3.5	1.77	J
H2-RB021842-0-0040	RB021842	4 - 4.5	4.48	J
H2-RB021842-0-0050	RB021842	5 - 5.5	7.58	J

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000358	3 - 4	21	
	BS000358	3 - 4	32	
	BS000358	4 - 5	0.12	
	BS000358	5 - 6	0.023	U
2	BS000359	3 - 4	0.081	
	BS000359	4 - 5	0.021	U
	BS000359	5 - 6	0.023	U
3	RB021842	3 - 3.5	1.77	J
	RB021842	4 - 4.5	4.48	J
	RB021842	5 - 5.5	7.58	J

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000358	BS000359	RB021842
	1	2	3
3 - 4	26.5	0.081	1.77
4 - 5	0.12	0.021	4.48
5 - 6	0.023	0.023	7.58

Depth Interval(ft)	Areas		
	BS000358	BS000359	RB021842
	1	2	3
3 - 4	26.5	0.081	1.77
4 - 5	0.12	0.0105	4.48
5 - 6	0.0115	0.0115	7.58
Averages	8.877	0.034	4.610
Overall Average=			4.507

Note: For non-detect results and for clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-3-12
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000323-0-0030	BS000323	3 - 4	0.43	
H2-BS000323-0-0040	BS000323	4 - 5	0.65	
H2-BS000323-0-0050	BS000323	5 - 6	11	
H2-BS000323-1-0050	BS000323	5 - 6	0.56	
H2-BS000324-0-0030	BS000324	3 - 4	0.11	
H2-BS000324-0-0040	BS000324	4 - 5	0.064	
H2-BS000324-0-0050	BS000324	5 - 6	0.091	
H2-BS000119-0-0030	BS000119	3 - 3.5	1.43	
H2-BS000119-0-0040	BS000119	4 - 4.5	5.95	
H2-BS000119-1-0040	BS000119	4 - 4.5	5.1	
H2-BS000119-0-0050	BS000119	5 - 5.5	5.53	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000323	3 - 4	0.43	
	BS000323	4 - 5	0.65	
	BS000323	5 - 6	11	
	BS000323	5 - 6	0.56	
2	BS000324	3 - 4	0.11	
	BS000324	4 - 5	0.064	
	BS000324	5 - 6	0.091	
3	BS000119	3 - 3.5	1.43	
	BS000119	4 - 4.5	5.95	
	BS000119	4 - 4.5	5.1	
	BS000119	5 - 5.5	5.53	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000323	BS000324	BS000119
	1	2	3
3 - 4	0.43	0.11	1.43
4 - 5	0.65	0.064	5.525
5 - 6	5.78	0.091	5.53

Depth Interval(ft)	Areas		
	BS000323	BS000324	BS000119
	1	2	3
3 - 4	0.43	0.11	1.43
4 - 5	0.65	0.064	5.525
5 - 6	5.78	0.091	5.53
Averages	2.287	0.088	4.162
	Overall Average=		2.179

Parcel I7-3-11
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000326-0-0030	BS000326	3 - 4	7	
H2-BS000118-0-0030	BS000118	3 - 3.5	3.7	
H2-BS000118-0-0040	BS000118	4 - 4.5	6.84	
H2-BS000118-0-0050	BS000118	5 - 5.5	1.41	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000326	3 - 4	7	
	BS000118	3 - 3.5	3.7	
	BS000118	4 - 4.5	6.84	
2	BS000118	5 - 5.5	1.41	

Averaging Calculations

Depth Interval(ft)	Areas	
	BS000326	BS000118
	1	2
3 - 4	7	3.7
4 - 5		6.84
5 - 6		1.41

Depth Interval(ft)	Areas	
	BS000326	BS000118
	1	2
3 - 4	7	3.7
4 - 5		6.84
5 - 6		1.41
Averages	7.000	3.983
Overall Average=		5.492

Parcel I7-3-10
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000327-0-0030	BS000327	3 - 4	34	
H2-BS000327-0-0040	BS000327	4 - 5	8.9	
H2-BS000131-0-0030	BS000131	3 - 3.5	3.15	
H2-BS000131-0-0040	BS000131	4 - 4.5	7.92	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000327	3 - 4	34	
	BS000327	4 - 5	8.9	
2	BS000131	3 - 3.5	3.15	
	BS000131	4 - 4.5	7.92	

Averaging Calculations

Depth Interval(ft)	Areas	
	BS000327	BS000131
	1	2
3 - 4	34	3.15
4 - 5	8.9	7.92
5 - 6		

Depth Interval(ft)	Areas	
	BS000327	BS000131
	1	2
3 - 4	0.009	3.15
4 - 5	8.9	7.92
5 - 6		
Averages	4.455	5.535
Overall Average=		4.995

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-3-7
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000329-0-0030	BS000329	3 - 4	1.5	
H2-BS000329-0-0040	BS000329	4 - 5	3.7	
H2-BS000329-0-0050	BS000329	5 - 6	2.4	
H2-BS000330-0-0030	BS000330	3 - 4	74	
H2-BS000330-0-0040	BS000330	4 - 5	27	
H2-BS000330-0-0050	BS000330	5 - 6	10	
H2-BS000117-0-0030	BS000117	3 - 3.5	29.7	
H2-BS000117-0-0040	BS000117	4 - 4.5	2.44	
H2-BS000117-0-0050	BS000117	5 - 5.5	1.37	
H2-BS000331-0-0030	BS000331	3 - 4	450	
H2-BS000331-0-0040	BS000331	4 - 5	270	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000329	3 - 4	1.5	
	BS000329	4 - 5	3.7	
	BS000329	5 - 6	2.4	
2	BS000330	3 - 4	74	
	BS000330	4 - 5	27	
	BS000330	5 - 6	10	
3	BS000117	3 - 3.5	29.7	
	BS000117	4 - 4.5	2.44	
	BS000117	5 - 5.5	1.37	
4	BS000331	3 - 4	450	
	BS000331	4 - 5	270	

Averaging Calculations

Depth Interval(ft)	Areas			
	BS000329	BS000330	BS000117	BS000331
	1	2	3	4
3 - 4	1.5	74	29.7	450
4 - 5	3.7	27	2.44	270
5 - 6	2.4	10	1.37	

Depth Interval(ft)	Areas			
	BS000329	BS000330	BS000117	BS000331
1	2	3	4	
3 - 4	1.5	0.009	0.009	0.009
4 - 5	3.7	0.009	0.009	0.009
5 - 6	2.4	10	1.37	0.009
Averages	2.533	3.339	0.463	0.009
Overall Average=				1.586

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis

Parcel I7-3-6
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000116-0-0030	BS000116	3 - 3.5	55.9	
H2-BS000116-1-0030	BS000116	3 - 3.5	83.1	
H2-BS000116-0-0040	BS000116	4 - 4.5	18.6	
H2-BS000116-0-0050	BS000116	5 - 5.5	62.4	
H2-BS000332-0-0030	BS000332	3 - 4	46	
H2-BS000332-0-0040	BS000332	4 - 5	100	J
H2-BS000332-0-0050	BS000332	5 - 6	220	
H2-BS000332-1-0050	BS000332	5 - 6	340	J
H2-BS000333-0-0030	BS000333	3 - 4	840	
H2-BS000333-0-0040	BS000333	4 - 5	650	
H2-BS000333-0-0050	BS000333	5 - 6	73	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000116	3 - 3.5	55.9	
	BS000116	3 - 3.5	83.1	
	BS000116	4 - 4.5	18.6	
	BS000116	5 - 5.5	62.4	
2	BS000332	3 - 4	46	
	BS000332	4 - 5	100	J
	BS000332	5 - 6	220	
	BS000332	5 - 6	340	J
3	BS000333	3 - 4	840	
	BS000333	4 - 5	650	
	BS000333	5 - 6	73	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000116	BS000332	BS000333
	1	2	3
3 - 4	69.5	46	840
4 - 5	18.6	100	650
5 - 6	62.4	280	73

Depth Interval(ft)	Areas		
	BS000116	BS000332	BS000333
	1	2	3
3 - 4	0.009	0.009	0.009
4 - 5	0.009	0.009	0.009
5 - 6	0.009	0.009	0.009
Averages	0.009	0.009	0.009
Overall Average=		0.009	

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-3-5
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000334-0-0030	BS000334	3 - 4	40	
H2-BS000334-0-0040	BS000334	4 - 5	2.4	
H2-BS000334-0-0050	BS000334	5 - 6	7.3	
H2-BS000115-0-0030	BS000115	3 - 3.5	58.6	
H2-BS000115-0-0040	BS000115	4 - 4.5	32.3	
H2-BS000115-0-0050	BS000115	5 - 5.5	4.38	
H2-BS000335-0-0030	BS000335	3 - 4	30	
H2-BS000335-0-0040	BS000335	4 - 5	28	
H2-BS000335-0-0050	BS000335	5 - 6	15	
H2-BS000336-0-0030	BS000336	3 - 4	40	
H2-BS000336-0-0040	BS000336	4 - 5	2.6	
H2-BS000336-0-0050	BS000336	5 - 6	11	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000334	3 - 4	40	
	BS000334	4 - 5	2.4	
	BS000334	5 - 6	7.3	
2	BS000115	3 - 3.5	58.6	
	BS000115	4 - 4.5	32.3	
	BS000115	5 - 5.5	4.38	
3	BS000335	3 - 4	30	
	BS000335	4 - 5	28	
	BS000335	5 - 6	15	
4	BS000336	3 - 4	40	
	BS000336	4 - 5	2.6	
	BS000336	5 - 6	11	

Averaging Calculations

Depth Interval(ft)	Areas			
	BS000334	BS000115	BS000335	BS000336
	1	2	3	4
3 - 4	40	58.6	30	40
4 - 5	2.4	32.3	28	2.6
5 - 6	7.3	4.38	15	11

Depth Interval(ft)	Areas			
	BS000334	BS000115	BS000335	BS000336
	1	2	3	4
3 - 4	0.009	0.009	0.009	0.009
4 - 5	2.4	0.009	0.009	2.6
5 - 6	7.3	4.38	15	11
Averages	3.236	1.466	5.006	4.536
	Overall Average=			3.561

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-3-4
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000340-0-0030	BS000340	3 - 4	1.3	
H2-BS000340-0-0040	BS000340	4 - 5	28	
H2-BS000314-0-0030	BS000114	3 - 3.5	0.768	
H2-BS000314-0-0040	BS000114	4 - 4.5	2.4	
H2-BS000314-0-0050	BS000114	5 - 5.5	7.18	
I7-3-4-SB-6	I7-3-4-SB-6	3 - 3.5	49.3	
I7-3-4-SB-6	I7-3-4-SB-6	3.5 - 4	83.9	
I7-3-4-SB-6	I7-3-4-SB-6	4 - 4.5	20.3	
I7-3-4-SB-6	I7-3-4-SB-6	4.5 - 5	266	
I7-3-4-SB-6	I7-3-4-SB-6	5- 5.5	222	
I7-3-4-SB-6	I7-3-4-SB-6	5.5 - 6	159	
I7-3-4-SB-6	I7-3-4-SB-6	6 - 6.5	91.8	
I7-3-4-SB-6	I7-3-4-SB-6	6.5 - 7	137	
I7-3-4-SB-6	I7-3-4-SB-6	7- 7.5	84.7	
I7-3-4-SB-6	I7-3-4-SB-6	7.5 - 8	1.17	
I7-3-4-SB-7	I7-3-4-SB-7	3 - 3.5	365	
I7-3-4-SB-7	I7-3-4-SB-7	3.5 - 4	27.9	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000340	3 - 4	1.3	
	BS000340	4 - 5	28	
2	BS000114	3 - 3.5	0.768	
	BS000114	4 - 4.5	2.4	
3	BS000114	5 - 5.5	7.18	
	I7-3-4-SB-6	3 - 3.5	49.3	
	I7-3-4-SB-6	3.5 - 4	83.9	
	I7-3-4-SB-6	4 - 4.5	20.3	
	I7-3-4-SB-6	4.5 - 5	266	
	I7-3-4-SB-6	5- 5.5	222	
	I7-3-4-SB-6	5.5 - 6	159	
	I7-3-4-SB-6	6 - 6.5	91.8	
	I7-3-4-SB-6	6.5 - 7	137	
	I7-3-4-SB-6	7- 7.5	84.7	
	I7-3-4-SB-6	7.5 - 8	1.17	
	I7-3-4-SB-7	3 - 3.5	365	
4	I7-3-4-SB-7	3.5 - 4	27.9	

Parcel I7-3-4
Averaging Analysis

Averaging Calculations

Depth Interval(ft)	Areas			
	BS000340	BS000114	I7-3-4-SB-6	I7-3-4-SB-7
	1	2	3	4
3 - 4	1.3			
3 - 3.5		0.768	49.3	365
3.5 - 4			83.9	27.9
4 - 5	28			
4 - 4.5		2.4	20.3	
4.5 - 5			266	
5 - 5.5		7.18	222	
5.5 - 6			159	
6 - 6.5			91.8	
6.5 - 7			137	
7- 7.5			84.7	
7.5 - 8			1.17	

Depth Interval(ft)	Areas			
	BS000340	BS000114	I7-3-4-SB-6	I7-3-4-SB-7
	1	2	3	4
3 - 4	1.3			
3 - 3.5		0.768	0.009	0.009
3.5 - 4			0.009	0.009
4 - 5	28			
4 - 4.5		2.4	0.009	
4.5 - 5			0.009	
5 - 5.5		7.18	0.009	
5.5 - 6			0.009	
6 - 6.5			0.009	
6.5 - 7			0.009	
7- 7.5			0.009	
7.5 - 8			0.009	
Averages	14.650	3.449	0.009	0.009
		Overall Average=		4.529

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-3-3
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
R65BZ108(0-6)	R65BZ108	3 - 3.5	12	
R65BZ108(12-18)	R65BZ108	4 - 4.5	7.8	J
R65BZ108(24-30)	R65BZ108	5 - 5.5	21	J
H2-BS000341-0-0030	BS000341	3 - 4	.4	
H2-BS000341-0-0040	BS000341	4 - 5	.018	U
H2-BS000341-0-0050	BS000341	5 - 6	.018	U
H2-BS000113-0-0030	BS000113	3 - 3.5	0.544	J
H2-BS000113-1-0030	BS000113	3 - 3.5	0.502	U
H2-BS000113-0-0040	BS000113	4 - 4.5	15.5	
H2-BS000113-0-0050	BS000113	5 - 5.5	42.5	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000341	3 - 4	.4	
	BS000341	4 - 5	.018	U
	BS000341	5 - 6	.018	U
2	BS000113	3 - 3.5	0.544	J
	BS000113	3 - 3.5	0.502	U
	BS000113	4 - 4.5	15.5	
	BS000113	5 - 5.5	42.5	
3	R65BZ108	3 - 3.5	12	
	R65BZ108	4 - 4.5	7.8	J
	R65BZ108	5 - 5.5	21	J

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000341	BS000113	R65BZ108
	1	2	3
3 - 4	.4	0.544	12
4 - 5	.018	15.5	7.8
5 - 6	.018	42.5	21

Depth Interval(ft)	Areas		
	BS000341	BS000113	R65BZ108
	1	2	3
3 - 4	0.4	0.544	0.009
4 - 5	0.009	15.5	7.8
5 - 6	0.009	42.5	21
Averages	0.139	19.515	9.603
	Overall Average=		9.752

Note: Sample location R65BZ108 was added to this analysis based on its position relative to the proposed final grade (see analysis for higher riverbank Area #2). The 3 to 4 foot depth interval for this sample was removed based on the analysis completed for the higher riverbank Area #2.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-3-2
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000342-0-0030	BS000342	3 - 4	.018	U
H2-BS000342-0-0040	BS000342	4 - 5	.023	U
R64CZ142 (12-18)	R64CZ142	4 - 5	13	
R64CZ142 (12-18)	R64CZ142	4 - 5	18	
R64CZ142 (24-30)	R64CZ142	5 - 6	12	
R64CZ142 (12-18)	R64CZ142	5 - 6	15	
H2-BS000112-0-0030	BS000112	3 - 3.5	20.2	
H2-BS000112-0-0040	BS000112	4 - 4.5	0.991	
H2-BS000112-0-0050	BS000112	5 - 5.5	2.18	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000342	3 - 4	.018	U
	BS000342	4 - 5	.023	U
2	R64CZ142	4 - 5	15.5	
	R64CZ142	5 - 6	13.5	
3	BS000112	3 - 3.5	20.2	
	BS000112	4 - 4.5	0.991	
	BS000112	5 - 5.5	2.18	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000342	R64CZ142	BS000112
	1	2	2
3 - 4	.018		20.2
4 - 5	.023	15.5	0.991
5 - 6		13.5	2.18

Depth Interval(ft)	Areas		
	BS000342	R64CZ142	BS000112
	1	2	2
3 - 4	0.009		20.2
4 - 5	0.0115	15.5	0.991
5 - 6		13.5	2.18
Averages	0.010	14.500	7.790
Overall Average=			7.434

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-99-000
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000343-0-0030	BS000343	3 - 4	380	
H2-BS000343-0-0040	BS000343	4 - 5	260	
H2-BS000343-0-0050	BS000343	5 - 6	14	
H2-BS000344-0-0030	BS000344	3 - 4	.034	
H2-BS000344-0-0040	BS000344	4 - 5	.053	
H2-BS000344-0-0050	BS000344	5 - 6	.026	U
H2-BS000111-0-0030	BS000111	3 - 3.5	54.8	
H2-BS000111-0-0040	BS000111	4 - 4.5	33.4	
H2-BS000111-0-0040	BS000111	5 - 5.5	20.6	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000343	3 - 4	380	
	BS000343	4 - 5	260	
	BS000343	5 - 6	14	
2	BS000344	3 - 4	.034	
	BS000344	4 - 5	.053	
	BS000344	5 - 6	.026	U
3	BS000111	3 - 3.5	54.8	
	BS000111	4 - 4.5	33.4	
	BS000111	5 - 5.5	20.6	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000343	BS000344	BS000111
	1	2	3
3 - 4	380	.034	54.8
4 - 5	260	.053	33.4
5 - 6	14	0.013	20.6

Depth Interval(ft)	Areas		
	BS000343	BS000344	BS000111
	1	2	3
3 - 4	0.009	0.034	0.009
4 - 5	0.009	0.053	0.009
5 - 6	14	0.013	20.6
Averages	4.673	0.033	6.873
		Overall Average=	3.860

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I7-3-1
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000345-0-0030	BS000345	3 - 4	.96	
H2-BS000345-0-0040	BS000345	4 - 5	.022	U
H2-BS000345-0-0050	BS000345	5 - 6	.022	U
H2-BS000346-0-0030	BS000346	3 - 4	15	
H2-BS000346-0-0040	BS000346	4 - 5	.61	
H2-BS000346-0-0050	BS000346	5 - 6	.064	
H2-BS000110-0-0030	BS000110	3 - 3.5	53.4	
H2-BS000110-0-0040	BS000110	4 - 4.5	7.86	
H2-BS000110-0-0040	BS000110	5 - 5.5	13	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000345	3 - 4	.96	
	BS000345	4 - 5	.022	U
	BS000345	5 - 6	.022	U
2	BS000346	3 - 4	15	
	BS000346	4 - 5	.61	
	BS000346	5 - 6	.064	
3	BS000110	3 - 3.5	53.4	
	BS000110	4 - 4.5	7.86	
	BS000110	5 - 5.5	13	

Averaging Calculations

Depth Interval(ft)	Areas		
	BS000345	BS000346	BS000110
3 - 4	.96	15	53.4
4 - 5	.022	.61	7.86
5 - 6	.022	.064	13

Depth Interval(ft)	Areas		
	BS000345	BS000346	BS000110
3 - 4	0.96	15	0.009
4 - 5	0.011	0.61	7.86
5 - 6	0.011	0.064	13
Averages	0.327	5.225	6.956
		Overall Average=	4.169

Note: Shaded depth intervals were designated for additional excavation.

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I6-1-69
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000347-0-0030	BS000347	3 - 4	0.085	
H2-BS000347-1-0030	BS000347	3 - 4	0.056	
H2-BS000347-0-0040	BS000347	4 - 5	0.99	
H2-BS000347-1-0040	BS000347	4 - 5	1	
H2-BS000347-0-0050	BS000347	5 - 6	0.27	
H2-BS000109-0-0030	BS000109	3 - 3.5	2.64	
H2-BS000109-1-0030	BS000109	3 - 3.5	2.59	
H2-BS000109-0-0040	BS000109	4 - 4.5	1.05	
H2-BS000109-0-0050	BS000109	5 - 5.5	1.4	

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000347	3 - 4	0.085	
	BS000347	3 - 4	0.056	
	BS000347	4 - 5	0.99	
	BS000347	4 - 5	1	
	BS000347	5 - 6	0.27	
	BS000109	3 - 3.5	2.64	
2	BS000109	3 - 3.5	2.59	
	BS000109	4 - 4.5	1.05	
	BS000109	5 - 5.5	1.4	

Averaging Calculations

Depth Interval(ft)	Areas	
	BS000347	BS000109
3 - 4	0.0705	2.615
4 - 5	0.995	1.05
5 - 6	0.27	1.4

Depth Interval(ft)	Areas	
	BS000347	BS000109
3 - 4	0.0705	2.615
4 - 5	0.995	1.05
5 - 6	0.27	1.4
Averages	0.445	1.688
Overall Average=		1.067

Parcel I6-1-68
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000348-0-0030	BS000348	3 - 4	0.02	
H2-BS000348-0-0040	BS000348	4 - 5	0.022	
H2-BS000348-1-0040	BS000348	4 - 5	0.028	
H2-BS000348-0-0050	BS000348	5 - 6	0.024	
H2-BS000348-1-0050	BS000348	5 - 6	0.023	
H2-BS000108-0-0030	BS000108	3 - 3.5	0.021	
H2-BS000108-1-0030	BS000108	3 - 3.5	0.501	U
H2-BS000108-0-0040	BS000108	4 - 4.5	0.382	J

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000348	3 - 4	0.02	
	BS000348	4 - 5	0.022	
	BS000348	4 - 5	0.028	
	BS000348	5 - 6	0.024	
	BS000348	5 - 6	0.023	
2	BS000108	3 - 3.5	0.021	
	BS000108	3 - 3.5	0.501	U
	BS000108	4 - 4.5	0.382	J

Averaging Calculations

Depth Interval(ft)	Areas	
	BS000348	BS000108
3 - 4	0.02	0.021
4 - 5	0.025	0.382
5 - 6	0.0235	

Depth Interval(ft)	Areas	
	BS000348	BS000108
3 - 4	0.02	0.021
4 - 5	0.025	0.382
5 - 6	0.0235	
Averages	0.023	0.202
Overall Average=		0.112

Note: For non-detect results and clean backfill, half the detection limit was used in the averaging analysis.

Parcel I6-1-67
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000351-0-0030	BS000351	3 - 4	2.8	
H2-BS000351-0-0040	BS000351	4 - 5	0.14	
H2-BS000351-0-0050	BS000351	5 - 6	0.094	
H2-RB021925-0-0030	RB021925	3 - 3.5	20.9	
H2-RB021925-0-0040	RB021925	4 - 4.5	4.7	
H2-RB021925-0-0050	RB021925	5 - 5.5	5.72	J
H2-RB021945-0-0030	RB021945	3 - 3.5	6.43	
H2-RB021945-0-0040	RB021945	4 - 4.5	20	
H2-RB021945-0-0050	RB021945	5 - 5.5	28.8	J

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000351	3 - 4	2.8	
	BS000351	4 - 5	0.14	
	BS000351	5 - 6	0.094	
2	RB021925	3 - 3.5	20.9	
	RB021925	4 - 4.5	4.7	
	RB021925	5 - 5.5	5.72	J
3	RB021945	3 - 3.5	6.43	
	RB021945	4 - 4.5	20	
	RB021945	5 - 5.5	28.8	J

Averaging Calculations

Depth Interval(ft)	Areas		
	BS0003151	RB021925	RB021945
	1	2	3
3 - 4	2.8	20.9	6.43
4 - 5	0.14	4.7	20
5 - 6	0.094	5.72	28.8

Depth Interval(ft)	Areas		
	BS0003151	RB021925	RB021945
	1	2	3
3 - 4	2.8	20.9	6.43
4 - 5	0.14	4.7	20
5 - 6	0.094	5.72	28.8
Averages	1.011	10.440	18.410
	Overall Average=		9.954

Parcel I6-1-66
Averaging Analysis

All Data				
FIELD_SAMPLE_ID	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
H2-BS000352-0-0030	BS000352	3 - 4	20	
H2-BS000352-0-0040	BS000352	4 - 5	0.022	U
H2-BS000352-0-0050	BS000352	5 - 6	0.095	
H2-RB021965-0-0030	RB021965	3 - 3.5	81.4	J
H2-RB021965-0-0040	RB021965	4 - 4.5	5.6	
H2-RB021965-0-0050	RB021965	5 - 5.5	1.23	J

Data By Area				
Area	LOCATION_ID	DEPTH_INTERVAL	NUM_RES	RESULT_FLAG
1	BS000352	3 - 4	20	
	BS000352	4 - 5	0.022	U
	BS000352	5 - 6	0.095	
2	RB021965	3 - 3.5	81.4	J
	RB021965	4 - 4.5	5.6	
	RB021965	5 - 5.5	1.23	J

Averaging Calculations

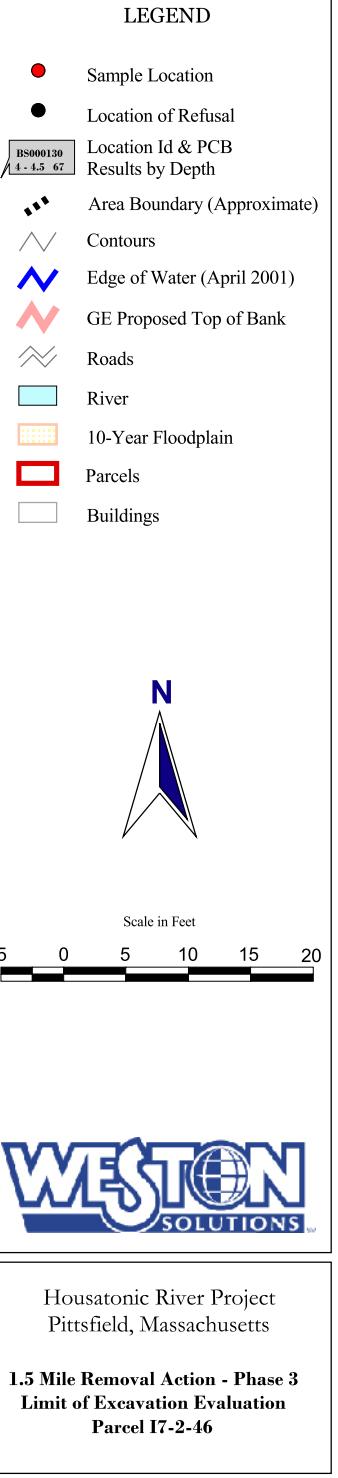
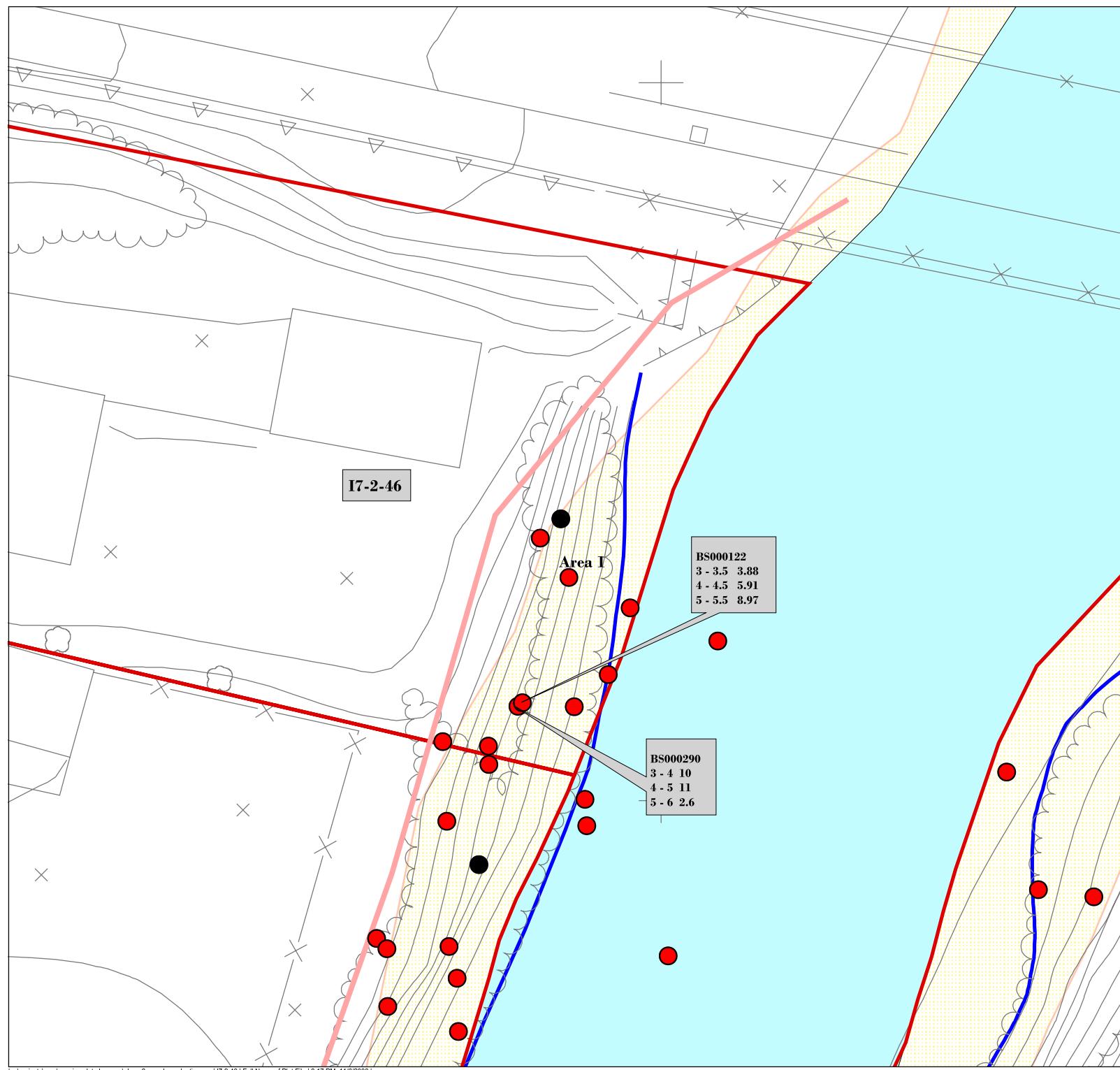
Depth Interval(ft)	Areas	
	BS000352	RB021965
3 - 4	20	81.4
4 - 5	0.011	5.6
5 - 6	0.095	1.23

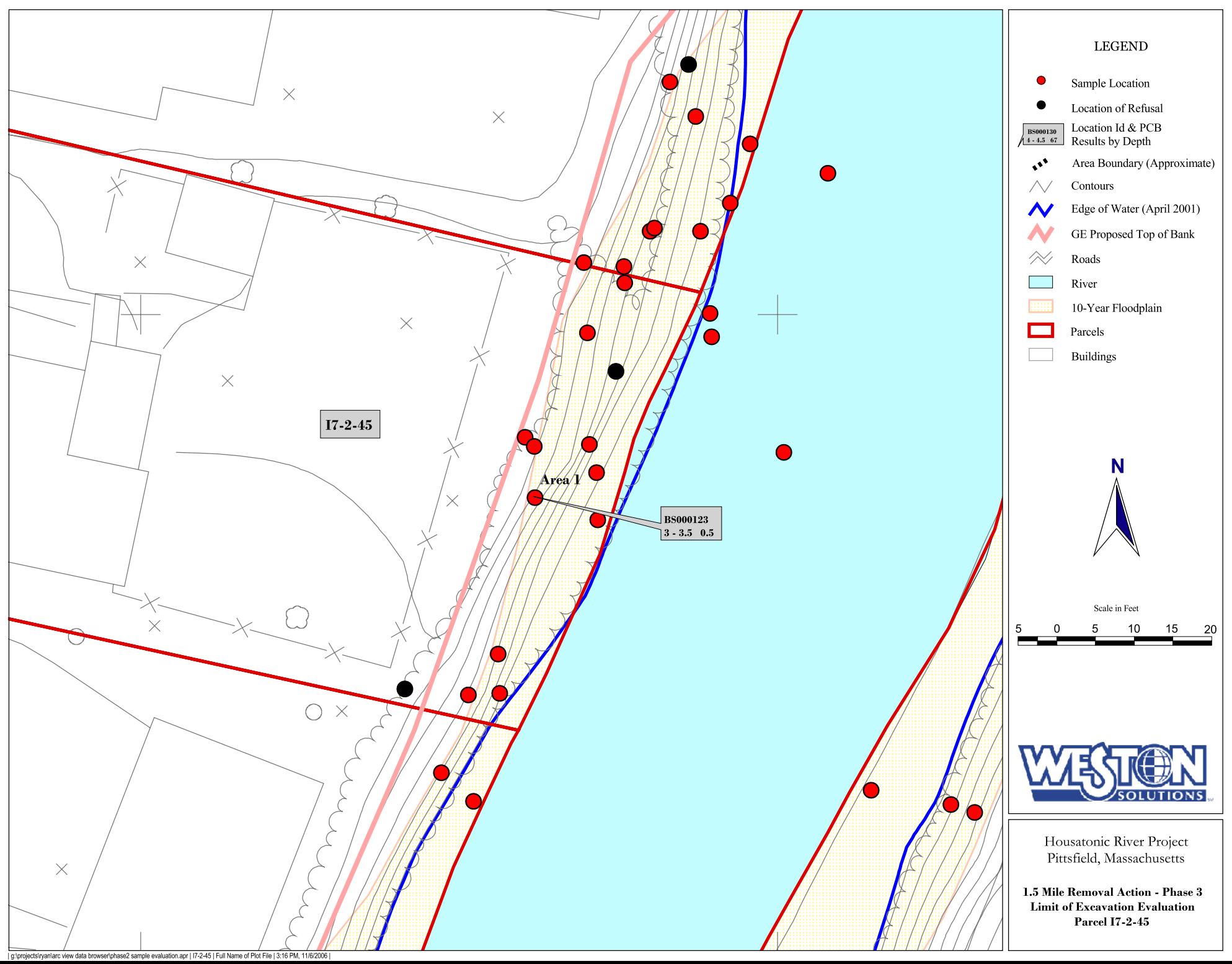
Depth Interval(ft)	Areas	
	BS000352	RB021965
3 - 4	0.009	0.009
4 - 5	0.011	5.6
5 - 6	0.095	1.23
Averages	0.038	2.280
Overall Average=		1.159

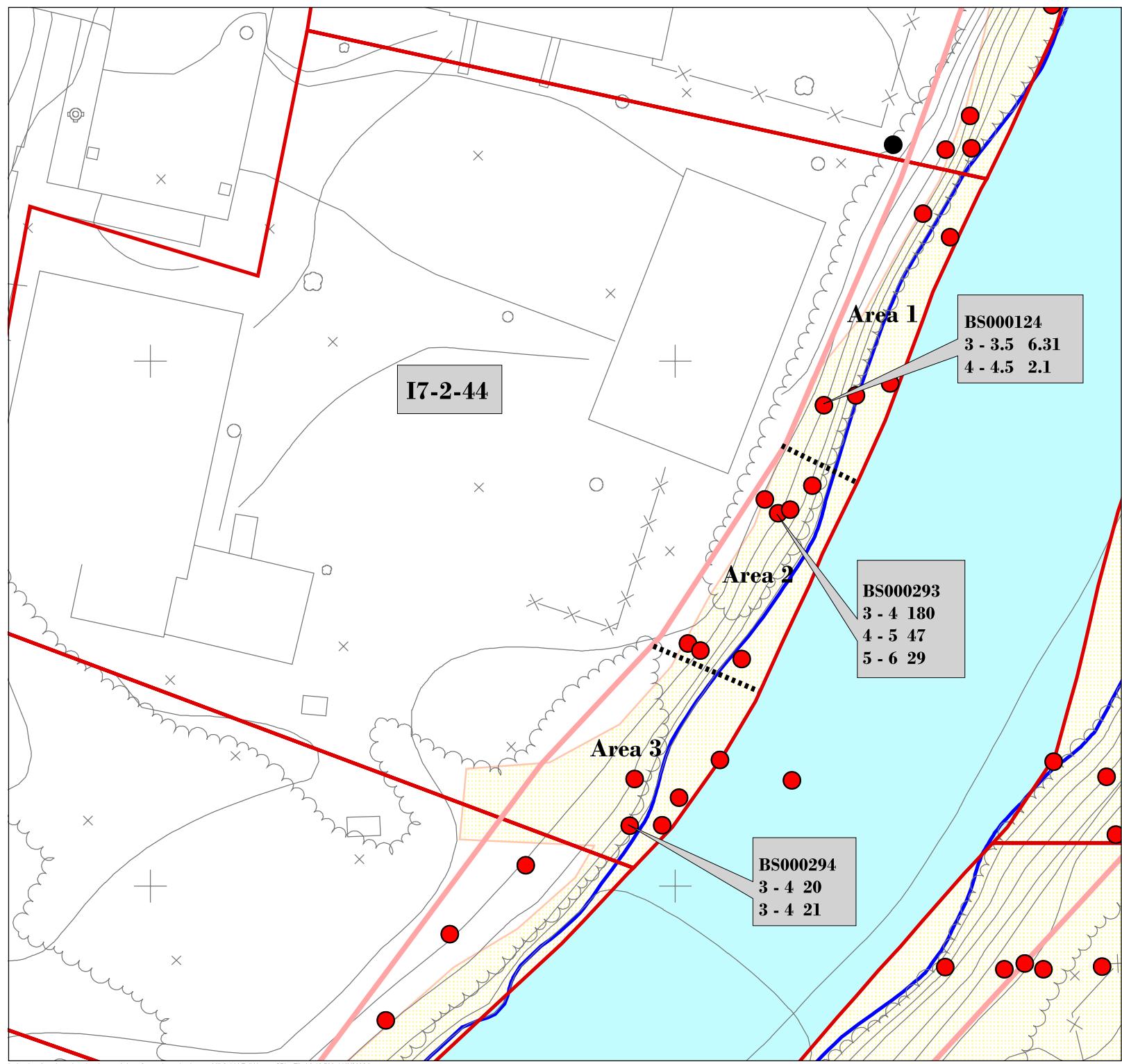
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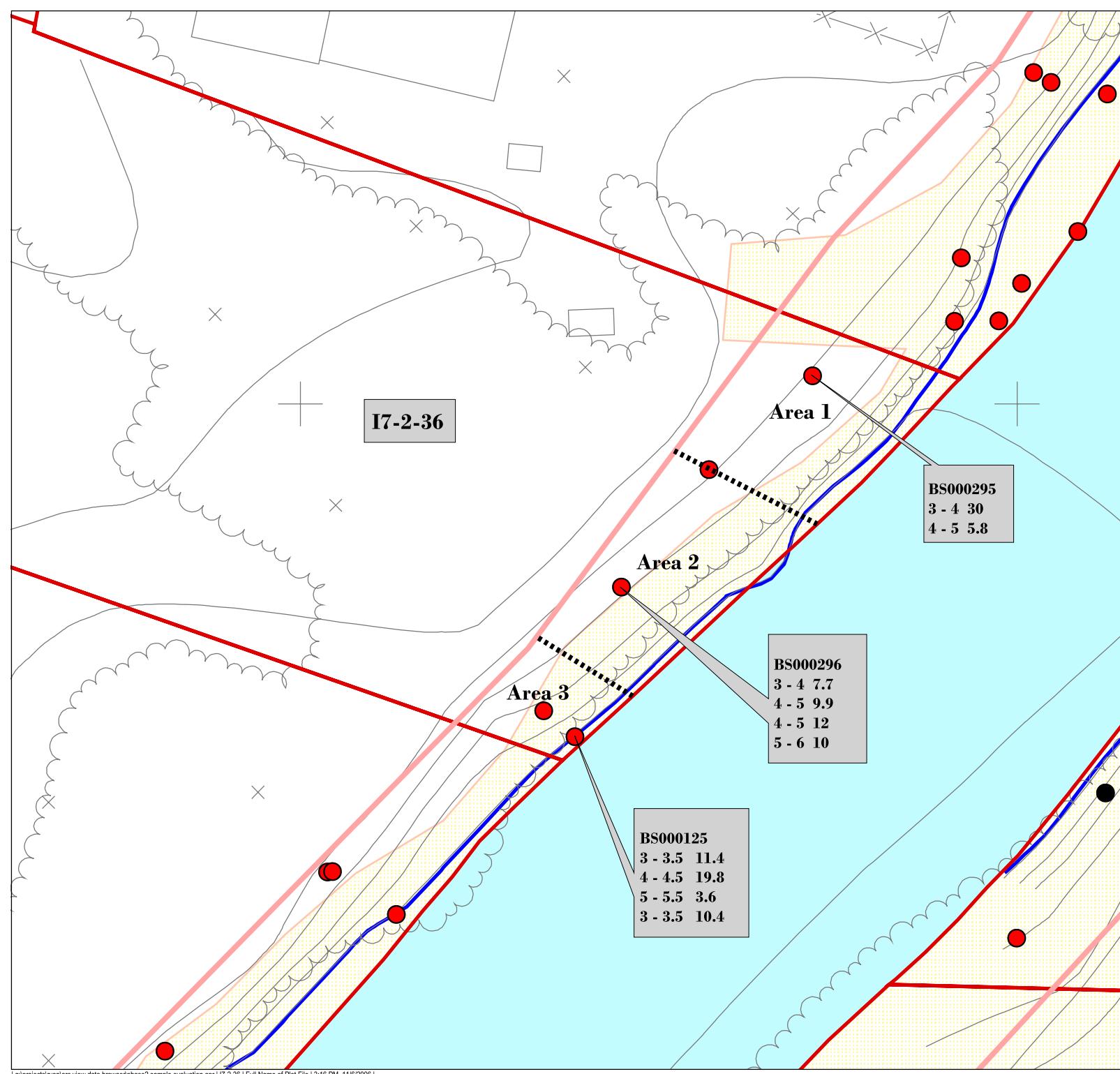
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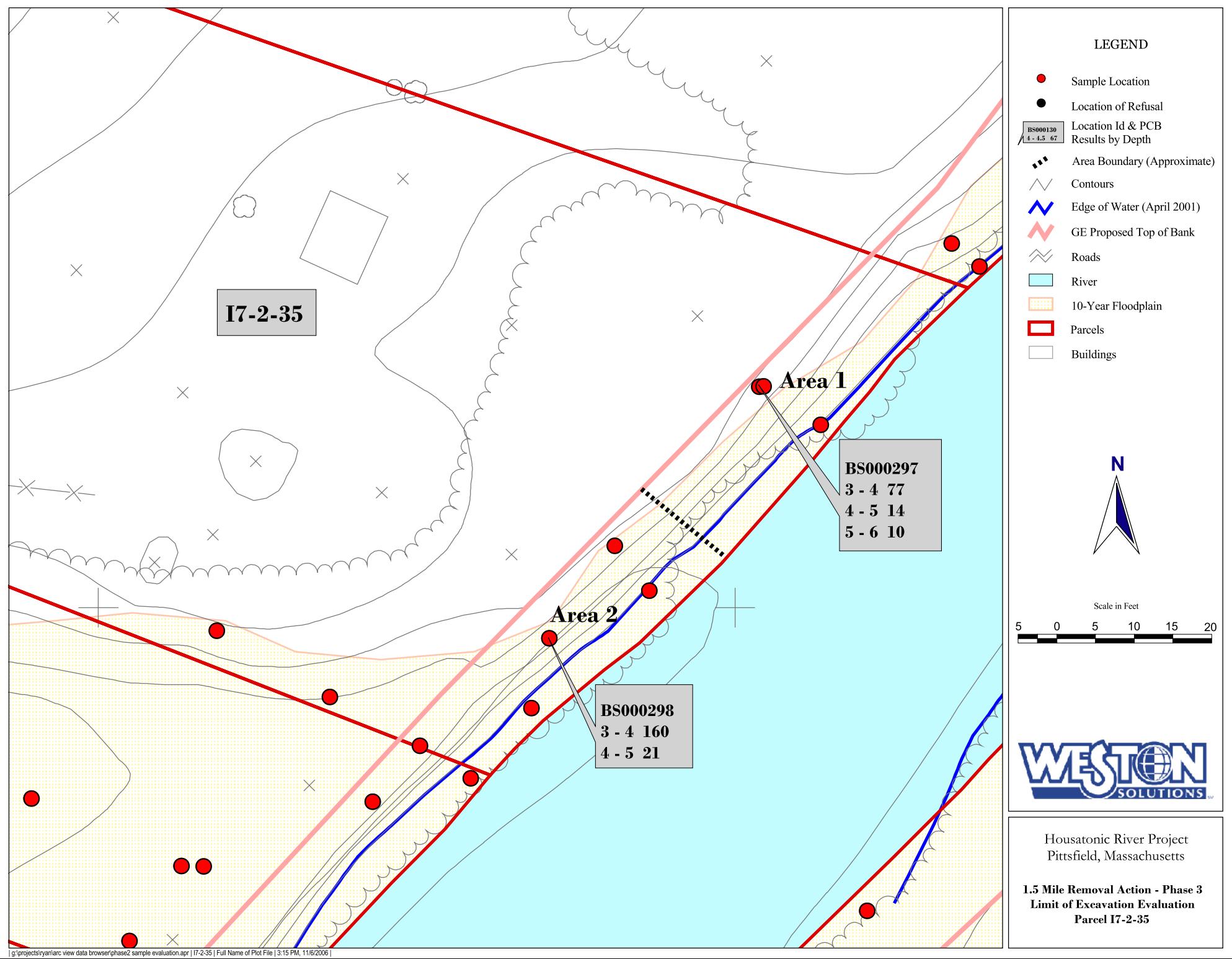
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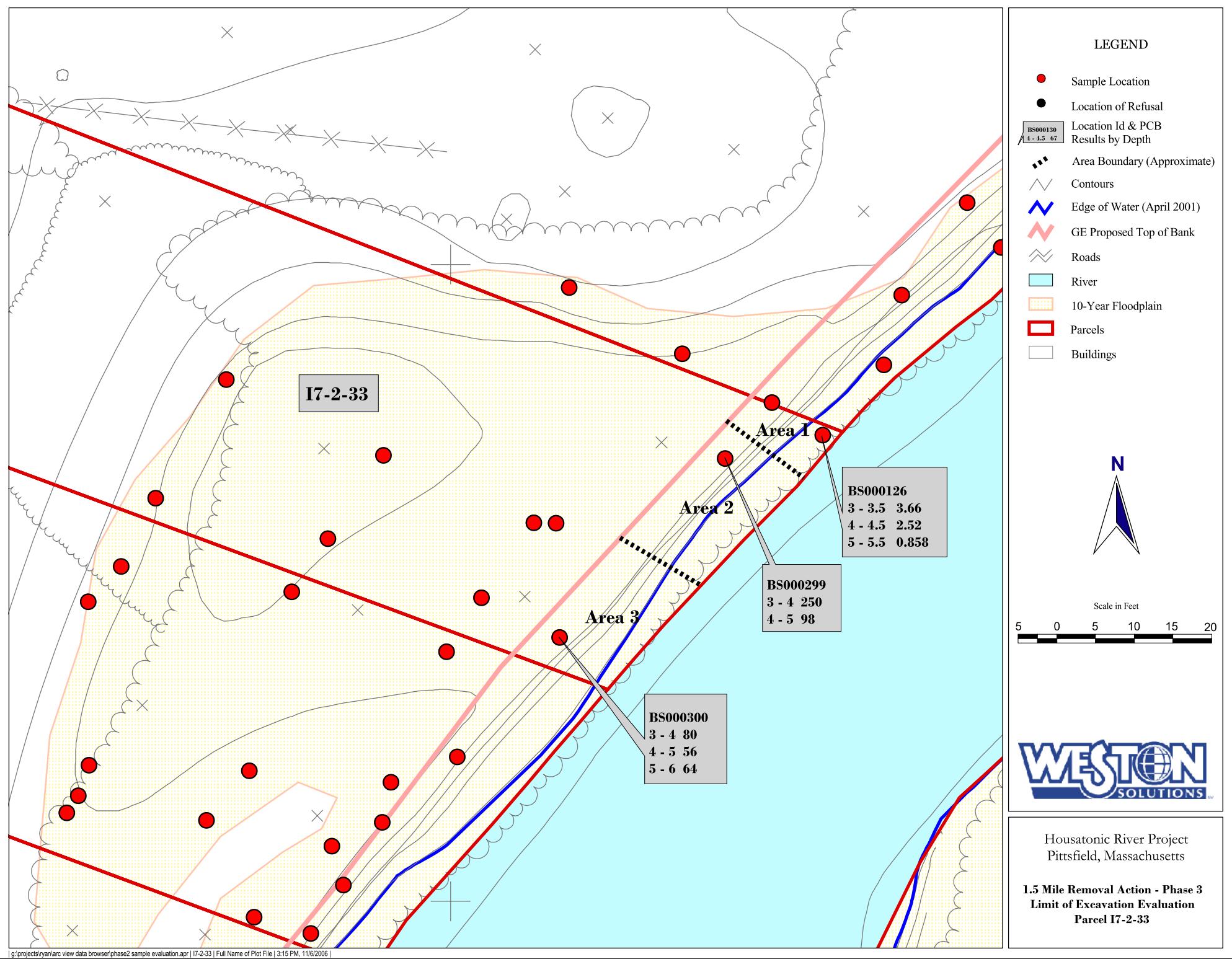


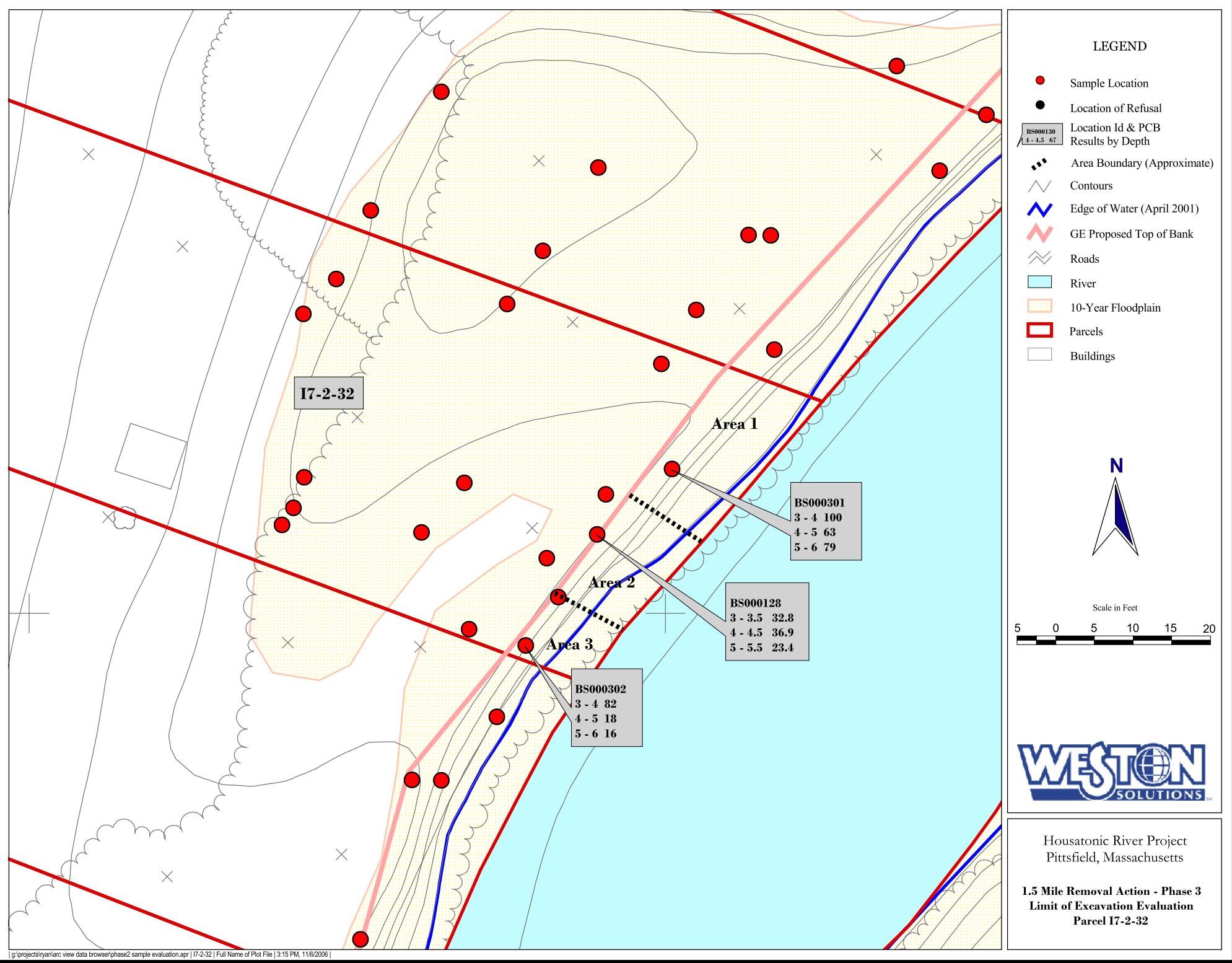


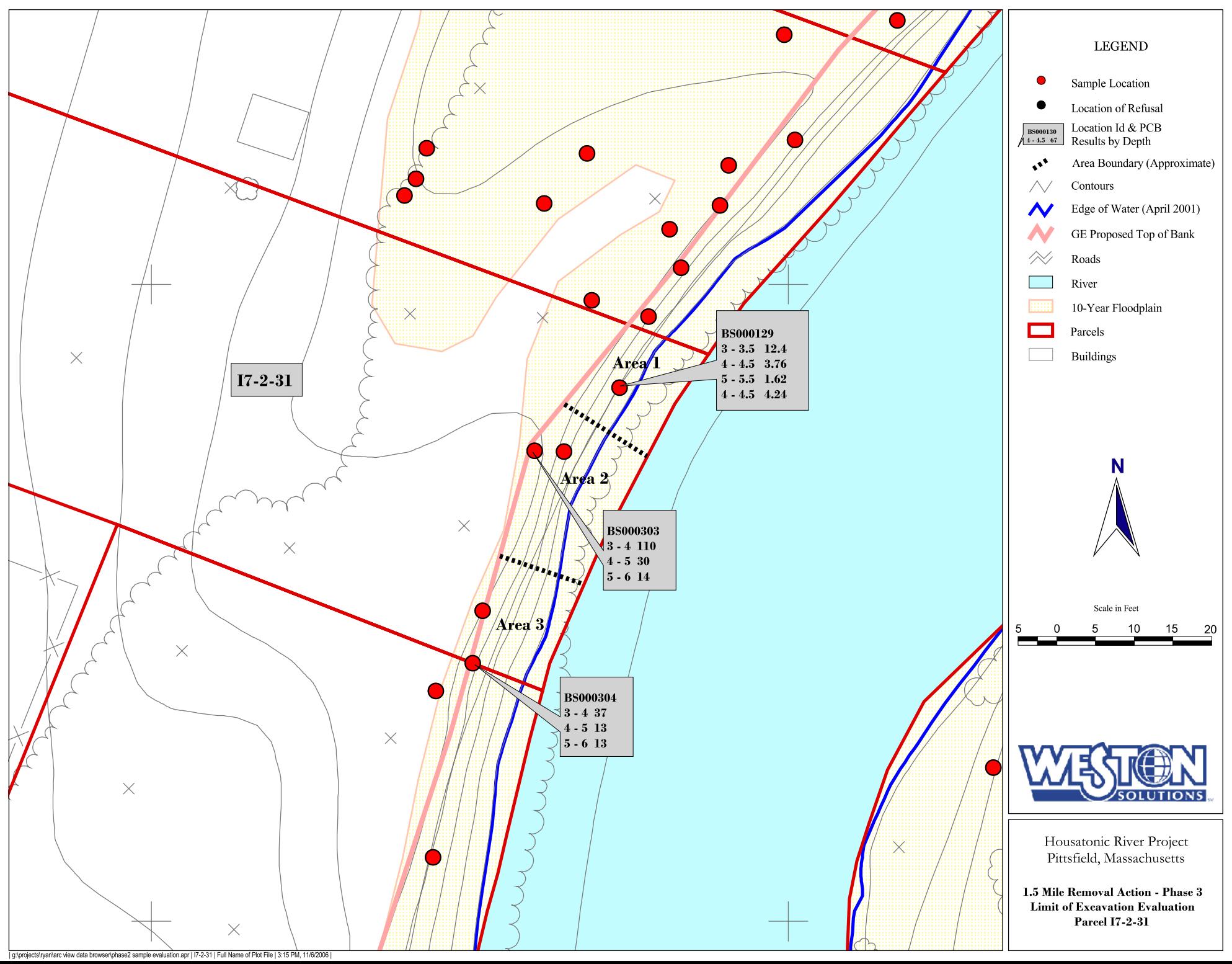


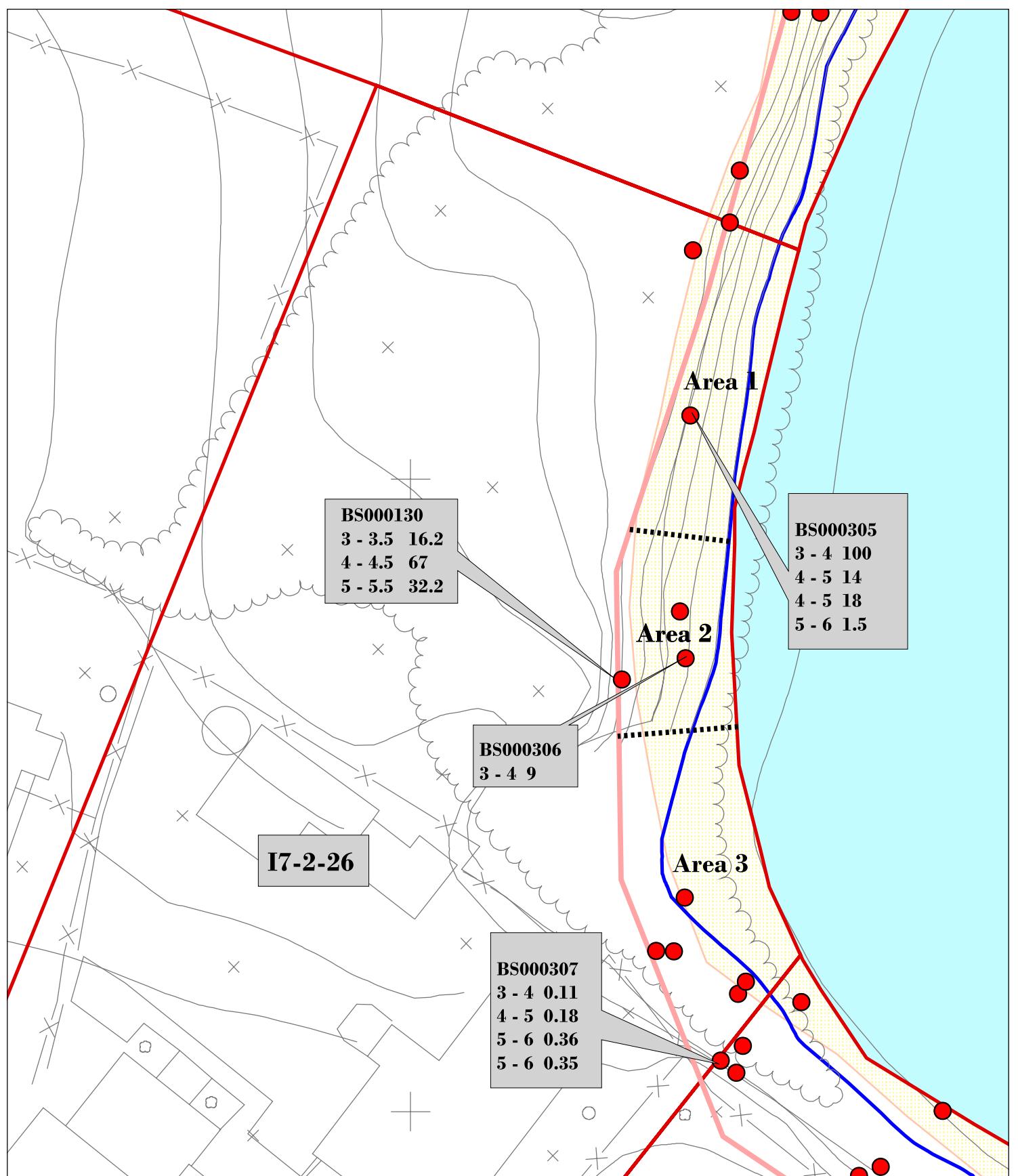












LEGEND

- Sample Location
- Location of Refusal
- Location Id & PCB Results by Depth
BS000130 4 - 4.5 67
- Area Boundary (Approximate)

Contours

River

Edge of Water (April 2001)

10-Year Floodplain

GE Proposed Top of Bank

Parcels

Roads

Buildings

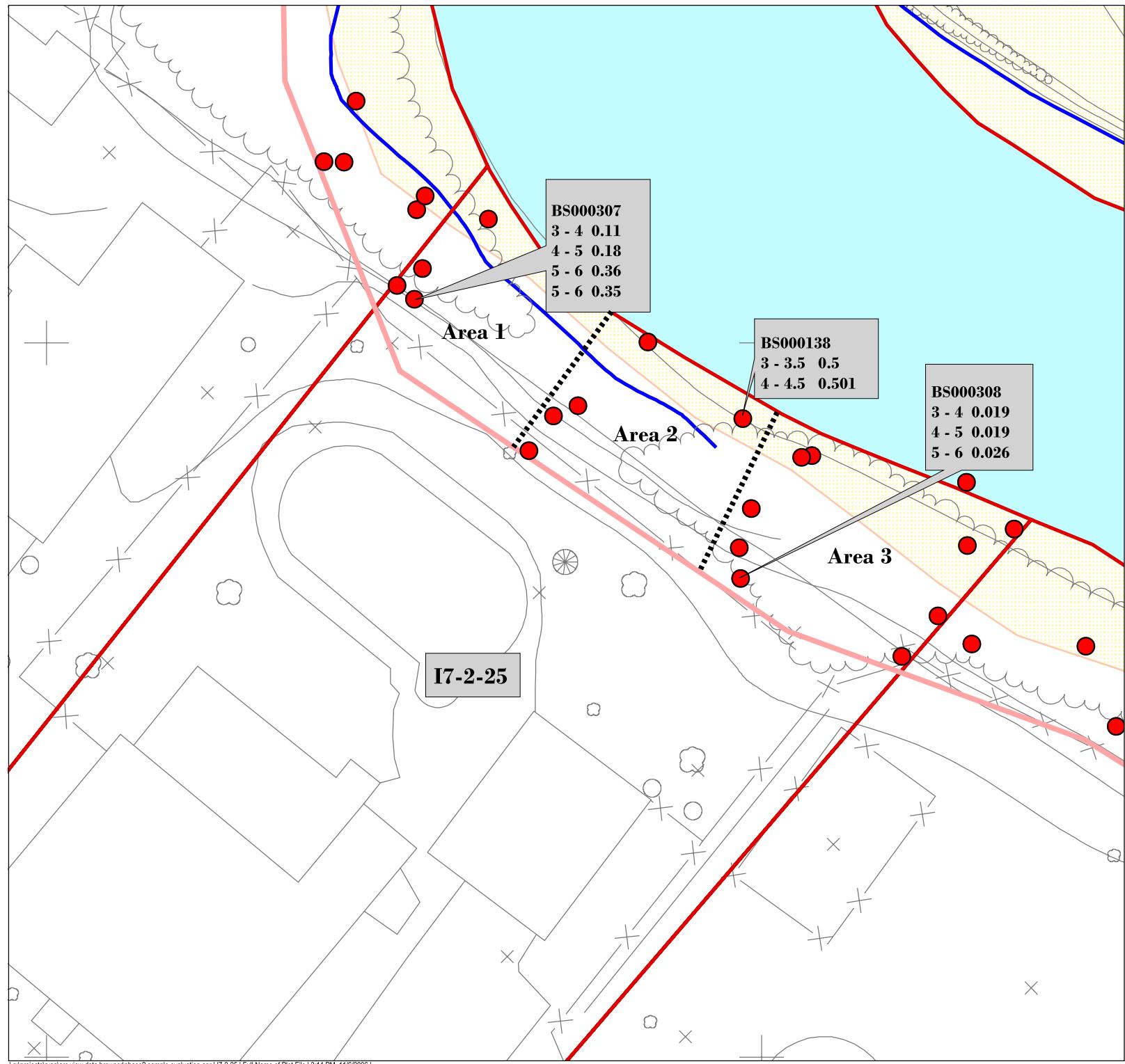


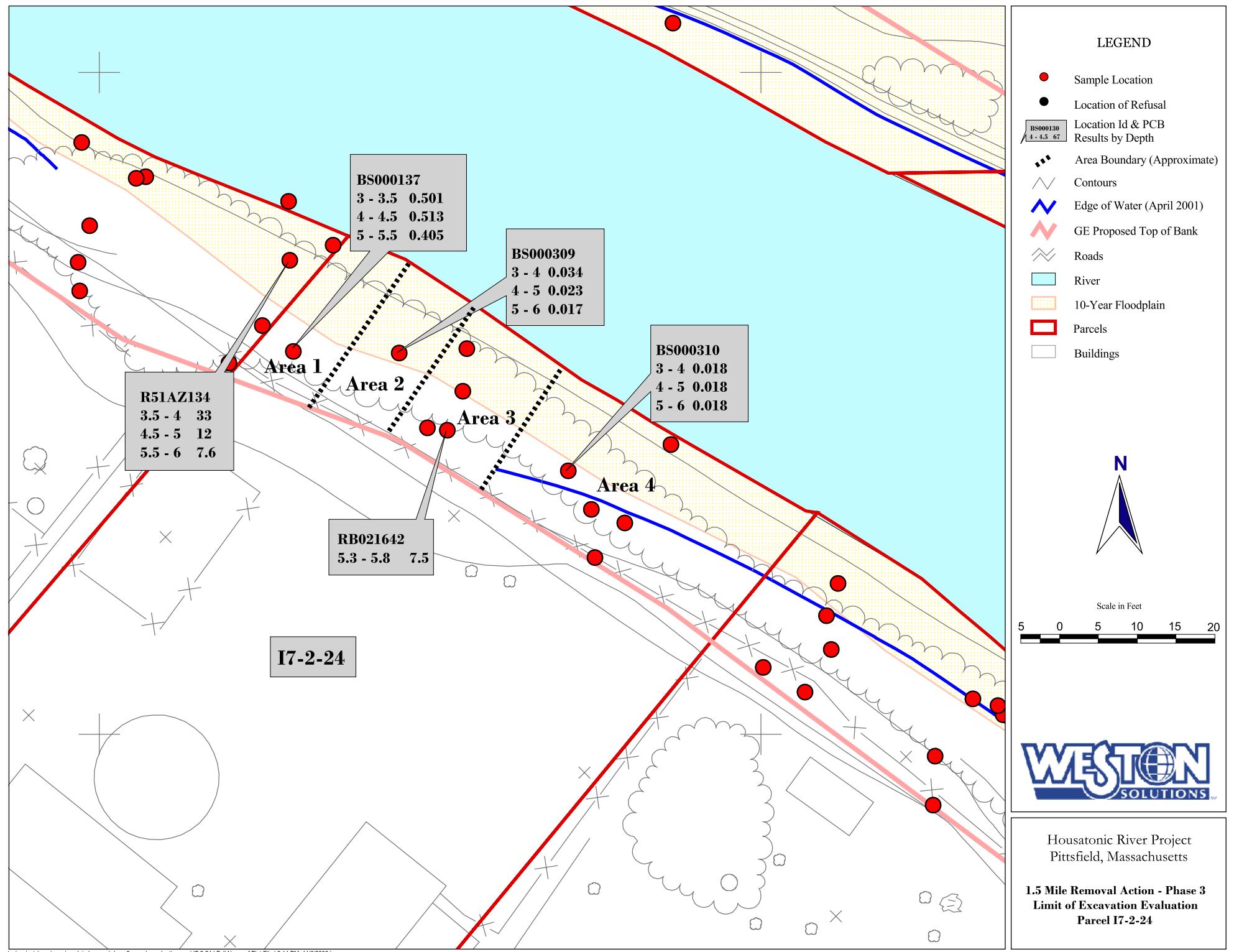
Scale in Feet

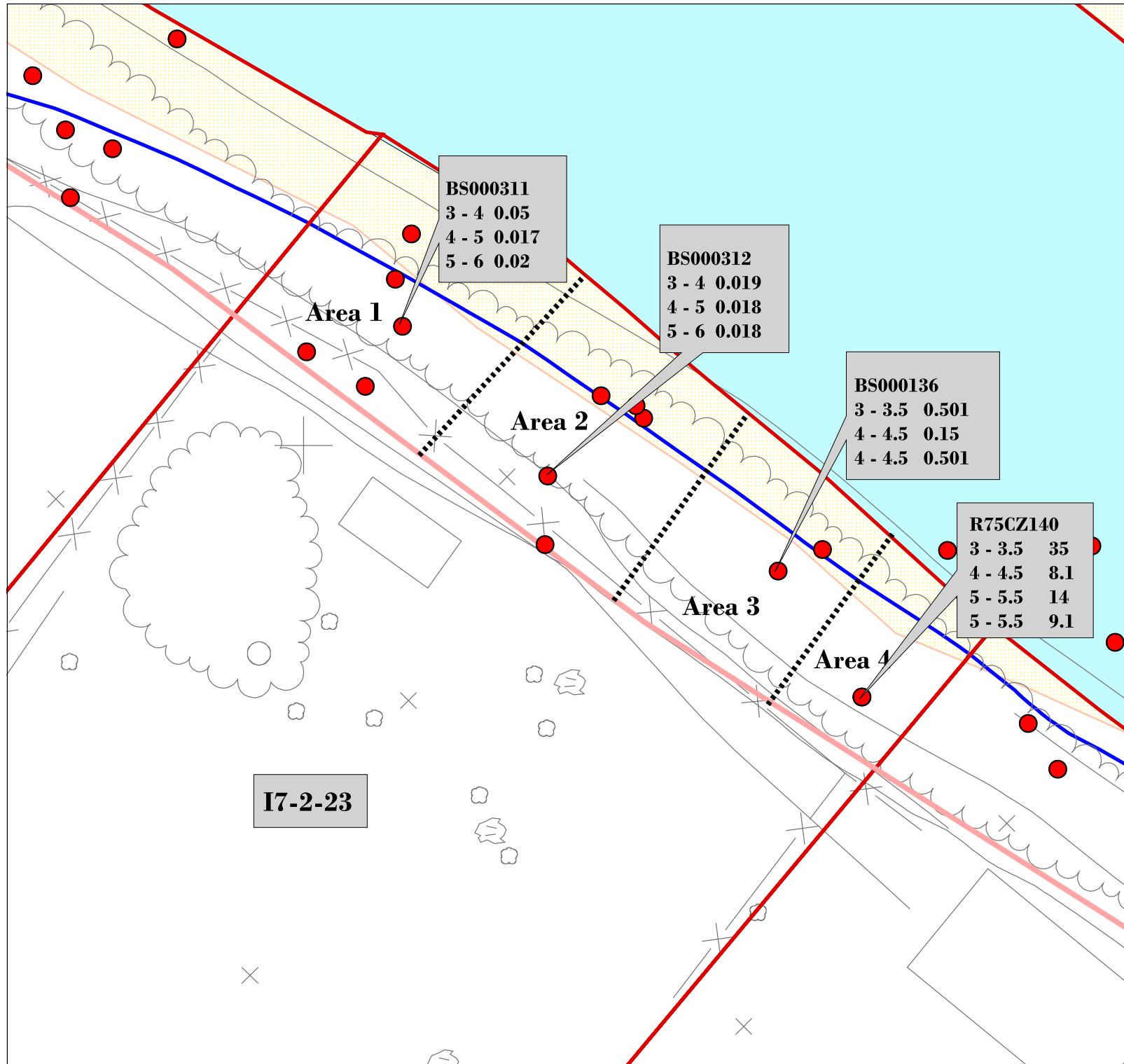
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Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-2-26







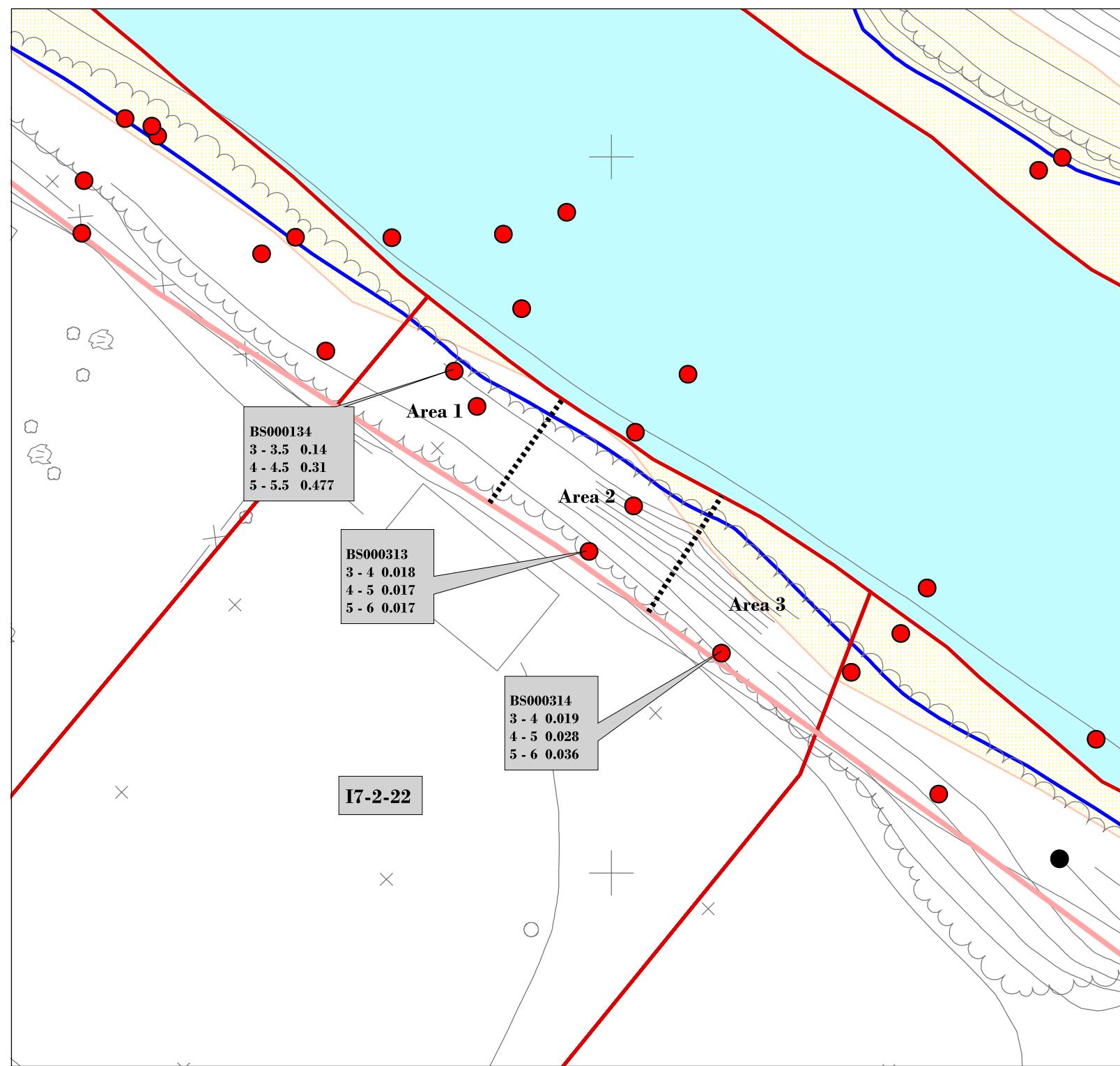
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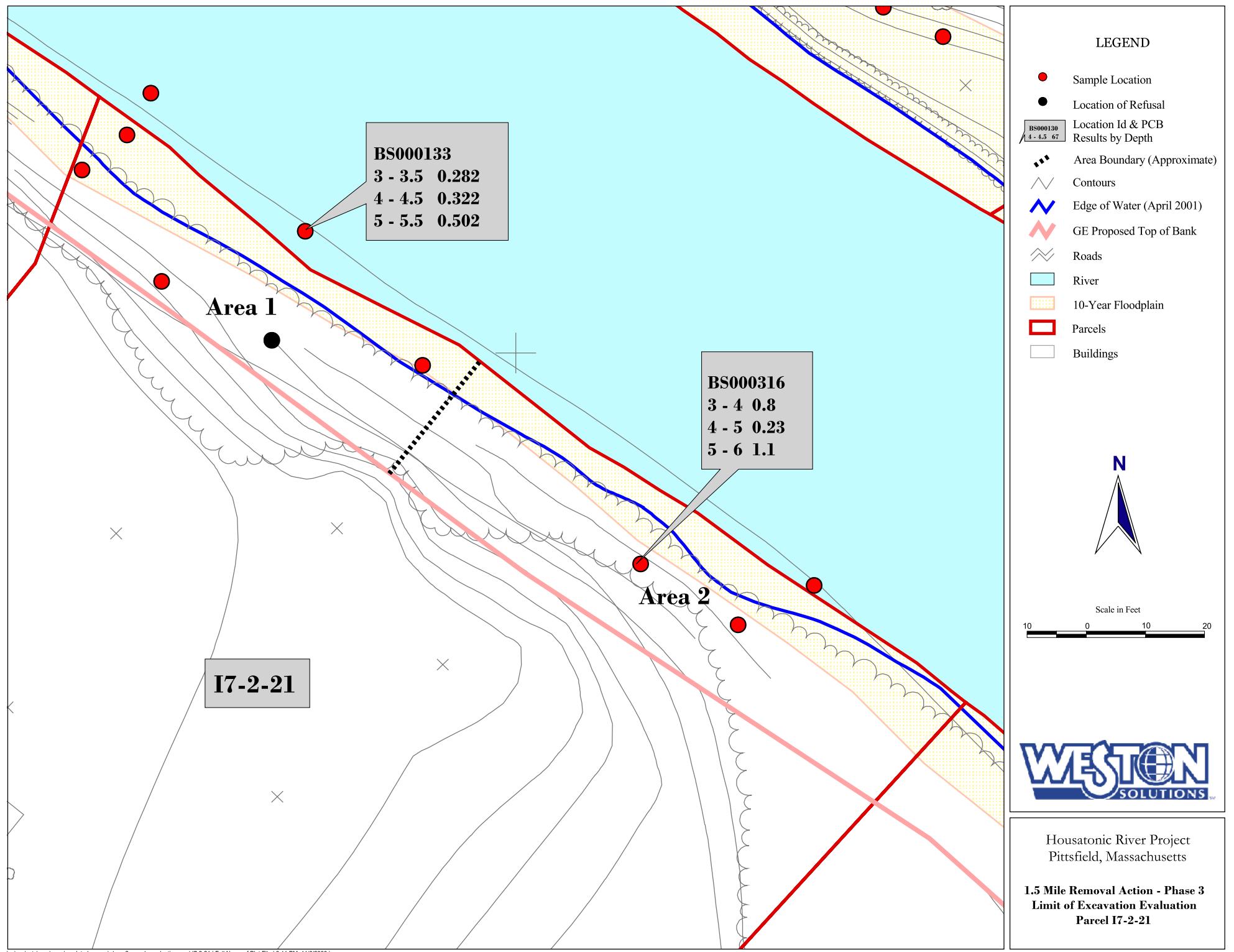
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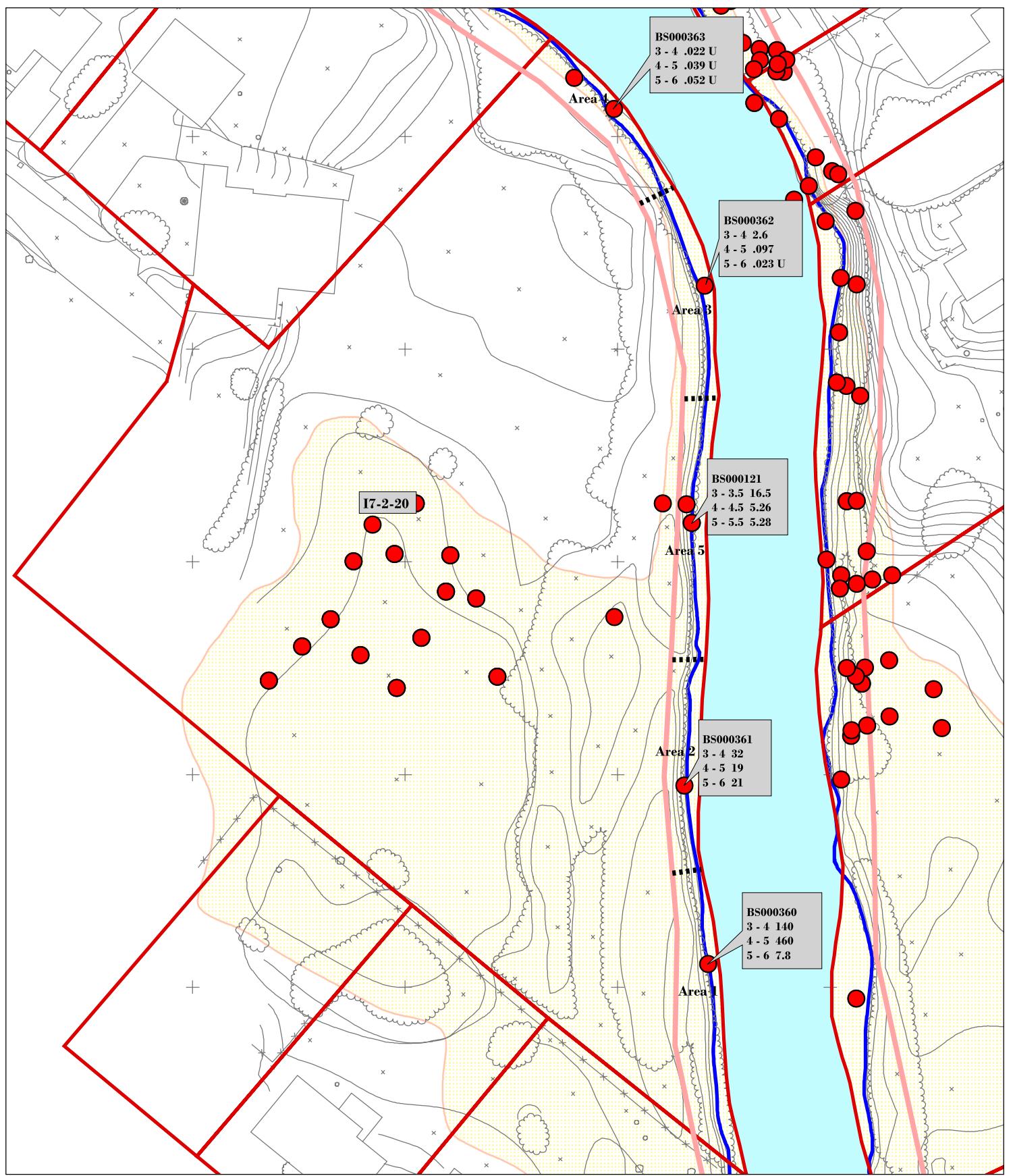
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Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-2-23





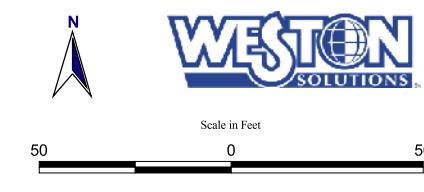


LEGEND

- Sample Location
- Location of Refusal
- BS000130 Location Id & PCB Results by Depth
4 - 4.5 67
- Area Boundary (Approximate)

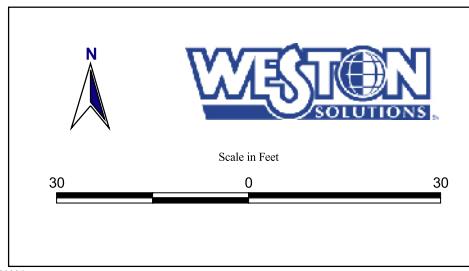
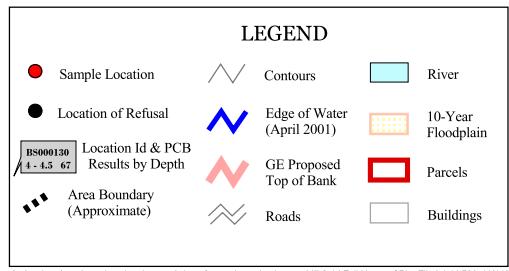
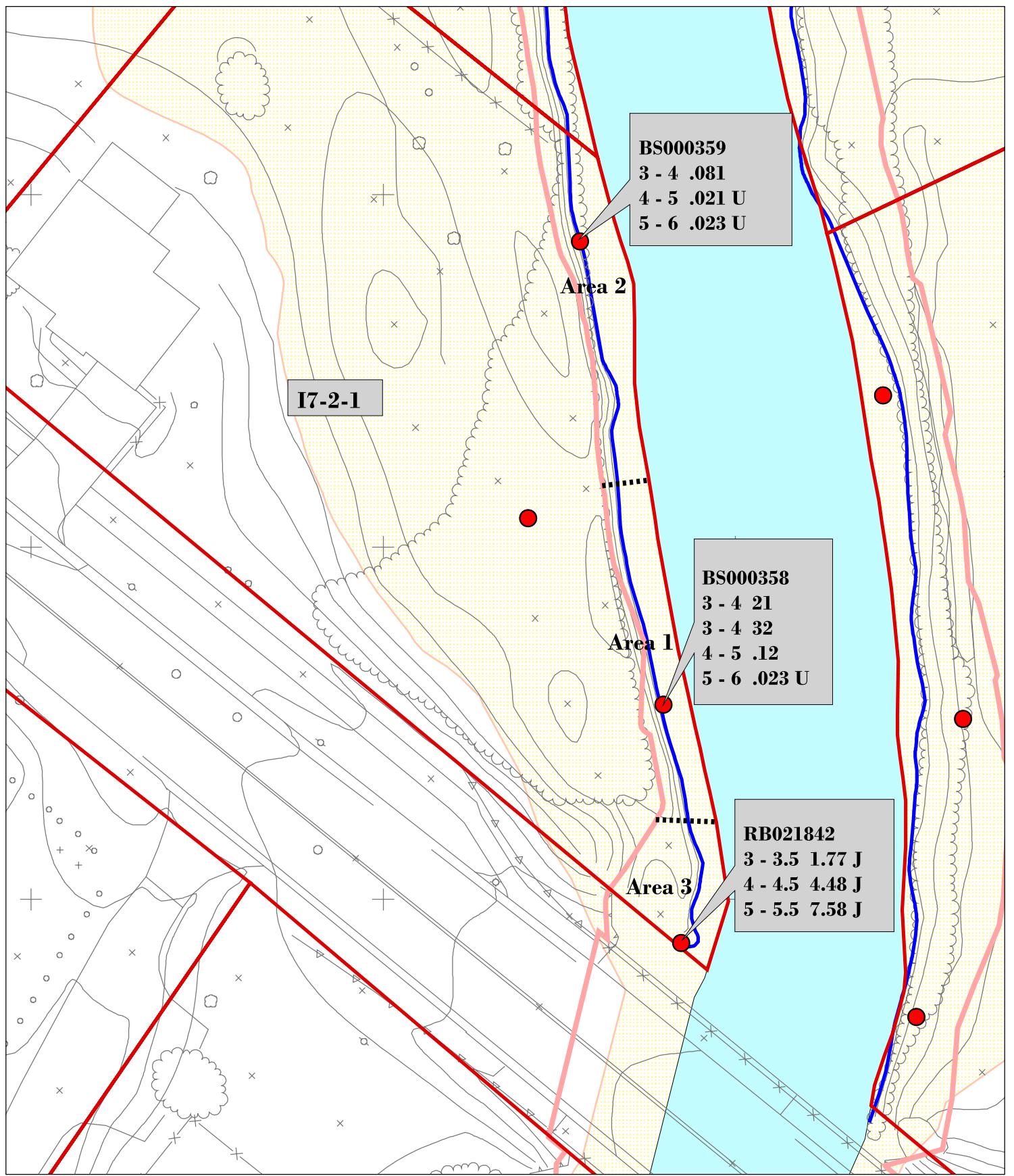
Contours

- River
- Edge of Water (April 2001)
- GE Proposed Top of Bank
- Roads
- Buildings



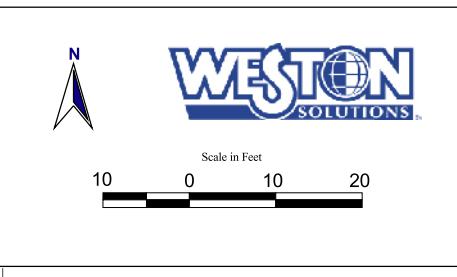
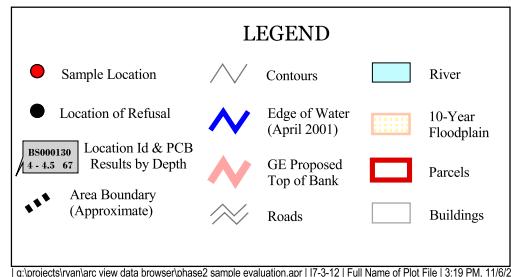
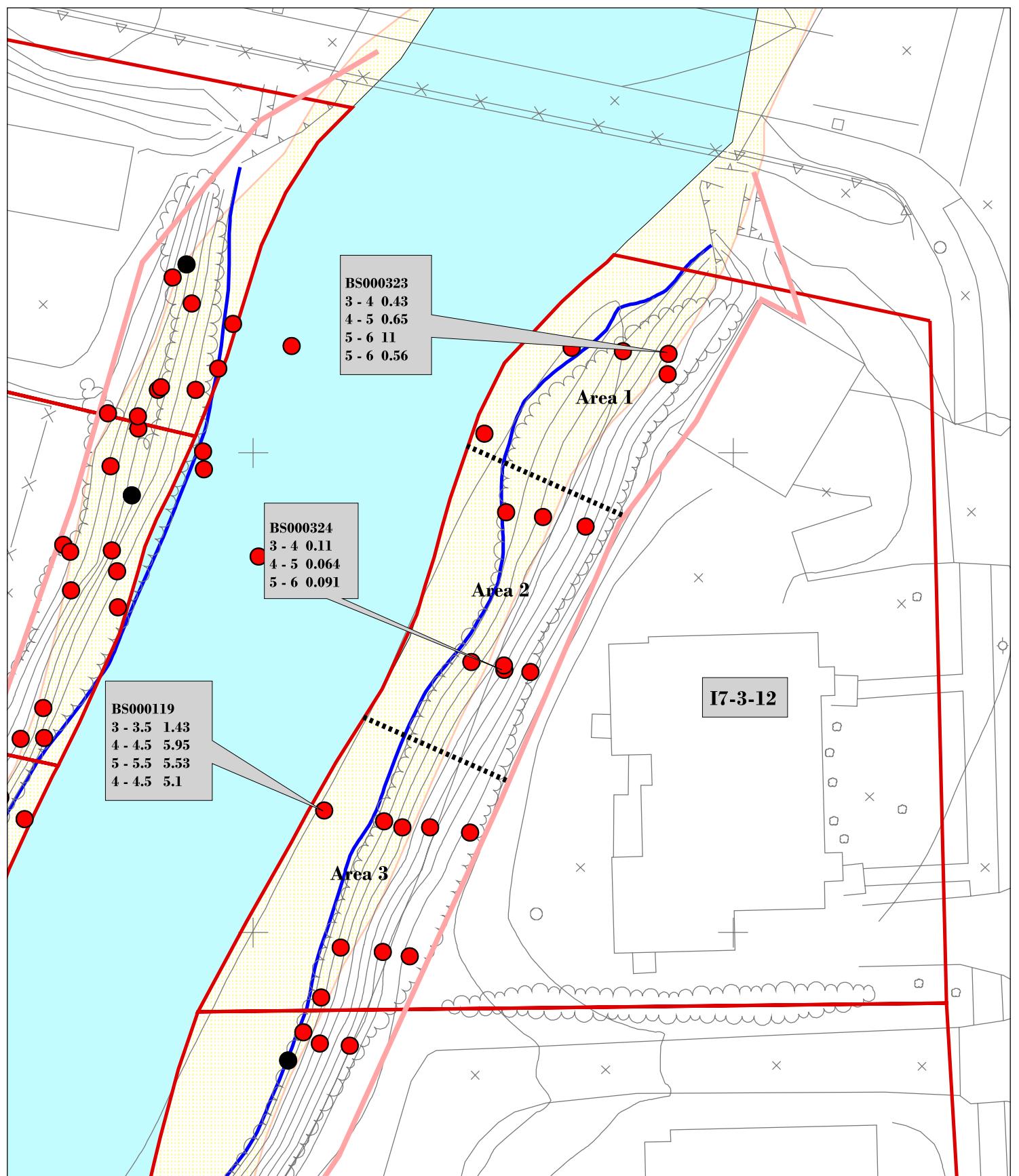
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-2-20



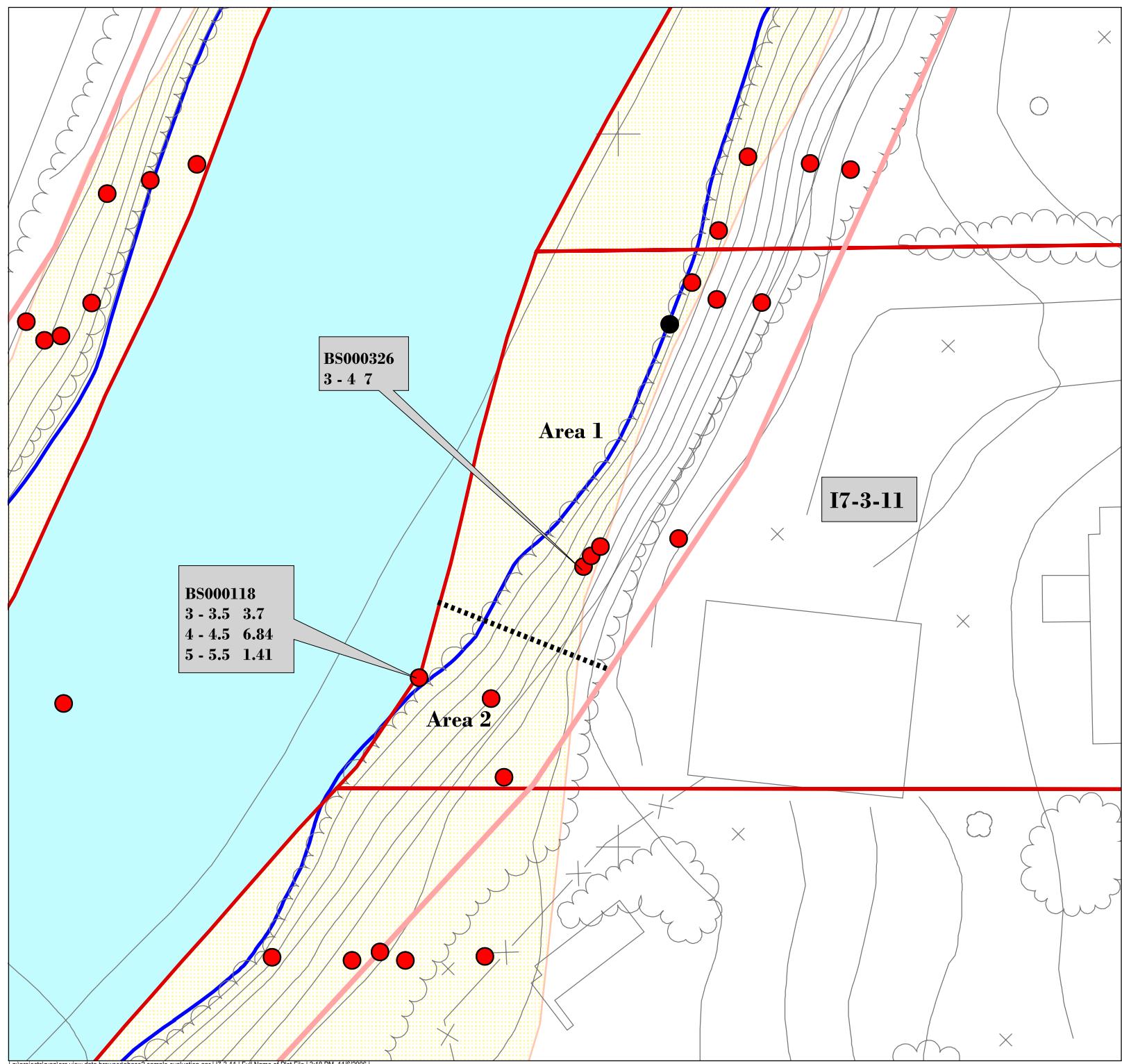
Housatonic River Project
Pittsfield, Massachusetts

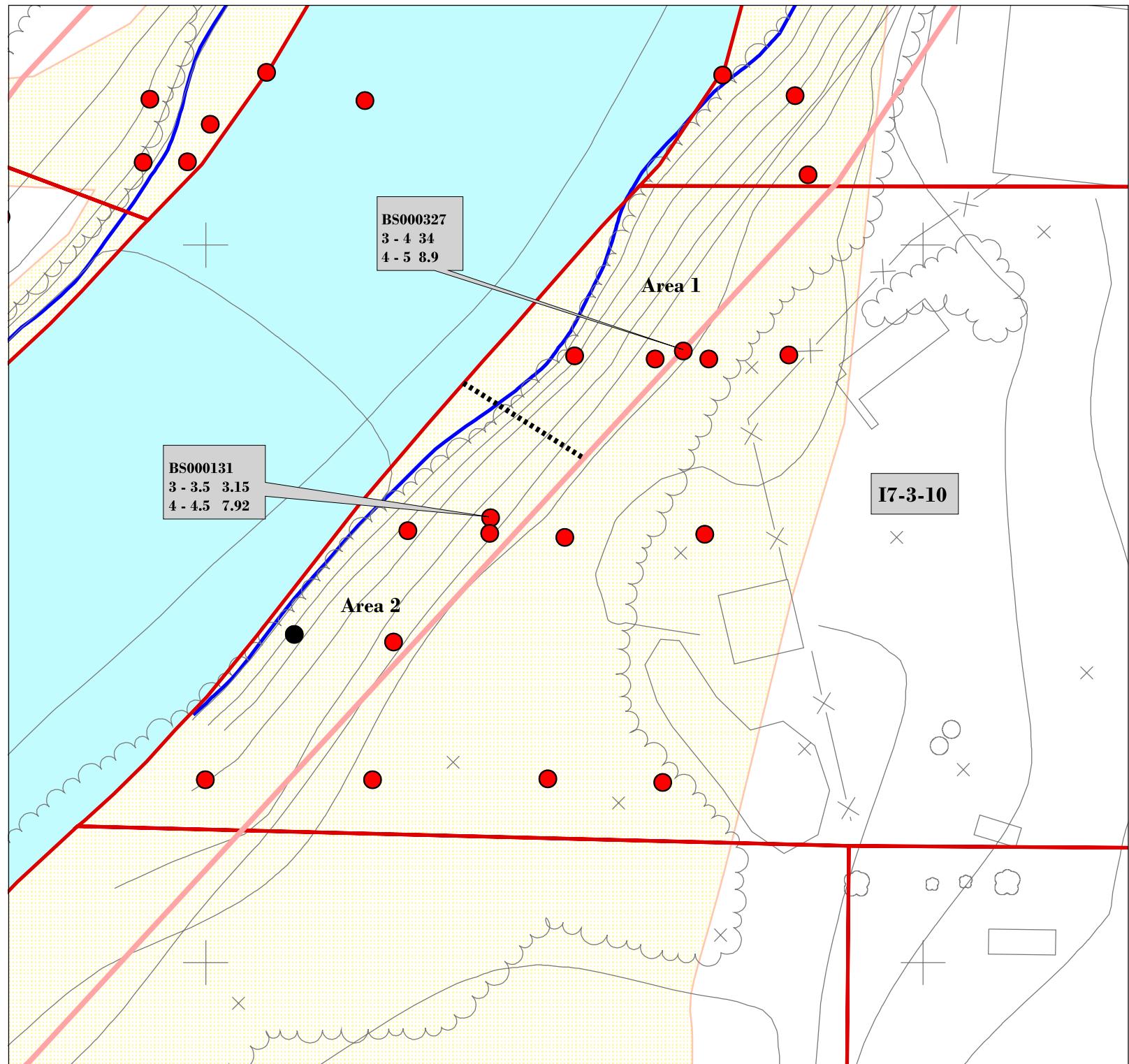
1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-2-1



Housatonic River Project
Pittsfield, Massachusetts

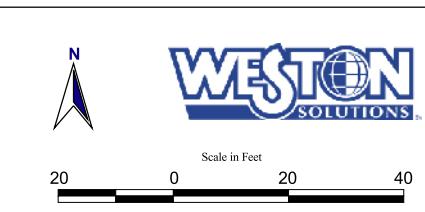
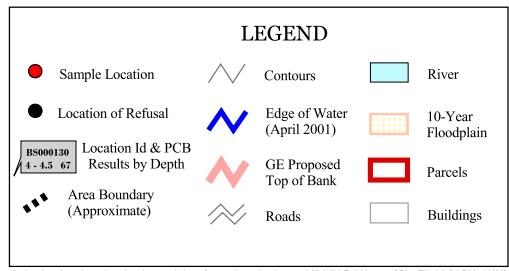
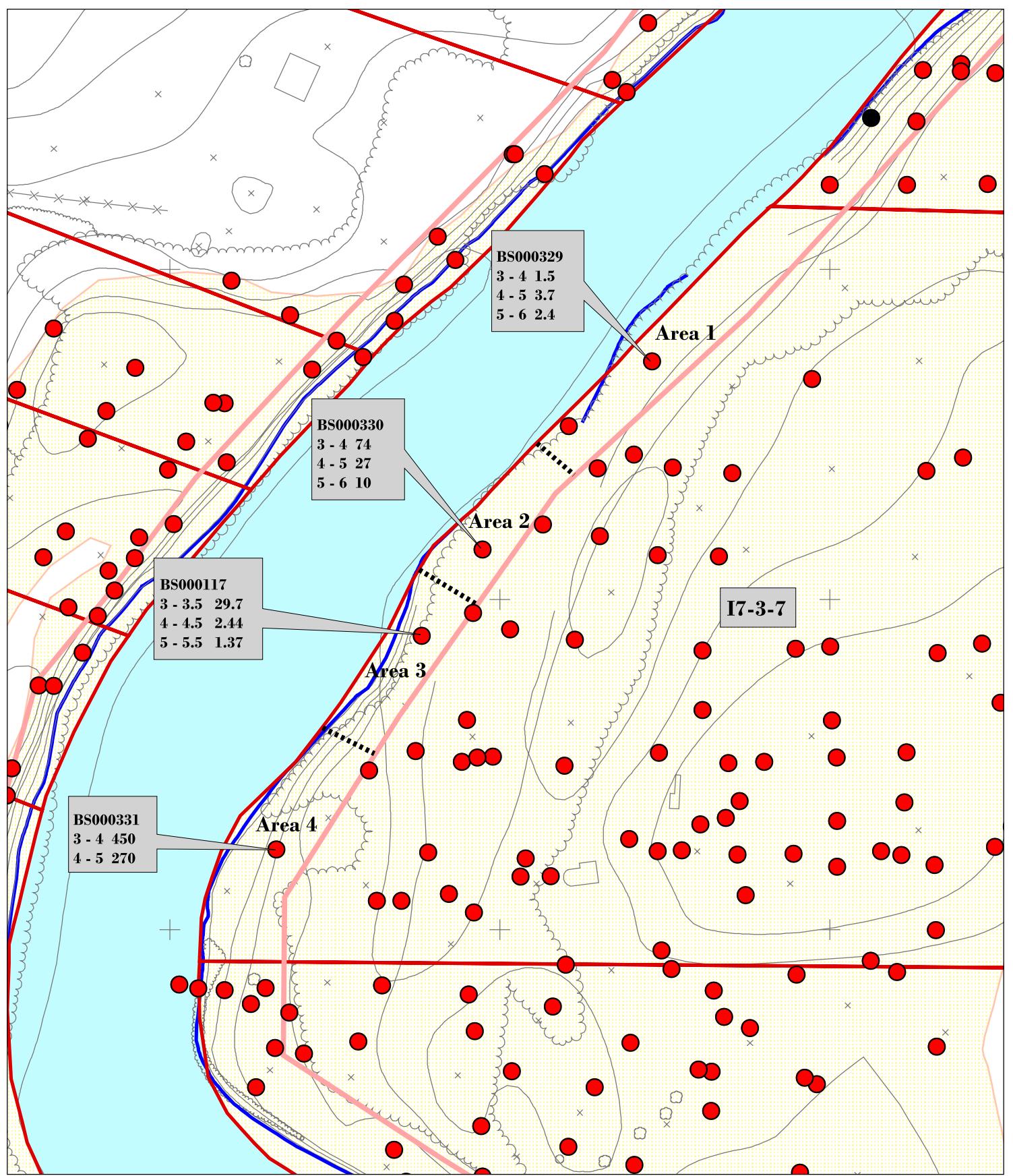
1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-12





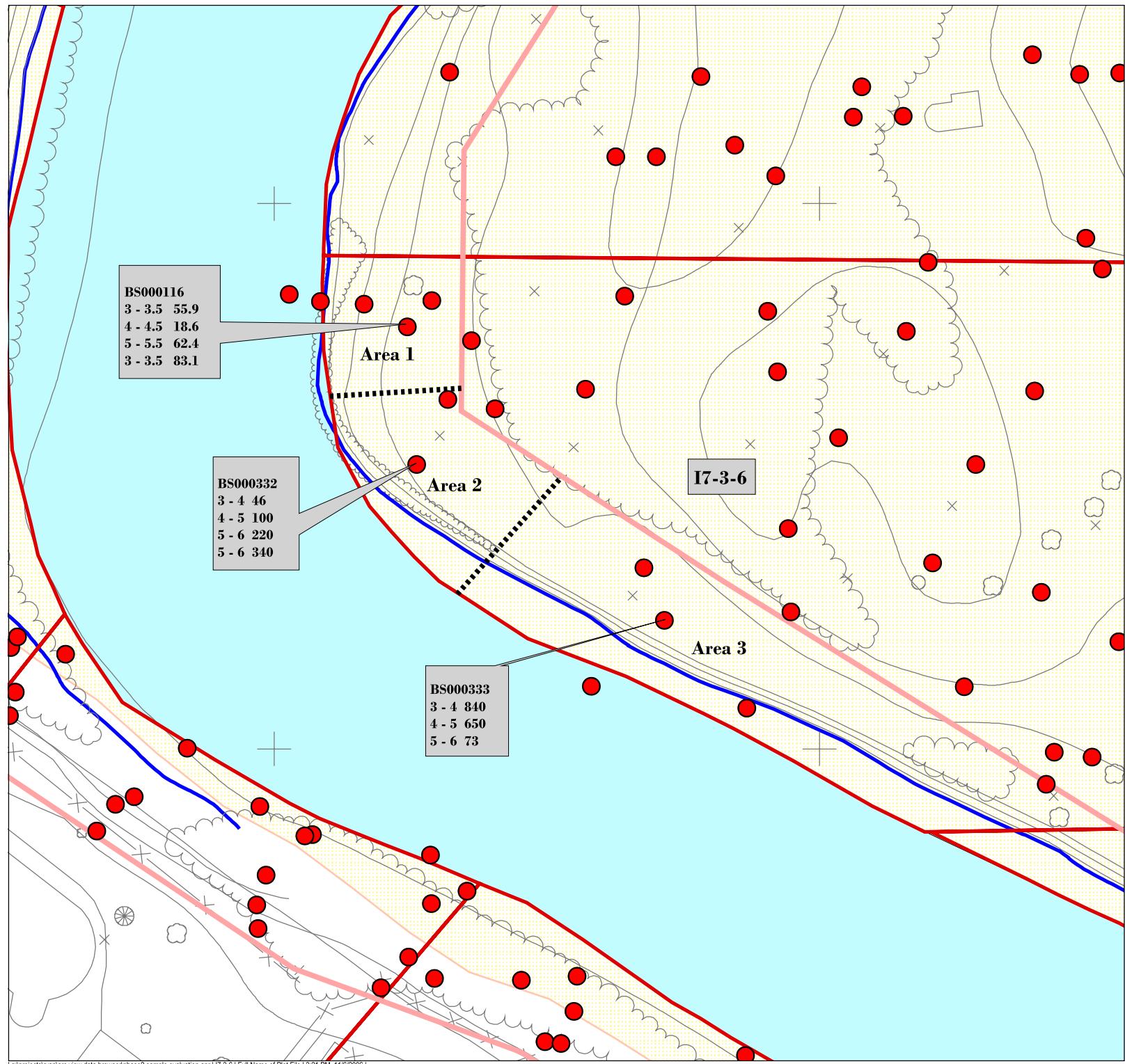
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-10



Housatonic River Project
Pittsfield, Massachusetts

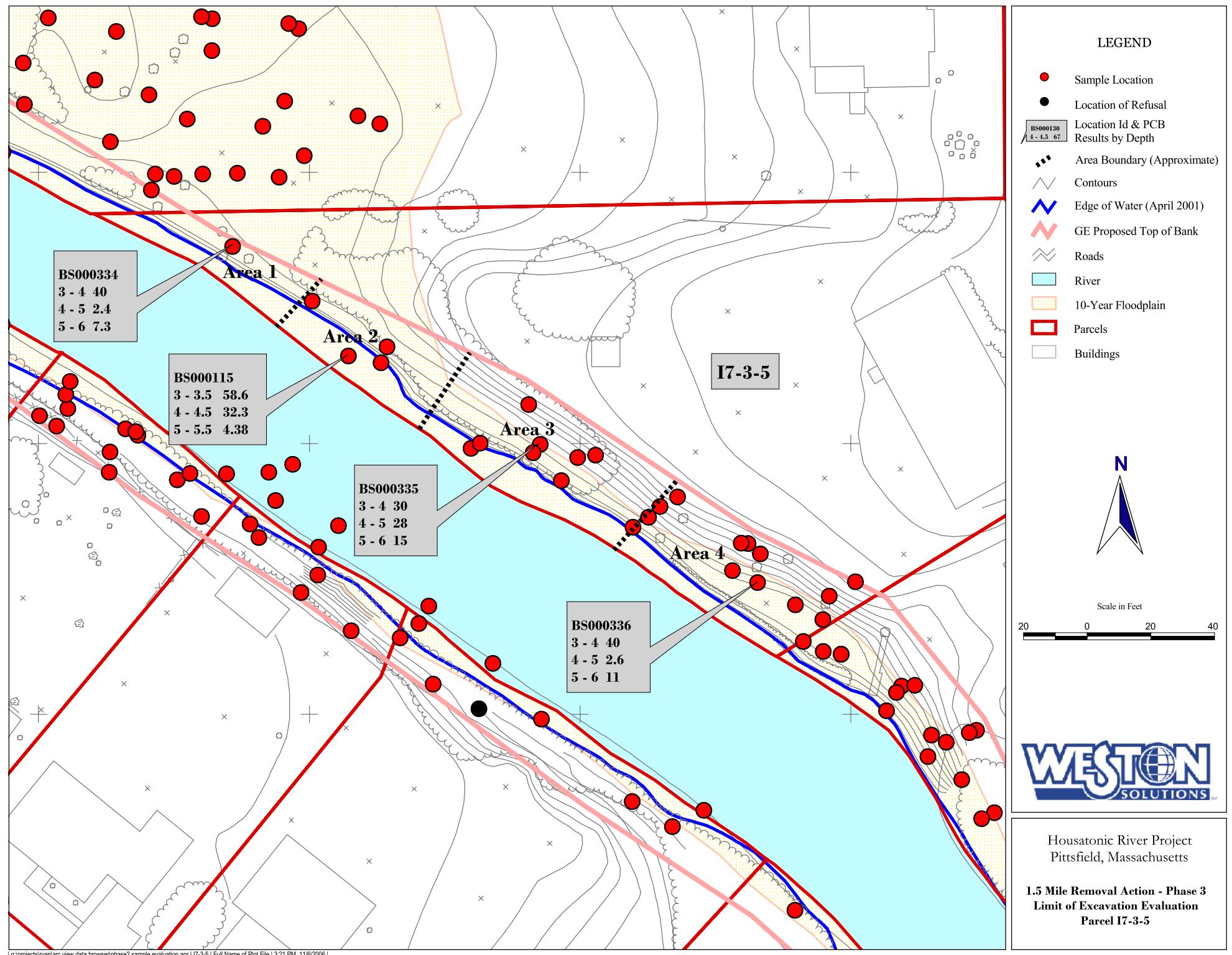
1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-7

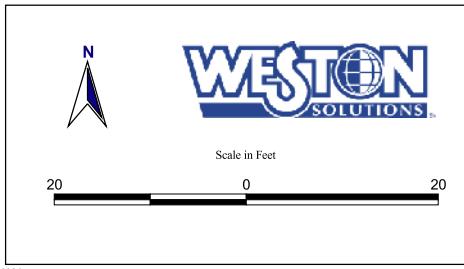
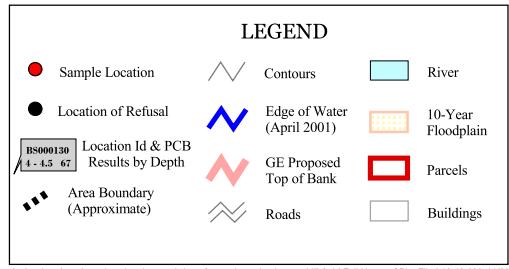
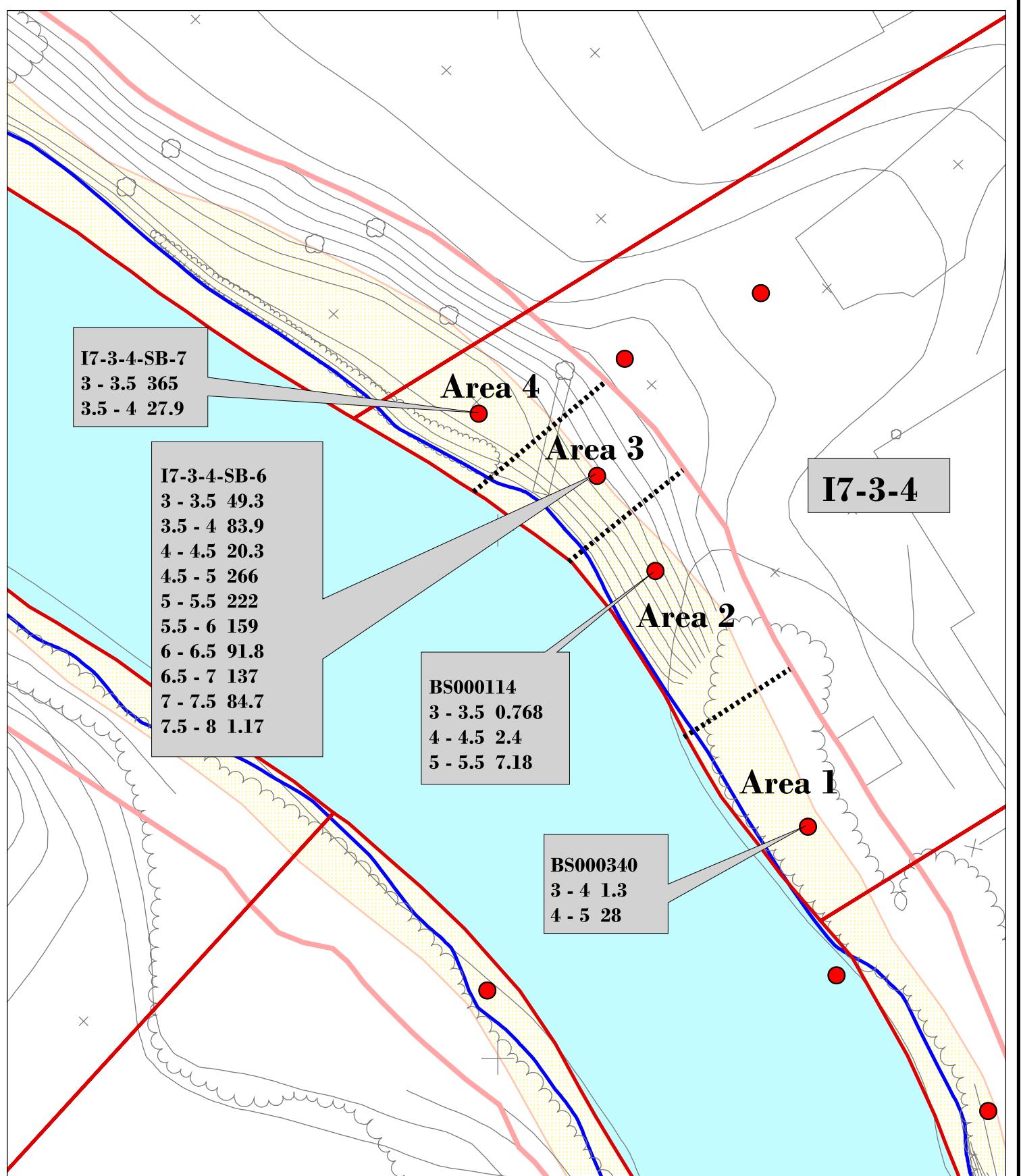


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Pittsfield, Massachusetts

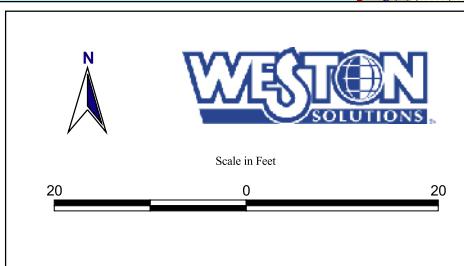
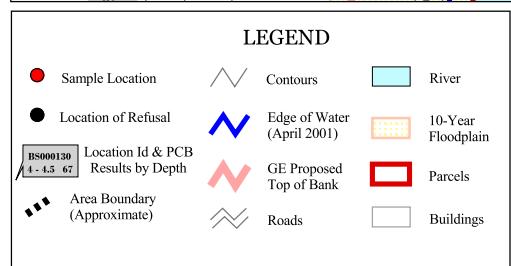
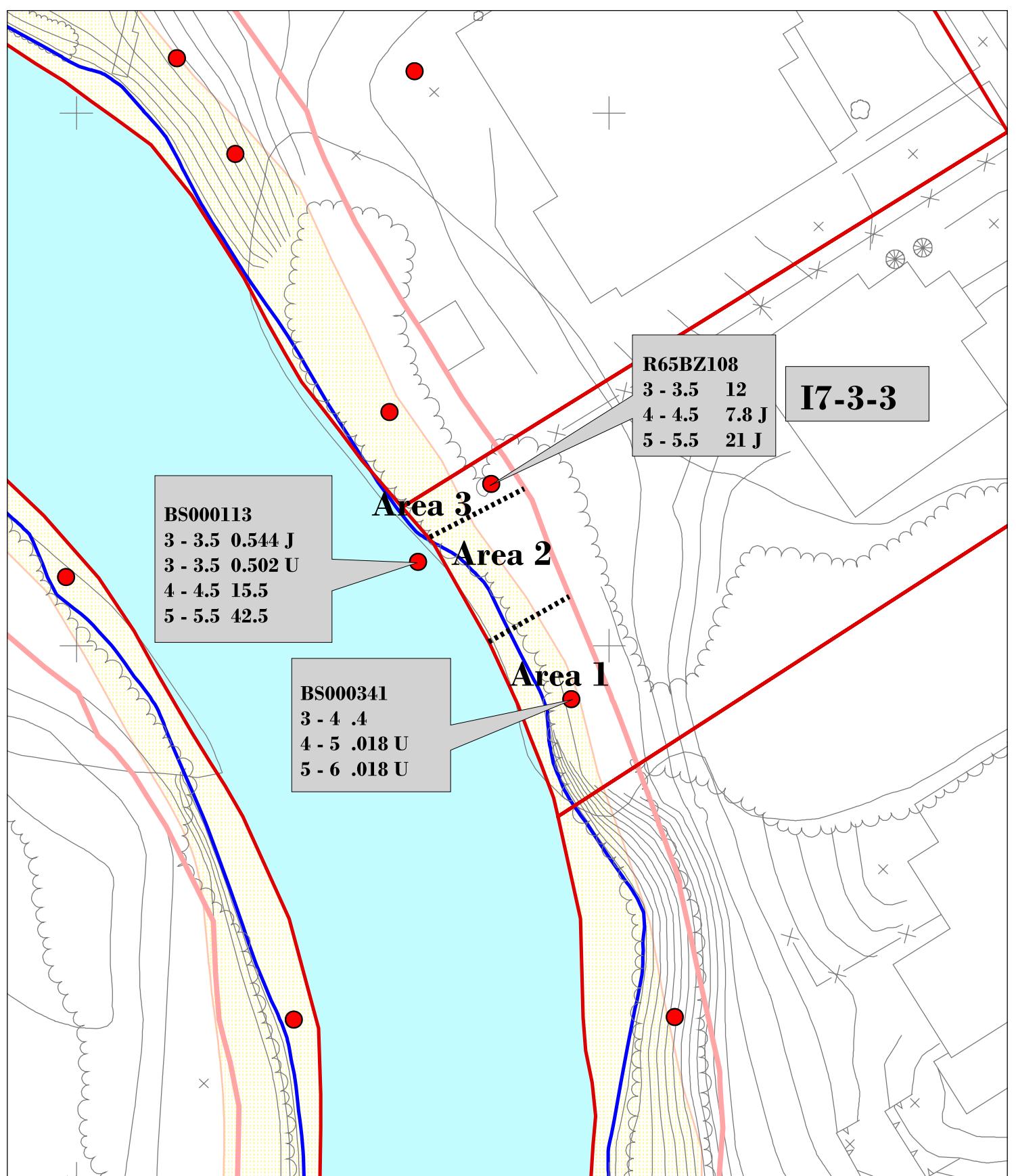
1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-6





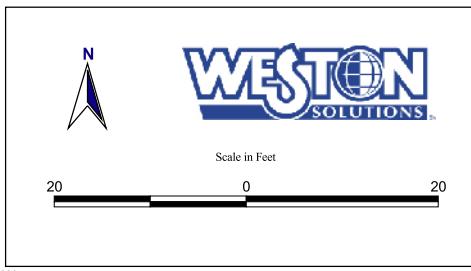
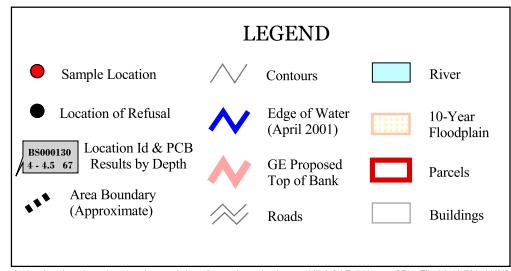
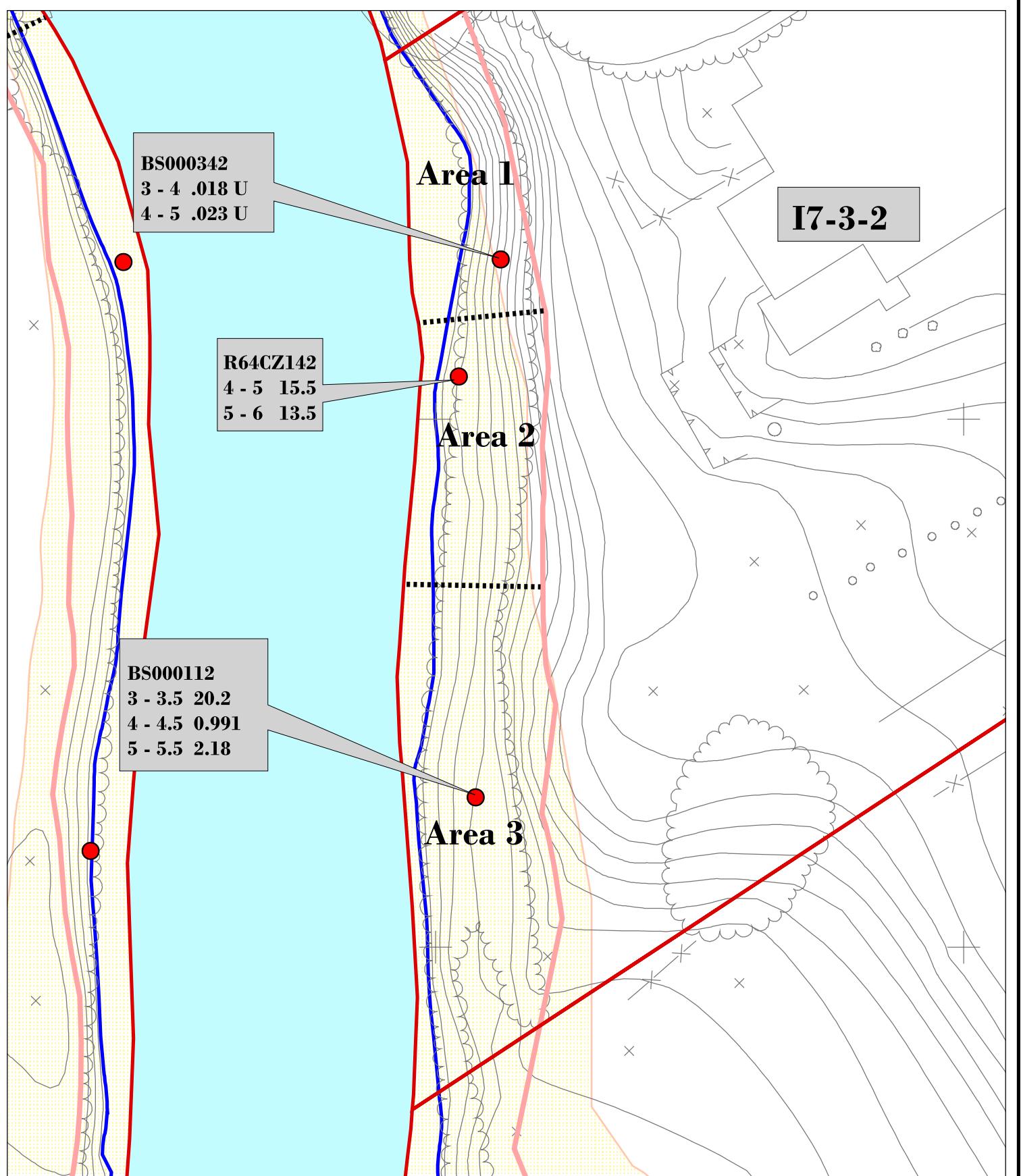
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-4



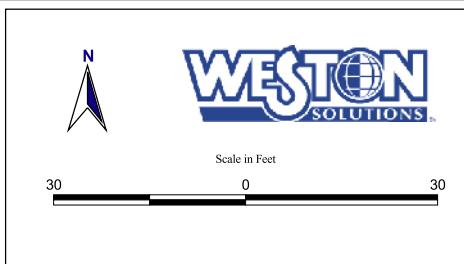
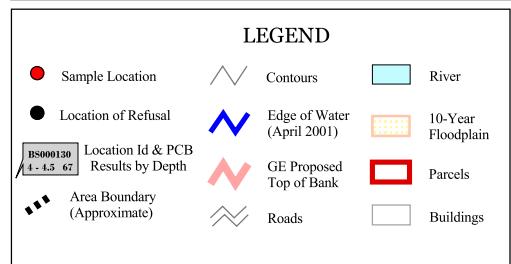
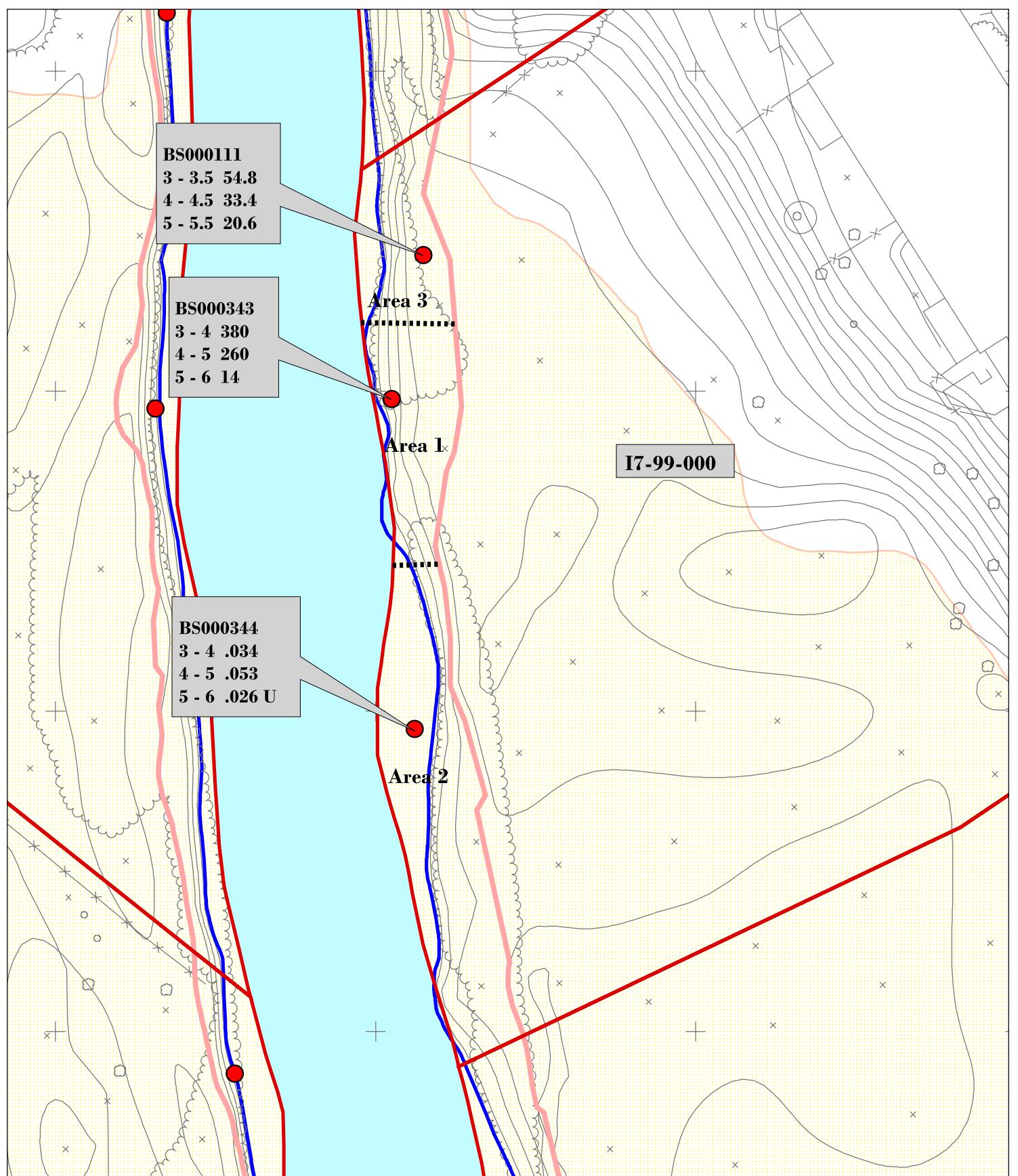
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-3



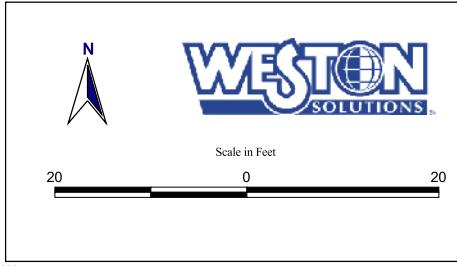
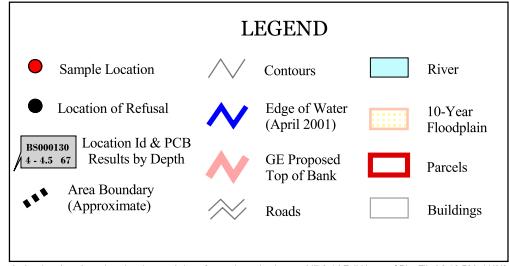
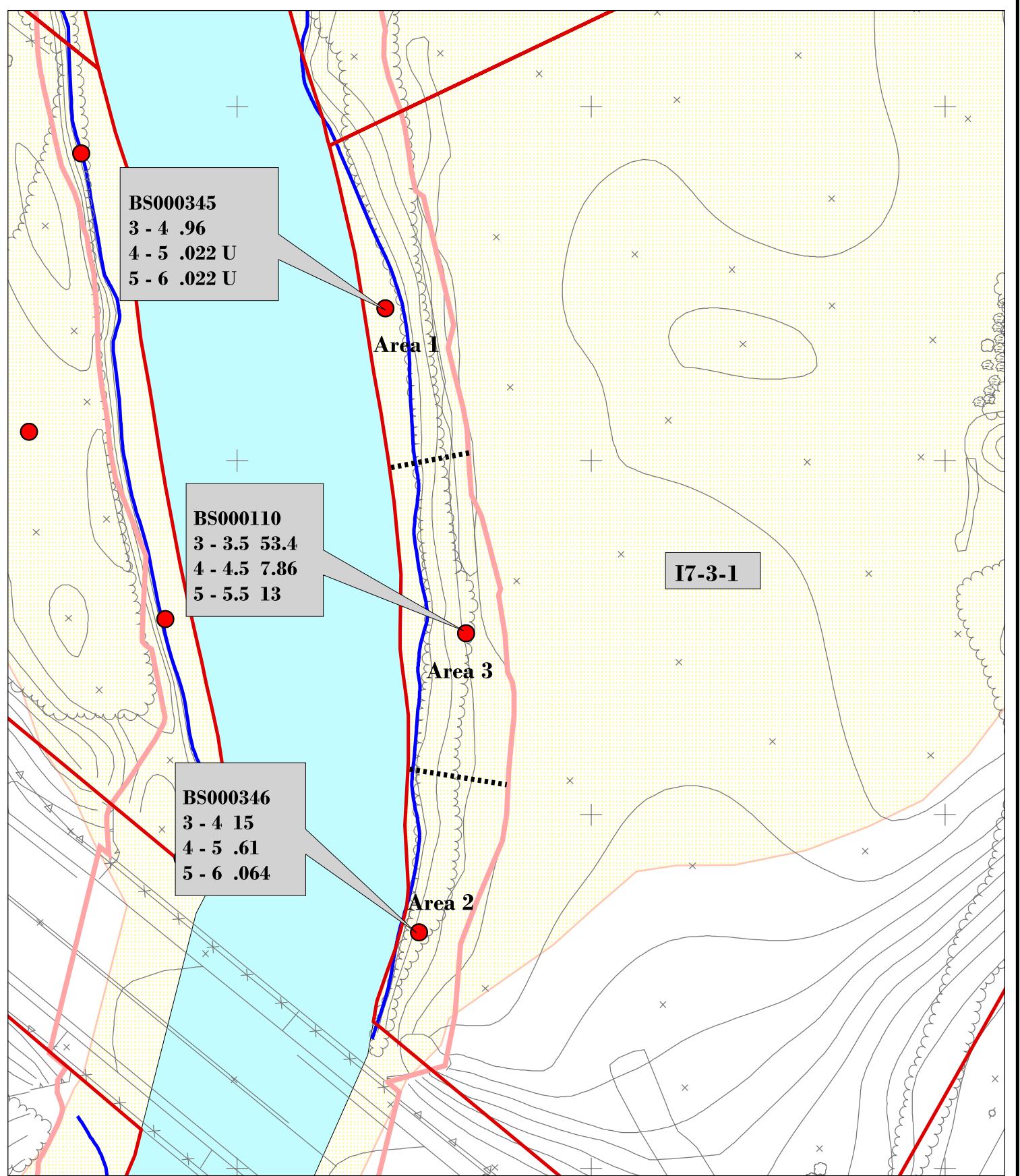
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-2



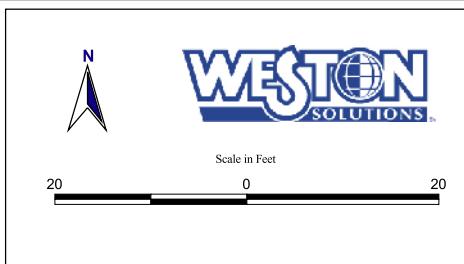
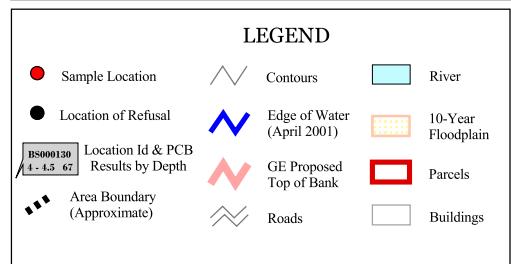
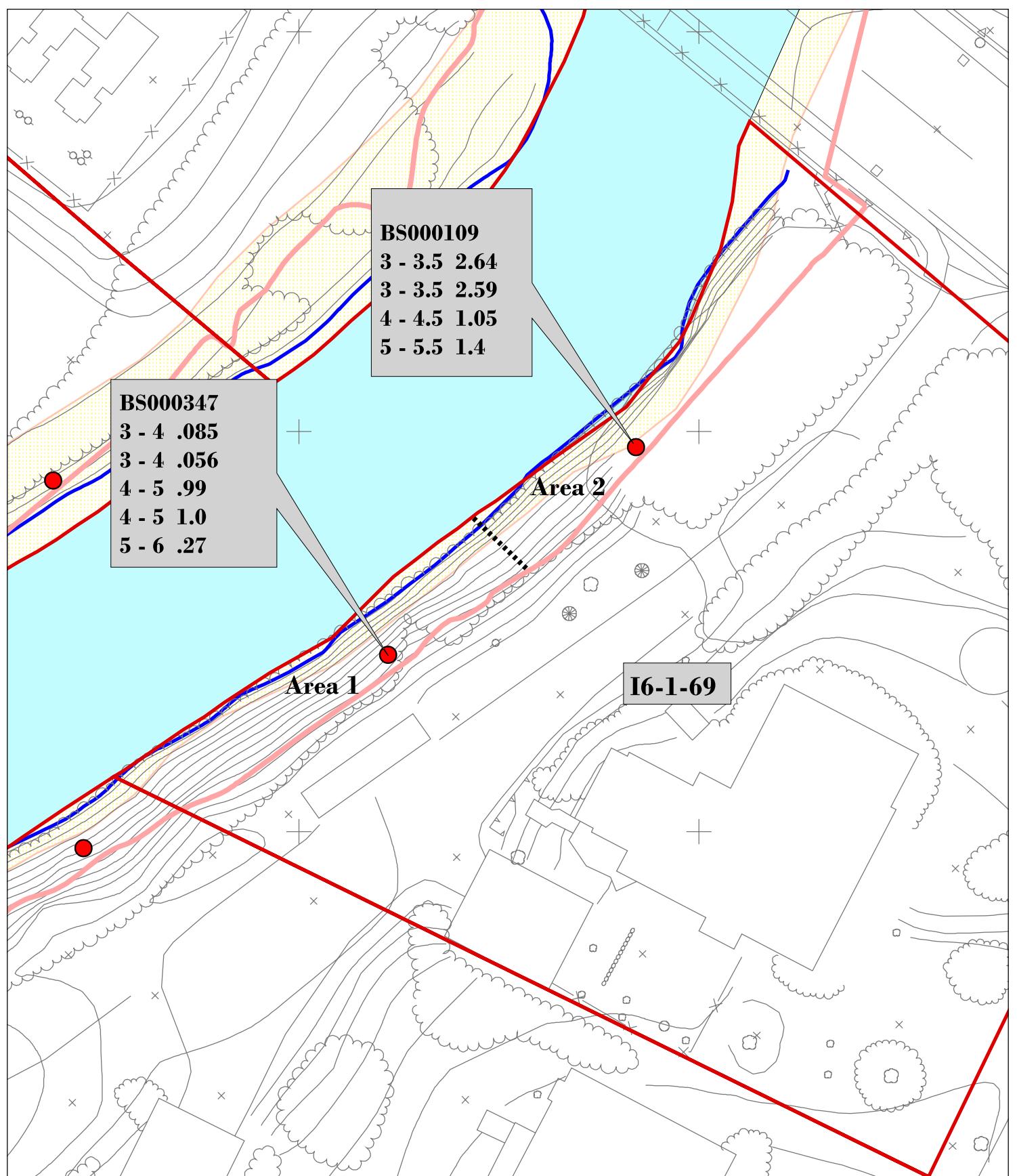
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-99-000



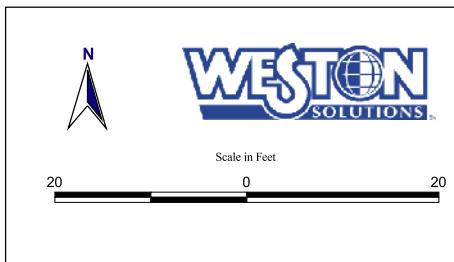
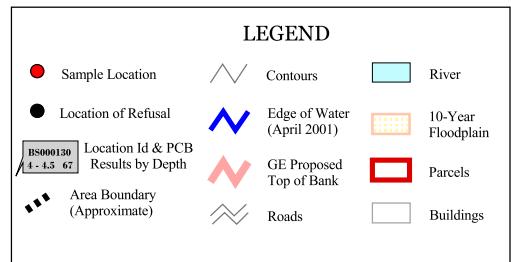
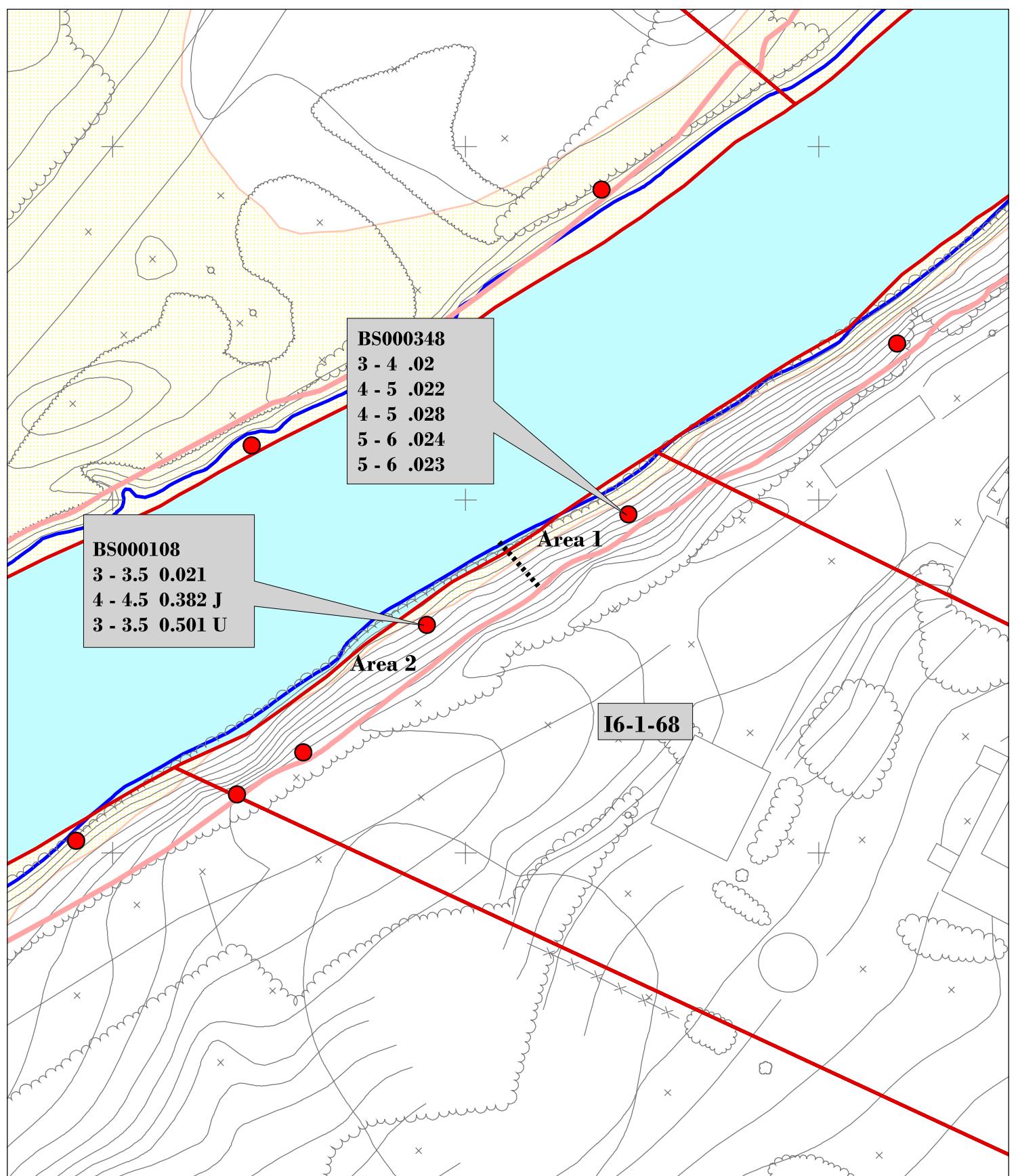
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I7-3-1



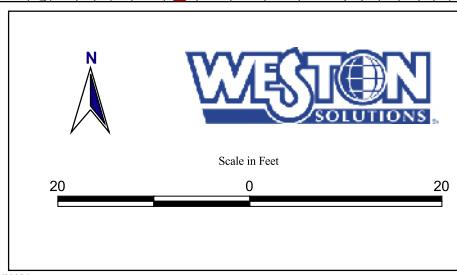
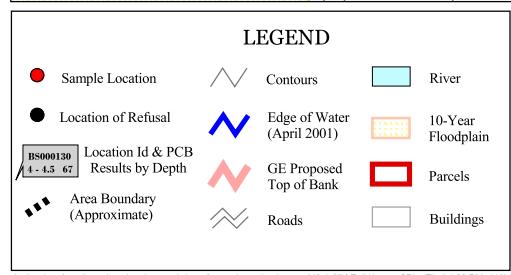
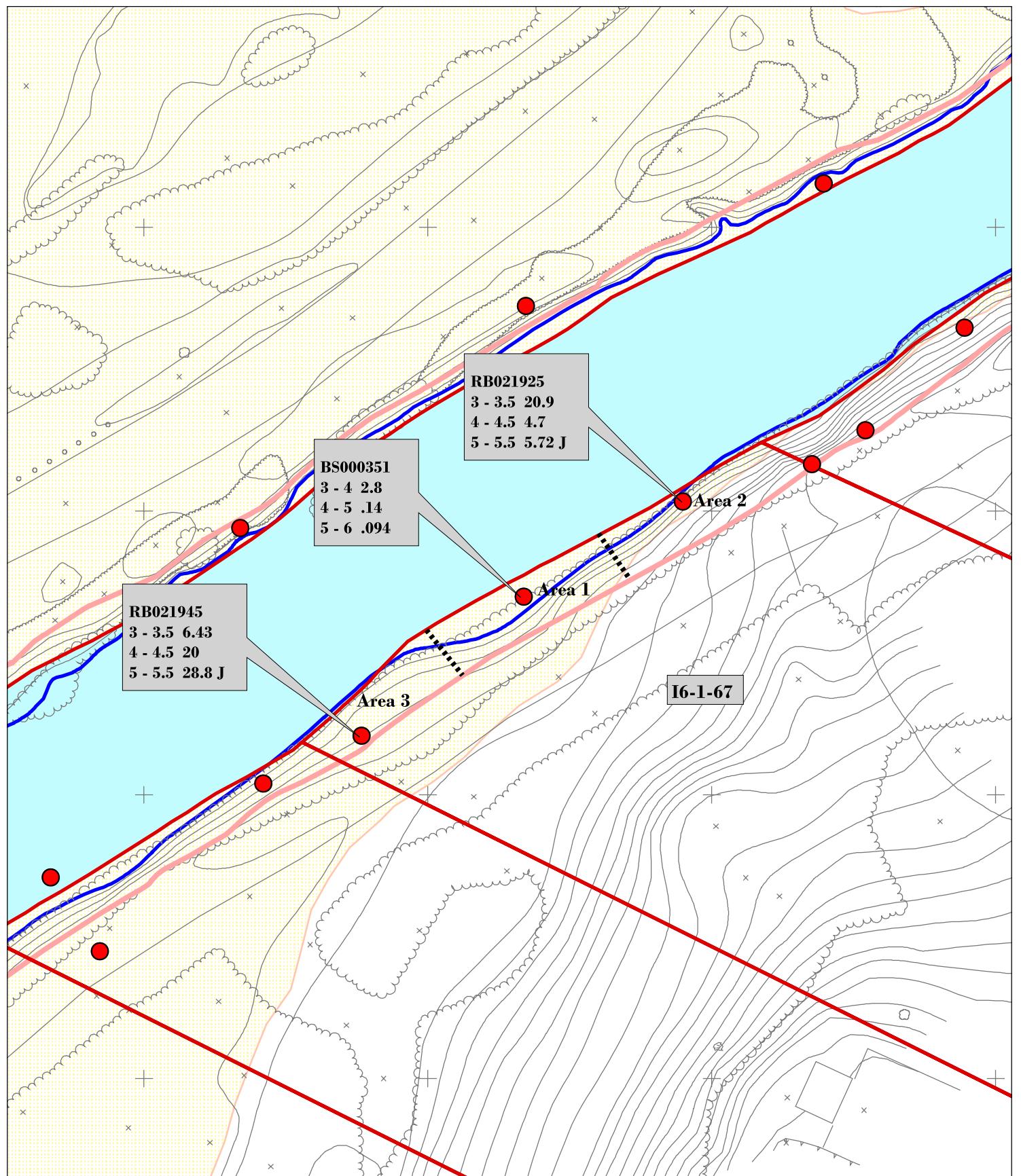
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I6-1-69



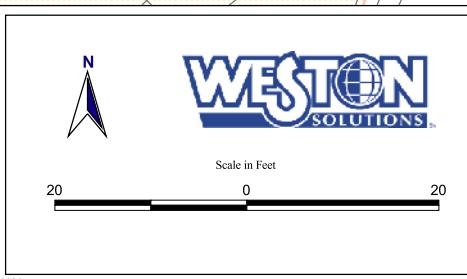
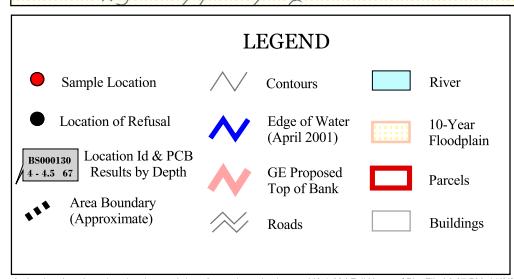
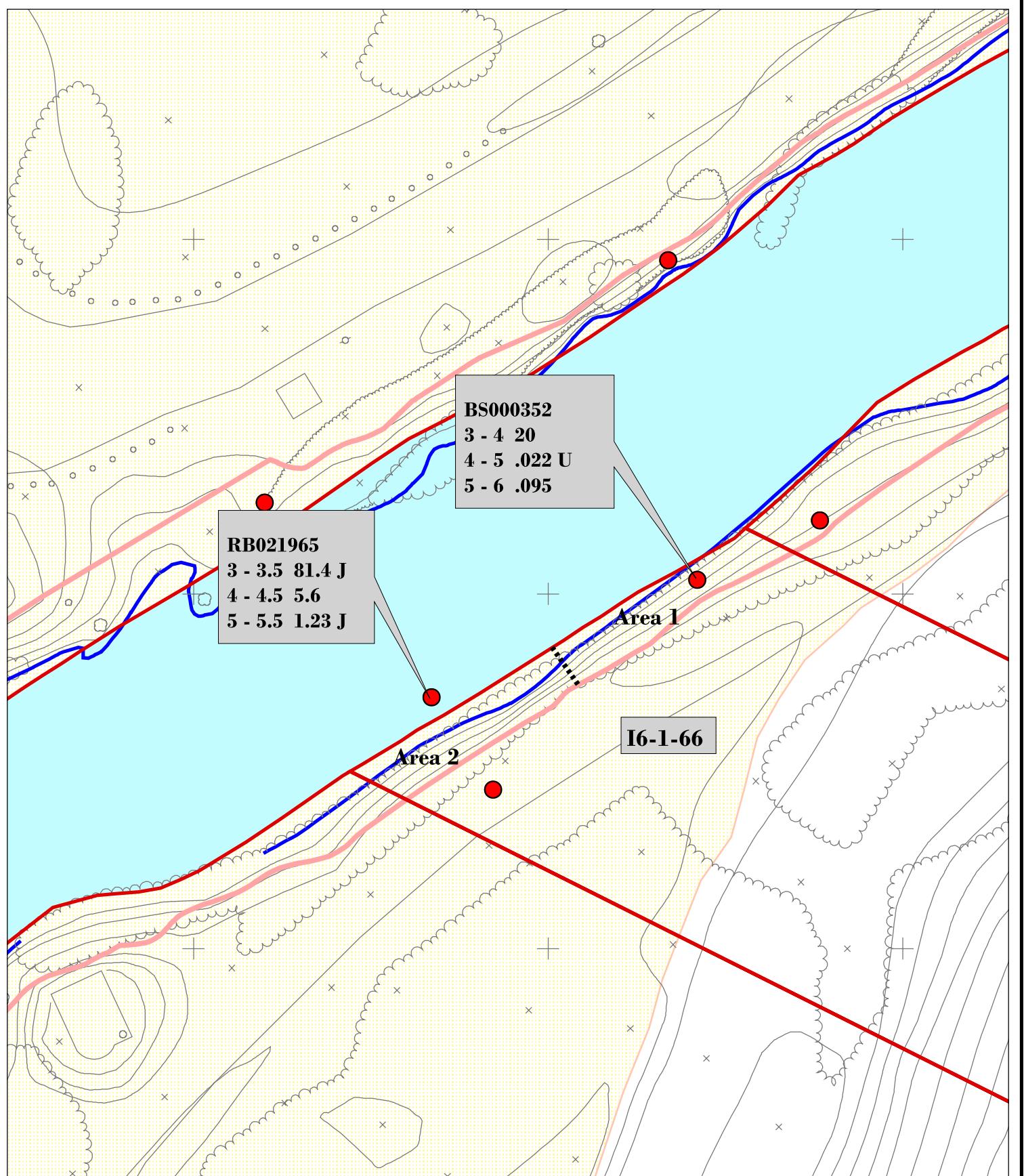
Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I6-1-68



Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I6-1-67

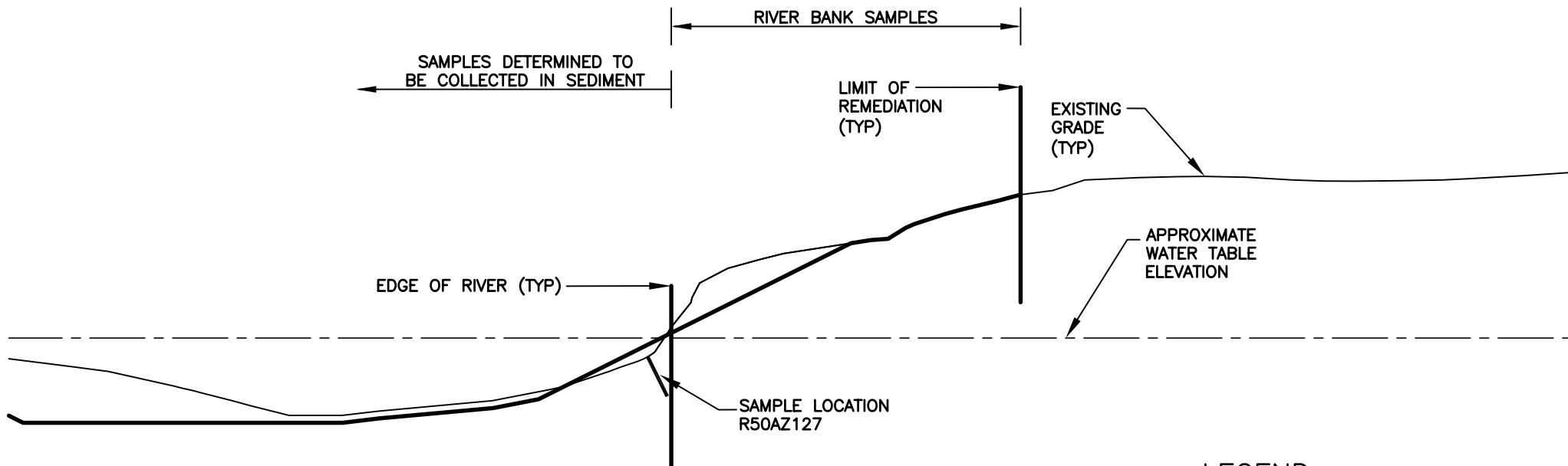


Housatonic River Project
Pittsfield, Massachusetts

1.5 Mile Removal Action - Phase 3
Limit of Excavation Evaluation
Parcel I6-1-66

ATTACHMENT D

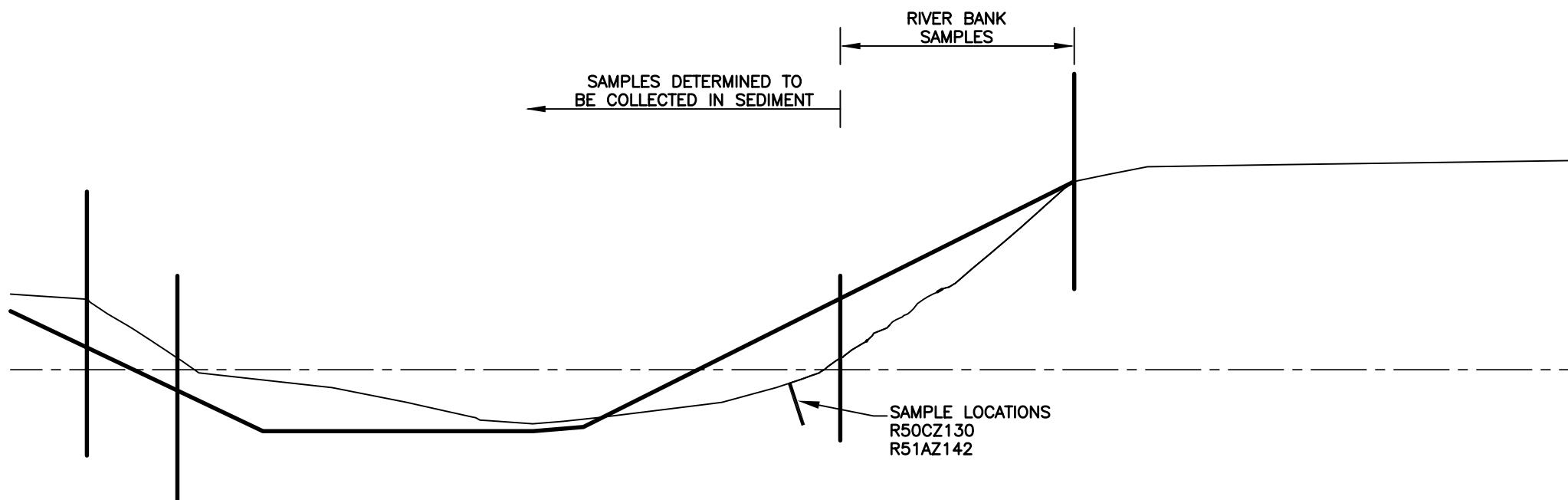
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LEGEND

- EXISTING GRADE
- FINAL GRADE
- - - APPROXIMATE WATER TABLE ELEVATION

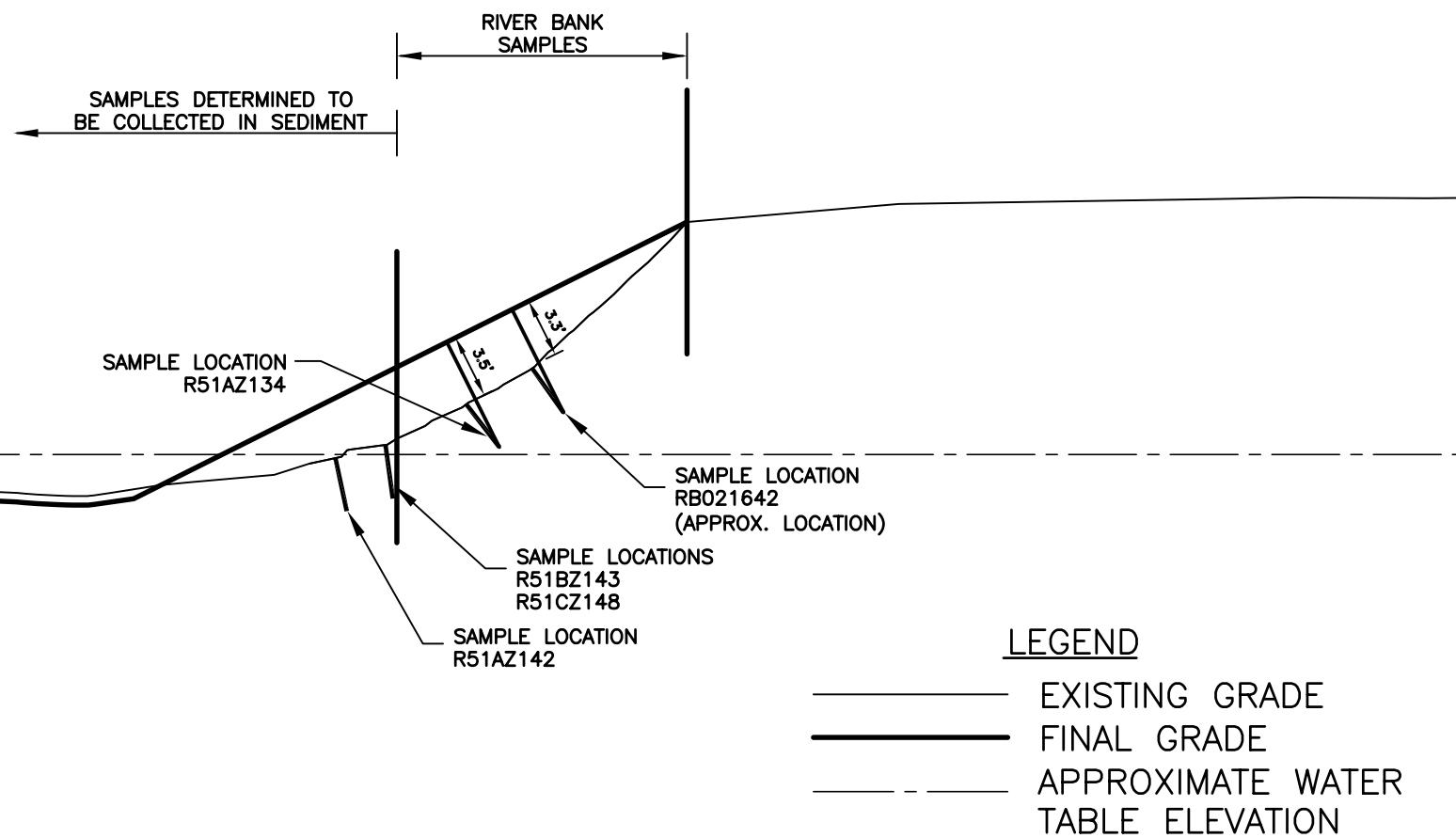
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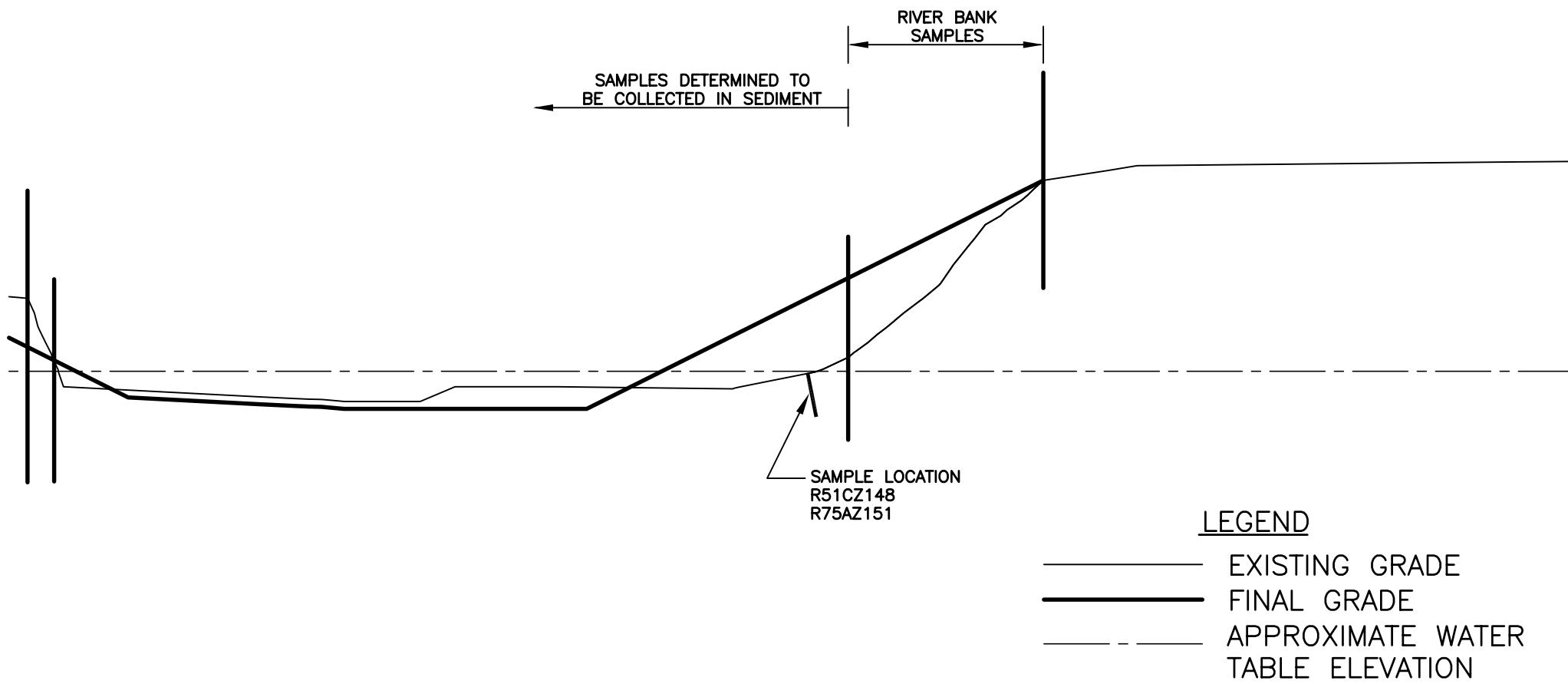
LEGEND

- EXISTING GRADE
- FINAL GRADE
- APPROXIMATE WATER TABLE ELEVATION

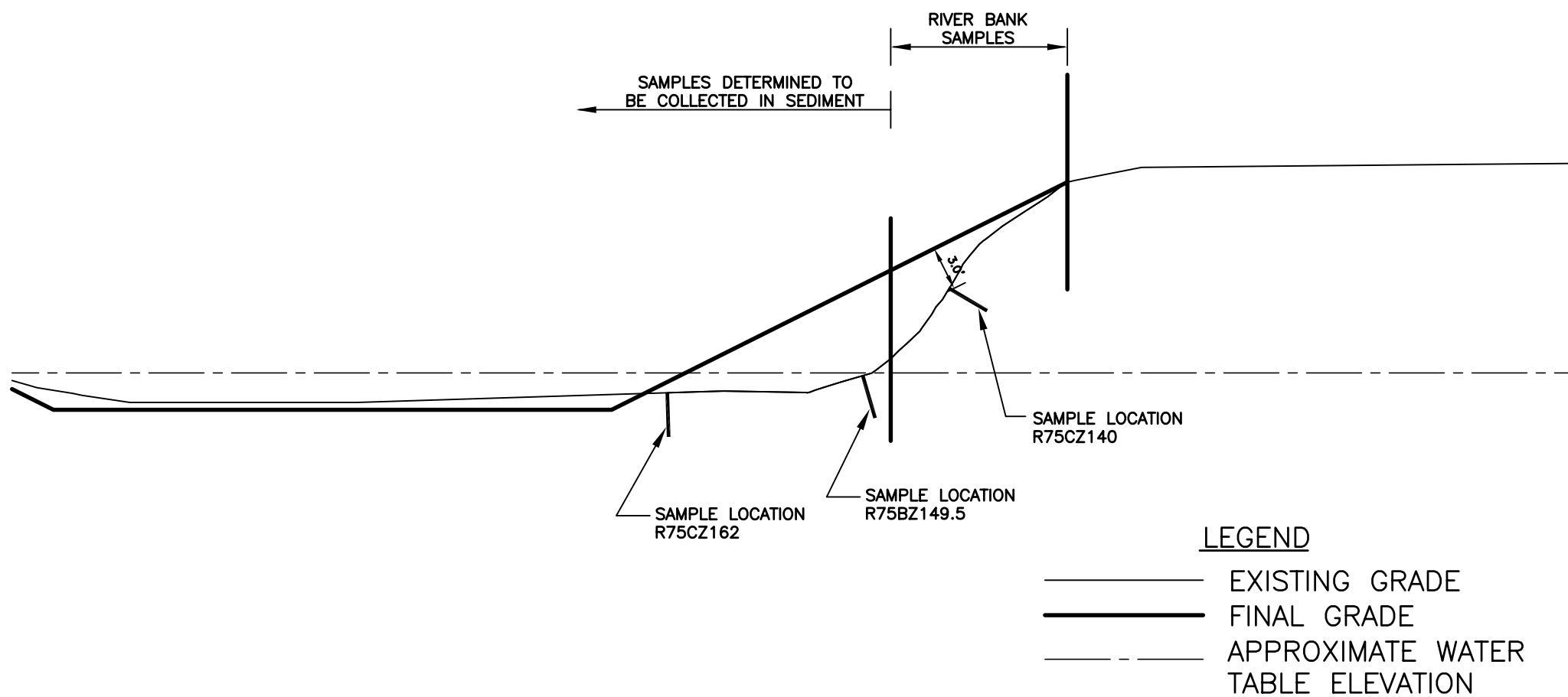
CONSTRUCTION STATION 550+50



CONSTRUCTION STATION 551+00



CONSTRUCTION STATION 551+50



CONSTRUCTION STATION 552+00

