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CONSULTANTS, INC.

VOLUME I OF II

SUPPLEMENTAL DESIGN REPORT
INDUSTRIAL DRAINAGEWAY REMEDIATION
KENTUCKY AVENUE WELLFIELD SITE
OPERABLE UNIT NO. 3

PREPARED FOR:

VIACOM INC.
11 ST AN WIX STREET
PITTSBURGH, PA 15222

PROJECT NO. 98245.30/02
APRIL 19,2001

339 Haymaker Road • Parkway Building • Suite 201 • Monroeville, PA 15146
(412) 373-5240 • FAX (412) 373-5242 • E-Mail: crc@cummingsriter.com

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April 19, 2001
Project No. 98245.30/02

Mr. Mark Purcell
U.S. Environmental Protection Agency

290 Broadway, 20th Floor
New York, NY 10007-1866

RE: TRANSMITTAL - SUPPLEMENTAL DESIGN REPORT
INDUSTRIAL DRAINAGEWAY - KENTUCKY AVENUE WELLFIELD SITE
HORSEHEADS, NEW YORK

Dear Mr. Purcell:

At the direction of Mr. Leo Brausch and on behalf of Viacom Inc., successor in interest to CBS Corporation, enclosed herewith are three copies of the Supplemental Design Report for the Industrial Drainageway Remediation project at the Kentucky Avenue Wellfield Superfund site. Data validation reports will be submitted under separate cover.

If you have any questions, please contact Mr. Leo Brausch, Viacom Inc., at (412) 642-3922.

Respectfully submitted,
Cummings/Riter Consultants, Inc.

William C-Smith,P.E.
Project Manager

WCS/cls

Enclosures

pc: Mr. Salvatore Priore - New York Department of Environmental Conservation
(five copies)
Mr. Leo Brausch - Viacom Inc.

339 Haymaker Road • Parkway Building • Suite 201 • Monroeville, PA 15146
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OPERABLE UNIT NO. 3

1.0 INTRODUCTION

Viacom Inc. (Viacom), successor in interest to CBS Corporation (CBS), retained Cummings/Riter Consultants, Inc. (Cummings/Riter) to design the remedial action (RA) for the Industrial Drainageway at the former Westinghouse Electric Corporation plant site in Horseheads, New York (Figure 1). This work is part of Operable Unit No. 3 for the Kentucky Avenue Wellfield Superfund site. This Supplemental Design Report for Industrial Drainageway Remediation was prepared in accordance with the Remedial Design (RD) Work Plan (Cummings/Riter, March 26, 1999), and the Statement of Work appended to the Consent Decree between CBS and the U.S. Environmental Protection Agency (USEPA, September 30,1997). The Consent Decree identifies the requirements for design and implementation of the selected remedy set forth in the Record of Decision (ROD) for Operable Unit No. 3 (USEPA, September 30,1996).

As specified in the RD Work Plan, this report provides the supplemental design investigation results, design criteria and basis of design, specifications, plans, and drawings to be used for contractor procurement and remedial construction for the excavation and off-site disposal of Industrial Drainageway sediment. This report contains the calculations and assumptions used in the design, and the schedule for implementation of the RA.

This report describes the major components of RD for the Industrial Drainageway sediments; however, two design issues are not yet addressed:

- Wetlands assessment and restoration, and
- Management of sediments exhibiting the characteristics of a hazardous waste under the Resource Conservation and Recovery Act (RCRA), if any, due to elevated concentrations of leachable metals.

Completion of the wetlands work needed to await suitable weather conditions that would allow for wetlands vegetation identification and, therefore, wetlands delineation. Under separate cover, Viacom will provide USEPA and the New York State Department of Environmental Conservation (NYSDEC) the Wetlands Assessment and Restoration Plan required as part of RD.

Pursuant to Paragraph 13b of the Consent Decree, Viacom is currently examining whether sediments exhibit the characteristics of a RCRA hazardous waste. In accordance with the RD Work Plan, Cummings/Riter is currently conducting toxicity characteristic leaching procedure (TCLP) testing of composite sediment samples. If a significant quantity of sediment is determined by this TCLP testing to be RCRA hazardous waste, Viacom may submit a "Materially Different Determination" as described in Paragraph 13b of the Consent Decree. The remainder of this Supplemental Design Report assumes that there is not a significant quantity of RCRA hazardous sediments, and those RCRA hazardous sediments, if any, will not require special on-site excavation or handling.

2.0 BASIS OF DESIGN

The design for the Industrial Drainageway RA is based on the results of the supplemental design investigation performed by Cummings/Riter in February 2001. The results of the systematic sampling and analysis performed during the supplemental design investigation were used to horizontally and vertically delineate sediment identified by the remedial investigation as exceeding the performance standard set forth in the ROD. This section provides the results of the supplemental design investigation and the basis for the design.

2.1 PERFORMANCE STANDARDS

As stated in the ROD, the remedial action objective (RAO) or performance standard for Industrial Drainageway sediment is to prevent exposure to polychlonnated biphenyls (PCBs) through fish consumption and direct contact with sediment. A RAO of 1.0 part per million (ppm) PCB (total) has been established to mitigate human health risks posed by sediment. The 1.0 ppm level is consistent with USEPA and NYSDEC *Technical and Administrative Guidance Memorandum* (TAGM) guidance for PCB cleanup levels in residential areas.

2.2 DRAINAGEWAY MAPPING

During the week of January 15, 2001, Cummings/Riter mapped and stationed the Industrial Drainageway and the area immediately adjacent to the Drainageway using a combination of global positioning system (GPS) and field measurement techniques. The channel of the Industrial Drainageway extends from the Chemung Street Outfall to Koppers Pond. In accordance with the Sampling, Monitoring, and Analysis Plan (Appendix A of Remedial Design Work Plan, Cummings/Riter, March 26,1999), the Drainageway was stationed along its approximately 2,300-foot length from the Chemung Street Outfall (Sta. 0+00) to Koppers Pond (Sta. 23+00) using a surveyor's tape. Each station location was staked, flagged, and marked with the appropriate station number. GPS was used to acquire topographic information and Drainageway alignment. In areas of dense vegetation, the Drainageway alignment was measured and referenced to other GPS located features. At each 50-foot station, the Drainageway bottom was profiled by measuring the depth of water along the cross-section. Figure 1 shows the topography, layout and stationing[1] in the vicinity of the Industrial Drainageway. Figure 2 shows the adjacent property owners and approximate property boundaries along the Industrial Drainageway.

2,3 SEDIMENT SAMPLING

Cummings/Riter performed sediment sampling during the week of February 18, 2001. Samples were collected at predetermined cross-sections at a maximum 100-foot spacing. Up to five sample locations were established at approximately each 100-foot stream cross-section and upstream and downstream of culverts: one from each channel bank and up to three sample locations in the channel bed. Samples were also taken at several sampling locations that have a history of flooding. Figure 3 shows the sampling stations and sampling locations. Sediment samples were collected continuously to a depth of up to three feet below ground surface (bgs) and an analytical sample was collected for each one-foot interval. At sampling locations where large obstructions were encountered, the sample crew moved the boring a few feet away from the original location. If the obstruction was still encountered after several attempts, then the hole was terminated.

Zebra Environmental Corp., of Niagara Falls, New York, collected the sediment samples using a variety of sampling methods. Initially, a two-inch inside diameter (I.D.) by four-foot long Macro Core (MC) sampler with a clean acetate liner was used. The MC sampler was hammered into the sediment and was removed very slowly. Due to the moisture content and softness of the sediment, sample recovery was poor. A sludge sampler in conjunction with a Large Bore (LB) sampler was then tried. A sludge sampler is a two-inch I.D. by two-foot steel tube that is pushed into the sediment and then slowly pulled out with the sample being held in place by vacuum. The sludge sampler was used to collect the zero to two-foot sample and the LB sampler was used to collect the two to four-foot sample. The 1-inch by 22-inch long LB sampler with a clean acetate liner was driven two feet into the sediment while it was closed so it did not collect a sample. It is then opened and driven the remaining distance to collect a deeper sample. This method worked better than the MC sampler did, but sample recovery was still poor. Finally, a hand auger was used to collect the sample. Despite the softness of the sediment, the hand auger was able to collect the entire sample. If an obstruction was encountered, a new

[1] Note that the stationing of the Industrial Drainageway has been revised between Sta. 11+50 and Sta. 23+00 because Sta. 11+50 was inadvertently skipped during the initial field mapping.

hole could be easily started. Sample tools were decontaminated between each of the sampling locations. Sampling and decontamination were performed under the observation of CDM Federal Corporation, the USEPA oversight contractor.

As the samples were being collected, a Cummings/Riter geologist completed a field log for the sampling location. Each field log contained the following:

- Project Name - Industrial Drainageway Sampling;
- Date collected - 2/##/01;
- Sampler's initials - CLN;
- Project number - 98245.30/01;
- Time collected;
- Rough sketch of sampling location;
- Sample I.D. numbers - SD-ID-##;
- Sediment description, including density, color, primary and secondary material, and moisture content;
- Sampling method;
- Compositing description;
- Sample volume and analysis;
- Number of containers;
- Laboratory and date lab received samples;
- Weather conditions; and
- Remarks and observations.

A laboratory sample was taken for each one-foot interval collected. The material for the sample was taken from the sampler and was placed in a disposable, aluminum pan. The material was then mixed with a clean trowel and homogenized. A four-ounce glass jar was labeled and filled with the sediment. Split samples were provided to USEPA as requested. The trowels were decontaminated in the same fashion as the samplers. Each sample jar had the following on the label:

- Kentucky Ave Wellfield OU3,
- Date and time of sample collection,
- Sampler's initials - CLN,
- Company name - CRC,
- Unique sample number - SD-ID-##,
- Preservative - None, and
- Analysis required - PCB.

After each sample was collected, the jar was wiped clean with a paper towel, placed in a bubble wrap bag, and contained in a cooler with ice.

In addition to sediment samples, Cummings/Riter collected quality assurance samples as a measure of analytical precision and as a check on the effectiveness of equipment decontamination procedures. One duplicate, one matrix spike/matrix spike duplicate (MS/MSD), and one aqueous field equipment blank were collected for every 20 samples collected. The MS/MSD samples were collected, along with and in the same manner as, the other sediment samples. The suffix MS/MSD was added to the respective sample number. The duplicates were blind duplicates and were assigned an arbitrary designation by the sampler. The rinse (field equipment) blanks were collected by pouring the laboratory-provided, deionized water over the sampler into a disposable pan containing a clean trowel. The water was then poured into the appropriate bottles. Table 1 summarizes the sediment samples and duplicates with respect to their sample locations.

2.4 SAMPLE RESULTS

A total of 263 sediment and bank soil samples were collected from 83 locations in and adjacent to the Industrial Drainageway. Samples were analyzed for PCBs. Sample collection was attempted to a minimum depth of three feet, with laboratory analysis on each one-foot interval. A few sample locations were terminated at a shallower depth due to refusal. At several sample locations, a three to four-foot sample was also collected. These samples were collected as a contingency, but were not analyzed because the holding time had expired.

Table 2 summarizes the PCB results. Samples exhibiting total PCB concentrations greater than 1 ppm are highlighted.

As shown in Table 2, Aroclors 1016, 1221, 1232, 1242, and 1248 were not detected in any samples. Aroclor 1254 was the predominant Aroclor detected. Aroclor 1254 was detected in 86 of 263 samples at concentrations greater than 1 ppm, with overall concentrations ranging from not detected to 53 ppm. Sample 215 is a duplicate of 214 with results being 1.1 ppm and 0.036 ppm, respectively.

Aroclor 1260 was detected in two samples (48 and 115). PCB 1260 was detected at a concentration of 0.030 ppm in Sample 115, and at a concentration of 1.1 ppm in Sample 48; however, the 1.1 ppm concentration was not confirmed by a duplicate sample of Sample 48 (47) at the same location, which had no detectable concentration of Aroclor 1260.

Excluding duplicates (three) and the two unconfirmed exceedances discussed above, a total of 81 samples exceeded PCB concentrations of 1 ppm.

The most common composition of the material which exceeded a PCB concentration of 1 ppm was a loose, black silt with occasional amounts of organic matter, sand, and gravel. Of the 81 samples exceeding 1 ppm, 56 samples were made up of this loose, black silt, 22 samples were made up of clay, and 3 samples were sand and gravel. The loose, black silt material is often underlain by a denser gray, black, or brown silt and clay mixture. The two materials can often be visually differentiated from each other. Soil sample collection reports are provided in Appendix A.

Table 3 summarizes the PCB sampling data for sediment and bank soils. Figures 4 through 8 show PCB concentrations, by depth, at each channel cross-section that was sampled.

3.0 DESIGN COMPONENTS

3.1 PREMOBILIZATION ACTIVITIES

3.1.1 Site Access

Viacom does not own or control the property on which the sediment removal project will be conducted. As shown on Figure 2, the area of the Industrial Drainageway from which sediments need to be removed includes properties owned by the following:

- David Young,
- Chemung County,
- Village of Horseheads,
- Norfolk & Southern Railway Corporation (Norfolk & Southern), formerly Consolidated Rail Corporation (Conrail), and
- Hardinge Brothers, Inc.

Viacom has secured the needed access agreement with Mr. Young and has requested access from the other parties. Viacom will continue its best efforts to secure the needed access in advance of contractor mobilization.

3.1.2 Permitting

Pursuant to Paragraph 8 of the Consent Decree, Viacom is not required to secure federal or state permits for the work conducted within or in close proximity to the areal extent of contamination. Cummings/Riter confirmed with the U.S. Army Corps of Engineers (Corps), Buffalo District, that the Corps would place no additional design requirement on the sediment removal project beyond those identified by USEPA and NYSDEC.

3.1.3 Off-Site Disposal Facility Identification

Prior to mobilization of the RA contractor, Viacom will identify off-site disposal facilities for the following classifications of sediments and bank soils removed from the Industrial Drainageway:

- Materials containing PCB concentrations of 50 ppm or greater and regulated under the Federal Toxic Substances Control Act (TSCA) and NYSDEC regulations as a hazardous waste;

- Matenals containing PCB concentrations above the RAO and subject to removal, but at concentrations less than 50 ppm; and

- Materials exhibiting the characteristic of a RCRA hazardous waste due to leachable metals concentrations.

As a practical matter, sediment exceeding 35 ppm PCBs will be classified for disposal purposes as a TSCA and New York State hazardous waste. Sediment with less than 35 ppm PCBs will be disposed of as non-hazardous waste in accordance with applicable USEPA and state regulations, provided that such materials do not exhibit characteristics of a hazardous waste due to elevated leachable metals concentrations. CWM Chemical Services, LLC, in Model City, New York is the likely candidate facility for TSCA and hazardous waste disposal. High Acres Landfill in East Rochester, New York is the likely candidate disposal facility for non-hazardous waste.

Prior to any off-site shipment, Viacom will provide to the USEPA project coordinator the names and locations of the disposal facilities selected by Viacom to receive TSCA, hazardous, and non-hazardous materials from the Industrial Drainageway. Prior to any off-site shipment of more than 10 cubic yards of waste material from the site to an out-of-state facility, written notification would be provided to the appropriate state environmental official in the receiving facility's state and to the USEPA project coordinator.

3.1.4 Health and Safety Planning

The contractor will be required to prepare a health and safety/contingency plan (HSCP) prior to mobilization. The HSCP will be reviewed by Viacom. The HSCP will include provisions for dust monitoring of the work zone to determine personal protective equipment requirements for on-site workers and perimeter air monitoring to protect public safety. The greatest risk to worker safety is working in a riparian environment with heavy construction equipment where the ground has low bearing capacity, and maneuverability will be difficult.

3.2 SITE SECURITY

Access to the Industrial Drainageway is currently unrestricted. Before RA activities begin, signs will be posted at the perimeter of the work area providing warnings against trespass. RA personnel will be on site during working hours on weekdays and will control access to the immediate work area. At the end of each workday, caution tape or high-visibility construction fencing will be placed around the perimeter of the work area, a chain will be hung across the vehicle entrances, and construction equipment will be secured for the night.

3.3 BY-PASS PUMPING

To facilitate sediment removal, the water flow in the Industrial Drainageway will be diverted around the work area. To accomplish this diversion, a temporary dam (e.g., wooden planks, inflatable bladder) will be installed to block the discharge of the Chemung Street Outfall. A second temporary dam is required near Sta. 1+80 to collect the flow from the small drainage swales that extend north and east of the Industrial Drainageway. Irrigation-type pumps (i.e., high-flow, low-head) will be used to pump the flow from upstream of these temporary dams to Koppers Pond, downstream of Sta. 23+00. The pump discharge pipe(s) will be outfitted with an energy dissipater to minimize local scour at the outlet.

Discharge records from the Cutler Hammer and Toshiba Outfalls indicate the quantity of water to be diverted is approximately 1,000 to 1,200 gallons per minute (gpm), with a maximum flow of approximately 2,000 gpm. Stream flow measurements were conducted during the supplemental design investigation. The RD Work Plan called for flow measurement using pressure transducers and data loggers; however, due to equipment problems, a manual gauging station was constructed. The gauging station was established at the discharge end of Culvert 1 (Sta. 2+50) and the depth of water was measured 11 times over a two-month period. The water velocity was measured initially. Knowing the diameter of the pipe (60 inches), velocity, and depth of water in the culvert, the flow rate was calculated. Based on these measurements the flow ranged from approximately 1,170 to 1,380 gpm (Appendix B). These values are consistent with discharge records for the outfall. The by-pass pumping system will be sized for flows between 1,000 and 5,000 gpm to provide excess pumping capacity.

A temporary dam will also be constructed immediately downstream of Sta. 23+00 to prevent backflow of water from Koppers Pond into the Drainageway. This dam may be constructed using sheet piling, wooden planks, or similar acceptable methods proposed by the RA contractor. Similarly, the RA contractor may elect to install a surface water cutoff along the right bank of the Drainageway, between approximate Sta. 20+50 and

23+00, to reduce inflow from the adjacent low-lying area into the Drainageway. Figure 9 shows the conceptual by-pass pumping plan; however, the RA contractor will be required to submit a by-pass pumping plan for approval.

3.4 EXCAVATION DELINEATION

The initial limits of sediment and bank soil to be excavated were established based on sample analytical results for PCBs and are approximated, in plan view, for various removal depths on Figures 10 and 11 as follows:

- Figure 10 - limits of removal between Sta. 0+00 and 10+00, and
- Figure 11 - limits of removal between Sta. 10+00 and 23+00.

Detailed limits of removal for each 100-foot cross-section are presented on Figures 12, 13, and 14. Figures 10 through 14 represent the estimated limits of removal. Actual removal limits will be based on a combination of analytical results and visual assessment of material composition (i.e., loose, black silt).

Based on the approximate limits depicted on the removal cross sections and using the average-end area method of calculation, the total volume of sediment and bank soil exceeding performance standards is estimated at 2,576 cubic yards (CY), of which approximately 97 CY exceed 35 ppm, which is the practical threshold for disposal as a TSCA and New York State hazardous waste. Approximately 370 CY of clean bank soil will be excavated to access impacted soils. These soils will be used to backfill the excavation. The volume calculation is presented in Appendix B.

Along the channel profile (i.e., in the direction of flow), sediment excavation will be continuous between stations where samples had concentrations of PCBs exceeding the performance standard. Excavation will terminate 25 feet beyond a station with samples exceeding the performance standard towards the nearest station where samples meet performance standards. In the lateral direction (i.e., transverse to flow), the limits of excavation were determined based on whether or not the sample(s) exceeding the performance standard were channel bank samples or sediment samples.

At most of the channel sample locations, sediment samples were collected from one location at three, one-foot depth intervals. At other sample stations, the stream was wider, necessitating the collection of sediment samples from two or more locations in the channel bed. For a given depth interval, where sediment sample PCB concentrations exceed the performance standard, the lateral limits of sediment excavation at a particular depth interval will terminate half-way to the adjacent sediment sample that meets the performance standard. If there is no adjacent sediment sample or the adjacent sediment sample does not meet the performance standard, excavation to the channel bank will be performed.

3.5 SEDIMENT AND SOIL REMOVAL

3.5.1 Sediment Removal

Sediment removal will begin near the Chemung Street Outfall and proceed downstream to Koppers Pond. Sediments will be removed from the open channel via excavator or vacuum pump and from culverts via vacuum pump or pressure washing.

The RA contractor will select the method(s) to be used for sediment removal. The preferred method will meet the following requirements:

- Allow for safe construction practices.
- Minimize removal of non-contaminated sediments and mixing of uncontaminated and contaminated materials.
- Allow for separate removal of materials that need to be managed for off-site disposal as TSCA and hazardous wastes.
- Minimize the disturbance of wetlands and wooded areas along the banks of the Drainageway.
- Minimize overall removal and off-site disposal costs.

A combination of pumping and excavation methods may be employed.

Sediments with free liquids, as determined from USEPA Method 9050 "Paint Filter Liquids Test," will need to be stabilized prior to land disposal. Stabilization may consist of dewatering (e.g., by drainage or filter pressing) or the addition and mixing of solidifying agents (e.g., Portland cement, fly ash, or kiln dust). Sediments that are pumped or vacuumed may be transported to the disposal facility in a slurry phase and stabilized at the disposal facility for land disposal. Alternatively, sediments may be stabilized on site prior to off-site transportation and land disposal. If sediments are stabilized on site, dewatered sediments will preferably be disposed of immediately following stabilization. Otherwise, sediments may be staged in rolloff containers or in a prepared area. Sediments that are staged for disposal will be covered with secured polyethylene sheeting.

3.5.2 **Channel Bank Excavation**

Excavation of the channel bank soils will be required where bank samples exceed the performance standard. If a bank sample meets the performance standard, sediment excavation will terminate at the adjacent bank sample location. If the bank sample location exceeds the performance standard, excavation will continue for a distance of two feet from the bank sample location as measured perpendicular to the channel. For cases where the bank sample exceeds the performance standard, but an adjacent sediment sample meets the performance standard, excavation of the bank will terminate at the edge of the channel. Figures 12 through 14 depict the limits of removal at each station with PCB results.

Direct loading of excavated bank material into transportation vehicles is the preferred operating method, but may not be feasible due to limited truck access or if the material contains free liquids (as determined by the USEPA Method 9050 "Paint Filter Liquids Test"). If the bank soil contains free liquids, the excavated bank material will be stabilized on site prior to off-site transportation and disposal. Stabilization methods will be as identified above for sediments. Stabilized bank materials will preferably be disposed of immediately following stabilization. Otherwise, stabilized materials will be staged in rolloff containers in a prepared area. Stockpiles will be covered with secured polyethylene sheeting.

3.6 ATTAINMENT DEMONSTRATION

Post-removal sediment/bank samples will be collected from both the excavation sidewalls and bottom for laboratory analysis to verify attainment of the performance standard. Sidewall samples will be collected at mid-height from zero to six inches in the direction of the sidewall (i.e., lateral direction). Bottom samples will be collected from a depth of zero to six inches at the base of the excavation.

Sidewall sample collection frequency will be based on square footage of the sidewall. Sidewall samples will be collected at a frequency of 1 sample for every 200 square feet of sidewall on each bank. Sediment bottom samples will be collected at an approximate frequency of 1 per 100 lineal feet of Drainageway. Where excavation of the bank is required, bottom samples along the bank will also be collected at an approximate frequency of 1 per 100 lineal feet of Drainageway.

Additional removal will be performed if a post-removal verification sample fails the applicable performance standard(s). If a post-removal bottom sample exceeds the performance standard, a minimum of six additional inches of soil will be removed from the area represented by the failed sample, and a new sample will be collected. The corners of the area to be re-excavated will be taken as the mid-points between the sample exceeding the performance standard and the adjacent samples meeting the performance standards.

For every additional two-foot depth increment that the excavation is lowered, sidewall samples will be collected. If a post-excavation sidewall sample fails to meet the performance standard(s), the mid-points between the failed sample and the nearest passing sample will be marked, and the excavation will be expanded laterally a minimum of one foot in the direction of the failed sample. Upon completion of the additional excavation, the new sidewall will be sampled at the frequency of 1 sample per 200 square feet.

3.7 LOAD-OUT AND TRANSPORTATION

Trucks will be staged on plastic sheeting during loading. The plastic sheeting and trucks will be broom swept to remove any material spilled during loading prior to truck departure. Trucks will be checked to ensure that they are properly tarped, manifested, and placarded, as required, prior to departure.

3.8 DEWATERING LIQUIDS

Liquids generated from on-site dewatering will be collected and treated to remove excess suspended solids and then discharged to Koppers Pond. Treatment will be provided by flocculation and sedimentation or by filtering.

3.9 AIR MONITORING

As part of the HSCP, a perimeter dust monitoring program will be conducted. The perimeter dust monitoring plan will include contingencies (i.e., soil wetting) should airborne levels of particulates exceed action levels. Dust is not expected to be a problem because of the wet nature of sediment removal.

3.10 CONSTRUCTION STAGING/SETUP AREA

A proposed construction staging/setup area has been designated on Figure 1. The setup area will be used for construction trailers, sediment dewatering, temporary sanitation facilities, truck staging, and storage of any necessary construction-related materials (e.g., approved backfill, fuel). If fuel is to be stored on site, a temporary secondary containment structure will be employed to contain potential leaks or spills.

3.11 EROSION AND SEDIMENTATION CONTROL

Sediment removal will be performed after damming the Drainageway, pumping standing water around the work area, and discharging downstream of the sediment removal area. The proposed locations of the temporary dam and discharge points are indicated on Figure 9. An energy dissipater will be constructed at the outlet end of the discharge hose to help prevent resuspension of sediment. Details of the energy dissipater are to be provided in the contractor's by-pass pumping plan.

The area disturbed by remediation activities will be lowered in elevation due to excavation, thereby containing precipitation and runon. Upon restoration of the disturbed area, the disturbed uplands area will be seeded with a permanent grass seed mix and mulched. Silt fence will be used as necessary around site staging areas. A silt fence detail has been provided on Figure 15.

3.12 DECONTAMINATION

Equipment decontamination will be required following the removal of impacted material prior to demobilization. In addition, equipment will be decontaminated prior to handling and placement of soil backfill. The contractor will be required to provide temporary decontamination facilities for construction equipment decontamination. It is anticipated that the structure will be placed in the construction staging area. A detail of the decontamination pad is shown on Figure 15. Decontamination liquids will be treated on site for removal of excess suspended solids and discharged to Koppers Pond.

3.13 BACKFILL MATERIAL

Following the removal of sediment exceeding the performance standards, the channel will be backfilled with six inches of suitable backfill (see Figure 15). Backfill will not be placed in areas where the remaining channel bottom is too soft to support the backfill. The backfill will consist of natural soils classified according to American Society for Testing of Materials (ASTM) D 2487 as any of the following: GW, GP, GM, SM, SW, SP, GC. The intent of backfilling the channel is to provide a granular substrate on the channel bottom favorable to benthic organisms.

Following the excavation of bank soil exceeding the performance standards, the excavation will be restored to approximate original elevations and grades with suitable backfill as shown on Figure 15. Backfill to within six inches of final grade will consist of natural soils classified according to ASTM D 2487 as any of the following: GW, GM, SM, SW, SP, GC, SC, ML, and CL. Unacceptable backfill materials include soils classified in ASTM D 2487 as MH, CH, OH, and OL; materials having a maximum particle size larger than eight inches; materials containing debris, roots, brush, sod, organic or frozen materials; and materials containing otherwise objectionable matter.

Material placed for the topmost six inches of backfill will be suitable topsoil, defined as selectively excavated natural, friable soil that is capable of producing grass or other vegetation. Topsoil will be reasonably free from underlying subsoil, clay lumps, objectionable weeds, litter, brush, or other material that may be harmful to plant growth or be a hindrance to grading, planting, or maintenance operations. Topsoil will not contain more than 5 percent by volume of particles larger than one inch in any dimension. Topsoil will contain between 1 and 20 percent organic matter as determined by loss on ignition in accordance with ASTM D 2974, and will have a pH of between 6 and 7.5. One sample for agronomic testing will be tested from each borrow source. If the pH or organic content are not within acceptable limits, the remedial construction contractor will be required to add soil amendments to achieve the specified requirements.

The contractor will be required to sample proposed backfill material for laboratory analytical testing. One representative grab sample will be collected from each off-site source of fill and analyzed for full Target Compound List/Target Analyte List (TCL/TAL) parameters. TCL/TAL results will be compared to recommended cleanup objectives presented in the NYSDEC TAGM on *Determination of Soil Cleanup Objectives and Cleanup Levels.* Only soils that meet these standards will be acceptable as fill. In this context, a "source" refers to a specific borrow pit stratum or location. Gravel or other granular materials with insufficient fine particles for laboratory analysis will not be sampled.

3.14 BACKFILL PLACEMENT AND COMPACTION

Bank backfill will be placed in loose lifts not to exceed 18 inches in thickness and compacted. Backfill will be tracked in during placement, but not compacted to a specific criterion. Each lift of suitable fill will be compacted with a minimum of four passes of appropriate spreading equipment. Topsoil will be compacted with a minimum of one pass of appropriate spreading equipment. Channel backfill will not be compacted.

3.15 SEEDING AND MULCHING

Following restoration of the bank areas to approximately original elevations and grades, the topsoil seedbed will be prepared with the necessary soil amendments and raked to loosen the surface and remove stones. Stones that are raked out will be used as channel backfill. The disturbed area will be fertilized, seeded, and mulched per the *New York Guidelines for Urban Erosion and Sediment Control, Standard and Specifications for Critical Area Seedings,* as follows:

SEED	**RATE (POUNDS/1,000 SQUARE FEET)**
Fertilizer 5-10-10, or equivalent	**14**
Empire birdsfoot trefoil or common white clover, and	**0.20**
Tall fescue and	**0.45**
Redtop or Ryegrass	**0.05** **0.10**
Mulch, small grain straw, secured with wood cellulose (hydroseed application) or mulch netting (manual application)	**90**

4.0 CONTRACTOR PROCUREMENT

The design documents will be used to procure a qualified remediation contractor. Qualifications of the selected contractor will include experience in hazardous waste excavation and loadout, decontamination procedures, and health and safety training in accordance with U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) regulations under 29 Code of Federal Regulations (CFR) 1910.120.

Discussions with three RA contractors will proceed concurrently with USEPA and NYSDEC review of the Supplemental Design Report in an effort to expedite procurement and field mobilization.

5.0 ANCILLARY PROJECT PLANS

Ancillary project plans, previously approved by USEPA for use during former runoff basin and Disposal Area F remedial activities, have been revised for the work associated with the Industrial Drainageway remediation. These plans include the Construction Quality Assurance Project Plan (Appendix C), the Sampling, Analysis and Monitoring Plan (Appendix D), and the Remedial Action Quality Assurance Project Plan (Appendix E).

6.0 SCHEDULE

The target schedule for RA implementation of the Industrial Drainageway is as follows:

TASK/DELIVERABLE	PLANNED COMPLETION
Wetlands Assessment and Restoration Plan	June 18, 2001
"Materially Different Determination" (if necessary)	June 18, 2001
Final Supplemental Design Report	June 18,2001
Supplemental Remedial Action Work Plan	August 17,2001
Contracting	August 17,2001
Field Construction Start	August 31, 2001
Field Construction End	December 31,2001
Remedial Construction Report	February 28, 2002

These dates are contingent upon timely USEPA and NYSDEC review of submittals. Viacom will endeavor to expedite the schedule to minimize construction work during adverse weather.

REFERENCES

Cummings/Riter Consultants, Inc., March 26,1999, "Remedial Design Work Plan, Kentucky Avenue Wellfield Site, Operable Unit No. 3."

New York State Department of Environmental Conservation, Technical Administrative Guidance Memorandum (TAGM), *Determination of Soil Cleanup Objectives and Cleanup Levels.*, HWR-94-4046, January 24,1994

U.S. Environmental Protection Agency, Region II, September 30,1996, Record of Decision, Kentucky Avenue Wellfield, Operable Unit 3, Horseheads, Chemung County, New York.

Urban Soil Erosion and Sediment Control Committee, New York Guidelines for Urban Erosion and Sediment Control, Standard, and Specifications for Critical Area Seedings, April 1997.

USEPA, Statement of Work, Appended to Consent Decree, September 30, 1999.

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TABLES

TABLE 1
SEDIMENT SAMPLE LOCATIONS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Sampling Location	Sample Identification	Sample Depth (ft)
Sampling Point 1	SD-ID-1	Otol
	SD-ID-2	lto2
	SD-ID-3	2 to 3
	SD-ID-4[00]	3 to 4
Sampling Point 2	SD-ID-5	Otol
	SD-ID-6	lto2
	SD-ID-7	2 to 3
	SD-ID-8[a]	3 to 4
Sampling Point 3	SD-ID-9	Otol
	SD-ID-10	lto2
	SD-ID-11	2 to 3
	SD-ID-12[a]	3 to 4
Sampling Point 4	SD-ID-13	Otol
	SD-ID-14	lto2
	SD-DD-15	2 to 3
	SD-ID-16[a]	3 to 4
Sampling Point 5	SD-ID-17	Otol
	SD-ID-18	lto2
	SD-ID-19	2 to 3
	SD-ID-20[a]	3 to 4
Sampling Point 6	SD-ID-21	Otol
	SD-ID-22	lto2
	SD-ID-23	2 to 3
	SD-ID-24[a]	3 to 4
Sampling Point 7	SD-ID-25	Otol
	SD-ID-26	lto2
	SD-ID-27	2 to 3
	SD-ID-28[a]	3 to 4
Sampling Point 8	SD-ID-29	Otol
	SD-ID-30	lto2
	SD-ED-31	2 to 3
	SD-ID-32[a]	3 to 4
	SD-ID-33 (Dup of SD-ID-29)	Otol
Sampling Point 9	SD-ID-34	Otol
	SD-ID-35	lto2
	SD-ID-36	2 to 3
	SD-ID-37[a]	3 to 4

TABLE 1
SEDIMENT SAMPLE LOCATIONS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Sampling Location	Sample Identification	Sample Depth (ft)
Sampling Point 10	SD-ID-38	Otol
	SD-ID-39	lto2
	SD-ID-40	2 to 3
	SD-ID-41[a]	3 to 4
Sampling Point 11	SD-ID-42	Otol
	SD-ID-43	1 to2
	SD-ID-44	2 to 3
	SD-ID-45[a]	3 to 4
Sampling Point 12	SD-ID-46	Otol
	SD-ID-47	lto2
	SD-ID-48 (Dup of SD-ID-47)	lto2
	SD-ID-49	2 to 3
	SD-ID-50[00]	3 to 4
Sampling Point 13	SD-ID-51	Otol
	SD-ID-52	lto2
	SD-ID-53	2 to 3
	SD-ID-54[00]	3 to 4
Sampling Point 14	SD-ID-55	Otol
	SD-ID-56	lto3
Sampling Point 15[00]	SD-ID-59	Otol
	SD-ID-58	lto2
	SD-ID-60	2 to 3
Sampling Point 16[00]	SD-ID-57	Otol
	SD-ID-61	lto3
Sampling Point 17	SD-ID-62	Otol
	SD-ID-63 (Dup of SD-ID-62)	Otol
	SD-ID-64	lto2
	SD-ID-65	2 to 3
Sampling Point 18	SD-ID-66	Otol
	SD-ID-67	lto2
	SD-ID-68	2 to 3
Sampling Point 19	SD-ID-69	Otol
	SD-ID-70	lto2
	SD-ID-71	2 to 3
Sampling Point 20	SD-ID-72	Otol
	SD-ID-73	lto2
	SD-ID-74 (Dup of SD-ID-73)	lto2
	SD-ID-75	2 to 3

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TABLE 1
SEDIMENT SAMPLE LOCATIONS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Sampling Location	Sample Identification	Sample Depth (ft)
Sampling Point 21	SD-ID-76	Otol
	SD-ID-77	lto2
	SD-ID-78	2 to 3
Sampling Point 22	SD-ID-79	Otol
	SD-ID-80	lto2
	SD-ID-81	2 to 3
Sampling Point 23	SD-ID-82	Otol
	SD-ID-83	lto2
	SD-ID-84	2 to 3
Sampling Point 24	SD-ID-85	Otol
	SD-ID-86	lto2
	SD-ID-87	2 to 3
Sampling Point 25	SD-ID-88	Otol
	SD-ID-89	lto2
	SD-ID-90	2 to 3
Sampling Point 26	SD-ID-91	Otol
	SD-ID-92	lto2
	SD-ID-93	2 to 3
Sampling Point 27	SD-ID-94	Otol
	SD-ID-95	lto2
	SD-ID-96	2 to 3
	SD-ID-97 (Dup of SD-ID-96)	2 to 3
Sampling Point 28	SD-ID-98	0 to .25
	SD-ID-99	.25 to 1
	SD-ID-100	lto2
Sampling Point 29	SD-ID-101	Otol
	SD-ID-102	lto2
	SD-ID-103	2 to 3
Sampling Point 30	SD-ID-104	Otol
	SD-ID-105	lto2
	SD-ID-106	2 to 3
Sampling Point 31	SD-ID-107	Otol
	SD-ID-108	lto2
	SD-ID-109	2 to 3
Sampling Point 32	SD-ID-110	Otol
	SD-ID-111	lto2
	SD-ID-112	2 to 3
Sampling Point 33	SD-ID-113	Otol
	SD-ID-114	lto2
	SD-ID-115	2 to 2.5

TABLE 1
SEDIMENT SAMPLE LOCATIONS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Sampling Location	Sample Identification	Sample Depth (ft)
Sampling Point 34	SD-ID-116	Otol
	SD-ID-117	1 to 1.5
	SD-ID-118	1.5 to 2
Sampling Point 35	SD-ID-119	Otol
	SD-ID-120	lto2
	SD-ID-121	2 to 2.5
Sampling Point 36	SD-ID-122	Otol
	SD-ID-123	lto2
	SD-ID-124	2 to 3
Sampling Point 37	SD-ID-125	Otol
	SD-ID-126 (Dup of SD-ID-125)	Otol
Sampling Point 38	SD-ID-127	Otol
	SD-ID-128	lto2
	SD-ID-129	2 to 3
Sampling Point 39	SD-ID-130	Otol
	SD-ID-131	lto2
	SD-ID-132	2 to 3
Sampling Point 40	SD-ID-133	Otol
	SD-ID-134	lto2
	SD-ID-135	2 to 3
Sampling Point 41	SD-ID-136	Otol
	SD-ID-137	lto2
	SD-ID-138	2 to 3
Sampling Point 42	SD-ID-139	Otol
	SD-ID-140	lto2
	SD-ID-141	2 to 3
	SD-ID-142 (Dup of SD-ID-141)	2 to 3
Sampling Point 43	SD-ID-143	Otol
	SD-ID-144	lto2
	SD-ID-145	2 to 3
Sampling Point 44	SD-ID-146	Otol
	SD-ID-147	lto2
	SD-ID-148	2 to 3
Sampling Point 45	SD-ID-149	Otol
	SD-ID-150	lto2
	SD-ID-151	2 to 3
Sampling Point 46	SD-ID-152	Otol
	SD-ID-153	lto2
	SD-ID-154	2 to 3

TABLE 1
SEDIMENT SAMPLE LOCATIONS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Sampling Location	Sample Identification	Sample Depth (ft)
Sampling Point 47	SD-ID-155	Otol
	SD-ID-156	lto2
	SD-ID-157	2 to 3
Sampling Point 48	SD-ID-158	Otol
	SD-ID-159 (Dup of SD-ID-158)	Otol
	SD-ID-160	lto2
	SD-ID-161	2 to 3
Sampling Point 49	SD-ID-162	Otol
	SD-ID-163	lto2
	SD-ID-164	2 to 3
Sampling Point 50	SD-ID-165	Otol
	SD-ID-166	lto2
	SD-ID-167	2 to 3
Sampling Point 51	SD-ID-168	Otol
	SD-ID-169	lto2
	SD-ID-170	2 to 3
Sampling Point 52	SD-ID-171	Otol
	SD-ID-172	lto2
	SD-ID-173	2 to 3
Sampling Point 53	SD-ID-174	Otol
	SD-ID-175 (Dup of SD-ID-174)	Otol
	SD-ID-176	lto2
	SD-ID-177	2 to 3
Sampling Point 54	SD-ID-178	Otol
	SD-ID-179	lto2
	SD-ID-180	2 to 3
Sampling Point 55	SD-ID-181	Otol
	SD-ID-182	lto2
	SD-ID-183	2 to 3
Sampling Point 56	SD-ID-184	Otol
	SD-ID-185	lto2
	SD-ID-186	2 to 3
Sampling Point 57	SD-ID-187	Otol
	SD-ID-188	lto2
	SD-ID-189	2 to 3
Sampling Point 58	SD-ID-190	Otol
	SD-ID-191	lto2
	SD-ID-192	2 to 3

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TABLE 1
SEDIMENT SAMPLE LOCATIONS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Sampling Location	Sample Identification	Sample Depth (ft)
Sampling Point 59	SD-ID-193	Otol
	SD-ID-194	lto2
	SD-ID-195	2 to 3
Sampling Point 60	SD-DD-196	Otol
	SD-ID-197	lto2
	SD-ID-198 (Dup of SD-ID-197)	lto2
	SD-ID-199	2 to 3
Sampling Point 61	SD-ID-200	Otol
	SD-ID-201	lto2
Sampling Point 62	SD-ID-202	Otol
	SD-ID-203	lto2
	SD-ID-204	2 to 3
Sampling Point 63	SD-ID-205	Otol
	SD-ID-206	lto2
	SD-ID-207	2 to 3
Sampling Point 64	SD-ID-208	Otol
	SD-ID-209	lto2
Sampling Point 65	SD-ID-210	Otol
	SD-ID-211	lto2
	SD-ID-212	2 to 3
Sampling Point 66	SD-ID-213	Otol
	SD-ID-214	lto2
	SD-ID-215 (Dup of SD-ID-214)	lto2
Sampling Point 67	SD-ID-216	Otol
	SD-ID-217	lto2
Sampling Point 68	SD-ID-218	Otol
	SD-ID-219	lto2
	SD-ID-220	2 to 3
Sampling Point 69[(c)]	SD-ID-220B	Otol
	SD-ID-221	lto2
	SD-ID-222	2 to 3
Sampling Point 70	SD-ID-223	Otol
	SD-ID-224 (Dup of SD-ID-223)	Otol
	SD-ID-225	lto2
	SD-ID-226	2 to 3
Sampling Point 71	SD-ID-227	Otol
	SD-ID-228	lto2
	SD-ID-229	2 to 3

TABLE 1
SEDIMENT SAMPLE LOCATIONS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Sampling Location	Sample Identification	Sample Depth (ft)
Sampling Point 72	SD-ID-230 SD-ID-231 SD-ID-232	Otol lto2 2 to 3
Sampling Point 73	SD-ID-233	Otol
Sampling Point 74	SD-ID-234 SD-ID-235 SD-ID-236	Otol lto2 2 to 3
Sampling Point 75	SD-ID-237 SD-ID-238 SD-ID-239	Otol lto2 2 to 3
Sampling Point 76	SD-ID-240 SD-ID-241 (Dup of SD-ID-240) SD-ID-242	Otol Otol lto2
Sampling Point 77	SD-ID-243 SD-ID-244 SD-ID-245	Otol lto2 2 to 3
Sampling Point 78	SD-ID-246 SD-ID-247 SD-ID-248	Otol lto2 2 to 3
Sampling Point 79	SD-ID-249 SD-ID-250 SD-ID-251	Otol lto2 2 to 3
Sampling Point 80	SD-ID-252 SD-ID-253 SD-ID-254	Otol lto2 2 to 3
Sampling Point 81	SD-ID-255 SD-ID-256 SD-ID-257 (Dup of SD-ID-256) SD-ID-258	Otol lto2 lto2 2 to 3
Sampling Point 82	SD-ED-259 SD-ID-260 SD-ID-261	Otol lto2 2 to 3
Sampling Point 83	SD-ID-262 SD-ID-263	Otol lto2

a. Contingency sample. Not analyzed.
b. Numbers are out of order due to drillers working on two holes at once.
c. Inadvertent labeling of two bottles as SD-ID-220, therefore the second one labeled as SD-ID-220B.

TABLE 2
SEDIMENT SAMPLE ANALYTICAL RESULTS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Station No.	Sample Point	Sample Depth (ft)	Sample Type	Sample ID. No.	Detection Limit ug/kg*1*	Aroclor 1016 ug/kg	Aroclor 1221 ug/kg	Aroclor 1232 ug/kg	Aroclor 1242 ug/kg	Aroclor 1248 ug/kg	Aroclor 1254 ug/kg	Aroclor 1260 ug/kg
Sample Date: 2/19/01												
23+00	1	0 - 1	Bank	SD-ID-1	89	ND W	ND	ND	ND	ND	390	ND
		1 - 2	Bank	SD-ID-2	75	ND	ND	ND	ND	ND	900	ND
		2 - 3	Bank	SD-ID-3	100	ND	ND	ND	ND	ND	460	ND
23+00	2	0 - 1	Sediment	SD-ID-5	90	ND	ND	ND	ND	ND	500	ND
		1 - 2	Sediment	SD-ID-6	99	ND	ND	ND	ND	ND	290	ND
		2 - 3	Sediment	SD-ID-7	53	ND	ND	ND	ND	ND	110	ND
23+00	3	0 - 1	Sediment	SD-ID-9	160	ND	ND	ND	ND	ND	170	ND
		1 - 2	Sediment	SD-ID-10	93	ND	ND	ND	ND	ND	490	ND
		2 - 3	Sediment	SD-ID-11	100	ND	ND	ND	ND	ND	3600 tc)	ND
23+00	4	0 - 1	Bank	SD-ID-13	110	ND	ND	ND	ND	ND	250	ND
		1 - 2	Bank	SD-ID-14	60	ND	ND	ND	ND	ND	1300	ND
		2 - 3	Bank	SD-ID-15	50	ND	ND	ND	ND	ND	4 3 / *	ND
22+00	5	0 - 1	Bank	SD-ID-17	110	ND	ND	ND	ND	ND	240	ND
		1 - 2	Bank	SD-ID-18	100	ND	ND	ND	ND	ND	520	ND
		2 - 3	Bank	SD-ID-19	70	ND	ND	ND	ND	ND	46 J	ND
	6	0 - 1	Sediment	SD-ID-21	200	ND	ND	ND	ND	ND	320	ND
iHfeo		1 - 2	Sediment	SD-1D-22	91	ND	ND	ND	ND	ND	330	ND
(		2 - 3	Sediment	SD-ID-23	73	ND	ND	ND	ND	ND	340	ND
22+00	7	0 - 1	Bank	SD-ID-25	57	ND	ND	ND	ND	ND	420	ND
		1 - 2	Bank	SD-ID-26	44	ND	ND	ND	ND	ND	47	ND
		2 - 3	Bank	SD-ID-27	61	ND	ND	ND	ND	ND	1300	ND
Sample Date: 2/20/01												
21+00	8	0 - 1	Bank	SD-ID-29	48	ND	ND	ND	ND	ND	260	ND
		1 - 2	Bank	SD-ID-30	49	ND	ND	ND	ND	ND	190	ND
		2 - 3	Bank	SD-ID-31	42	ND	ND	ND	ND	ND	88	ND
		0 - 1	Bank	SD-ID-33	52	ND	ND	ND	ND	ND	190	ND
21+00	9	0 - 1	Sediment	SD-ID-34	130	ND	ND	ND	ND	ND	470	ND
		1 - 2	Sediment	SD-ID-35	47	ND	ND	ND	ND	ND	77	ND
		2 - 3	Sediment	SD-ID-36	39	ND	ND	ND	ND	ND	22 J	ND
21+00	10	0 - 1	Bank	SD-ID-38	47	ND	ND	ND	ND	ND	150	ND
		1 - 2	Bank	SD-ID-39	41	ND	ND	ND	ND	ND	110	ND
		2 - 3	Bank	SD-ID-40	41	ND	ND	ND	ND	ND	ND	ND
20+00	11	0 - 1	Bank	SD-ID-42	49	ND	ND	ND	ND	ND	950	ND
		1 - 2	Bank	SD-ID-43	51	ND	ND	ND	ND	ND	250	ND
		2 - 3	Bank	SD-ID-44	38	ND	ND	ND	ND	ND	170	ND

TABLE 2
SEDIMENT SAMPLE ANALYTICAL RESULTS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

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Station No.	Sample Point	Sample Depth (ft)	Sample Type	Sample ID. No.	Detection Limit ug/kg(w)	Aroclor 1016 ug/kg	Aroclor 1221 ug/kg	Aroclor 1232 ug/kg	Aroclor 1242 ug/kg	Aroclor 1248 ug/kg	Aroclor 1254 ug/kg	Aroclor 1260 ug/kg
Sample Dale: 2/20/01												
20+00	12	0 - 1	Sediment	SD-ID-46	170	**ND**	**ND**	**ND**	**ND**	**ND**	710	ND
		1-2	Sediment	SD-ID-47	51	**ND**	**ND**	**ND**	**ND**	**ND**	550	ND
		1 - 2	Sediment	SD-ID-48	59	**ND**	**ND**	**ND**	**ND**	**ND**	590	1100
		2 - 3	Sediment	SD-ID-49	51	**ND**	**ND**	**ND**	**ND**	**ND**	650	ND
20+00	13	**0 - 1**	Bank	SD-ID-51	43	**ND**	**ND**	**ND**	**ND**	**ND**	140	ND
		1-2	Bank	SD-ID-52	44	**ND**	**ND**	**ND**	**ND**	**ND**	170	ND
		2 - 3	Bank	SD-ID-53	40	**ND**	**ND**	**ND**	**ND**	**ND**	96	ND
19+00	14	0 - 1	Bank	SD-ID-55	39	**ND**	**ND**	**ND**	**ND**	**ND**	19 **J**	ND
		1-3	Bank	SD-ID-56	39	**ND**	**ND**	**ND**	**ND**	**ND**	12J	ND
19+00	15	0 - 1	Sediment	SD-ID-59	84	**ND**	**ND**	**ND**	**ND**	**ND**	450	ND
		1-2	Sediment	SD-ID-58	49	**ND**	**ND**	**ND**	**ND**	**ND**	120	ND
		2 - 3	Sediment	SD-ID-60	49	**ND**	**ND**	**ND**	**ND**	**ND**	280	ND
19+00	16	0 - 1	Bank	SD-ID-57	140	**ND**	**ND**	**ND**	**ND**	**ND**	650	ND
		1-3	Bank	SD-ID-61	62	**ND**	**ND**	**ND**	**ND**	**ND**	190	ND
18+00	17	0 - 1	Bank	SD-ID-62	58	**ND**	**ND**	**ND**	**ND**	**ND**	820	ND
		0 - 1	Bank	SD-ID-63	57	**ND**	**ND**	**ND**	**ND**	**ND**	820	ND
		1-2	Bank	SD-ID-64	280	**ND**	**ND**	**ND**	**ND**	**ND**	**4100**	ND
		2 - 3	Bank	SD-ID-65	60	**ND**	**ND**	**ND**	**ND**	**ND**	130	ND
18+00	18	0 - 1	Sediment	SD-ID-66	83	**ND**	**ND**	**ND**	**ND**	**ND**	870	ND
		1 - 2	Sediment	SD-ID-67	60	**ND**	**ND**	**ND**	**ND**	**ND**	570	ND
		2 - 3	Sediment	SD-ID-68	44	**ND**	**ND**	**ND**	**ND**	**ND**	34 **J**	ND
18+00	19	0 - 1	Bank	SD-ID-69	55	**ND**	**ND**	**ND**	**ND**	**ND**	240	ND
		1-2	Bank	SD-ID-70	44	**ND**	**ND**	**ND**	**ND**	**ND**	19 **J**	ND
		2 - 3	Bank	SD-ID-71	41	**ND**	**ND**	**ND**	**ND**	**ND**	11 **J**	ND
17+00	20	0 - 1	Bank	SD-ID-72	78	**ND**	**ND**	**ND**	**ND**	**ND**	**1400**	ND
		1-2	Bank	SD-ID-73	69	**ND**	**ND**	**ND**	**ND**	**ND**	**1100**	ND
		1 - 2	Bank	SD-ID-74	73	**ND**	**ND**	**ND**	**ND**	**ND**	**2500**	ND
		2 - 3	Bank	SD-ID-75	49	**ND**	**ND**	**ND**	**ND**	**ND**	83	ND
17+00	21	0 - 1	Sediment	SD-ID-76	41	**ND**	**ND**	**ND**	**ND**	**ND**	**1400**	ND
		1-2	Sediment	SD-ID-77	53	**ND**	**ND**	**ND**	**ND**	**ND**	260	ND
		2 - 3	Sediment	SD-ID-78	37	**ND**	**ND**	**ND**	**ND**	**ND**	82	ND
17+00	22	0 - 1	Bank	SD-ID-79	59	**ND**	**ND**	**ND**	**ND**	**ND**	**1800**	ND
		1 - 2	Bank	SD-ID-80	670	**ND**	**ND**	**ND**	**ND**	**ND**	**12000**	ND
		2 - 3	Bank	SD-ID-81	42	**ND**	**ND**	**ND**	**ND**	**ND**	220	ND
N/A(e	23	0 - 1	Bank	SD-ID-82	60	**ND**	**ND**	**ND**	**ND**	**ND**	560	ND
		1-2	Bank	SD-ID-83	1200	**ND**	**ND**	**ND**	**ND**	**ND**	**13000**	ND
		2 - 3	Bank	SD-ID-84	54	**ND**	**ND**	**ND**	**ND**	**ND**	690	ND

TABLE 2
SEDIMENT SAMPLE ANALYTICAL RESULTS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Statioo No.	Sample Point	Sample Depth (ft)	Sample Type	Sample ID. No.	Detection Limit ug/kg(,)	Aroclor 1016 ug/kg	Aroclor 1221 ug/kg	Aroclor 1232 ug/kg	Aroclor 1242 ug/kg	Aroclor 1248 ug/kg	Aroclor 1254 ug/kg	Aroclor 1260 ug/kg
Sample, Vate: 2/21/01												
16+00	24	0- 1	Bank	SD-ID-85	40	ND	**ND**	ND	**ND**	**ND**	150	ND
		1-2	Bank	SD-ID-86	48	ND	**ND**	ND	**ND**	**ND**	460	ND
		2-3	Bank	SD-ID-87	38	ND	**ND**	ND	**ND**	**ND**	190	ND
16+00	25	0-1	Sediment	SD-ID-88	52	ND	**ND**	ND	**ND**	**ND**	140	ND
		1-2	Sediment	SD-ID-89	46	ND	**ND**	ND	**ND**	**ND**	140	ND
		2-3	Sediment	SD-ID-90	41	ND	**ND**	ND	**ND**	**ND**	**93**	ND
16+00	26	0-1	Bank	SD-ID-91	48	ND	**ND**	ND	**ND**	**ND**	140	ND
		1-2	Bank	SD-ID-92	41	ND	**ND**	ND	**ND**	**ND**	91	ND
		2-3	Bank	SD-ID-93	39	ND	**ND**	ND	**ND**	**ND**	180	ND
Sample iDate: 2/21/01												
N/A[c]	27	0- 1	Sediment	SD-ID-94	44	ND	**ND**	ND	**ND**	**ND**	15 **J**	ND
		1-2	Sediment	SD-ID-95	49	ND	**ND**	ND	**ND**	**ND**	19 **J**	ND
		2-3	Sediment	SD-ID-96	43	ND	**ND**	ND	**ND**	**ND**	**23 J**	ND
		2-3	Sediment	SD-ID-97	50	ND	**ND**	ND	**ND**	**ND**	18 **J**	ND
N/A[e]	28	0-.25	Sediment	SD-ID-98	65	ND	**ND**	ND	**ND**	**ND**	**ND**	ND
		.25-1	Sediment	SD-ID-99	43	ND	**ND**	ND	**ND**	**ND**	**ND**	ND
		1-2	Sediment	SD-ID-100	43	ND	**ND**	ND	**ND**	**ND**	14 **J**	ND
^ + 4 2	29	0-1	Bank	SD-ID-101	110	ND	**ND**	ND	**ND**	**ND**	**2000**	ND
		1-2	Bank	SD-ID-102	52	ND	**ND**	ND	**ND**	**ND**	180	ND
		2-3	Bank	SD-ID-103	47	ND	**ND**	ND	**ND**	**ND**	**62**	ND
15+42	30	0-1	Sediment	SD-ID-104	250	ND	**ND**	ND	**ND**	**ND**	**3100**	ND
		1-2	Sediment	SD-ID-105	53	ND	**ND**	ND	**ND**	**ND**	180	ND
		2-3	Sediment	SD-ID-106	49	ND	**ND**	ND	**ND**	**ND**	89	ND
14+80	31	0-1	Bank	SD-ID-107	67	ND	**ND**	ND	**ND**	**ND**	520	ND
		1-2	Bank	SD-ID-108	59	ND	**ND**	ND	**ND**	**ND**	68	ND
		2-3	Bank	SD-ID-109	47	ND	**ND**	ND	**ND**	**ND**	150	ND
14+50	32	0-1	Sediment	SD-ID-110	55	ND	**ND**	ND	**ND**	**ND**	**27 J**	ND
		1-2	Sediment	SD-ID-111	39	ND	**ND**	ND	**ND**	**ND**	**6J**	ND
		2-3	Sediment	SD-ID-112	47	ND	**ND**	ND	**ND**	**ND**	14J	ND
13+70	33	0-1	Bank	SD-ID-113	51	ND	**ND**	ND	**ND**	**ND**	16J	ND
		1-2	Bank	SD-ID-114	43	ND	**ND**	ND	**ND**	**ND**	**ND**	ND
		2-2.5	Bank	SD-ID-115	45	ND	**ND**	ND	**ND**	**ND**	**ND**	30 J
14+50	34	0-1	Bank	SD-ID-116	44	ND	**ND**	ND	**ND**	**ND**	**28 J**	ND
		1-1.5	Bank	SD-ID-117	43	ND	**ND**	ND	**ND**	**ND**	**26 J**	ND
		1.5-2	Bank	SD-ID-118	40	ND	**ND**	ND	**ND**	**ND**	**ND**	ND
14+50	35	0-1	Sediment	SD-ID-119	1600	ND	**ND**	ND	**ND**	**ND**	**14000**	ND
		1 -2	Sediment	SD-ID-120	100	ND	**ND**	ND	**ND**	**ND**	**1100**	ND
		2-2.5	Sediment	SD-ID-121	44	ND	**ND**	ND	**ND**	**ND**	610	ND

TABLE 2
SEDIMENT SAMPLE ANALYTICAL RESULTS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Station No.	Sample Point	Sample Depth (ft)	Sample Type	Sample ID. No.	Detection Limit ug/kg[w]	Aroclor 1016 ug/kg	Aroclor 1221 ug/kg	Aroclor 1232 ug/kg	Aroclor 1242 ug/kg	Aroclor 1248 ug/kg	Aroclor 1254 ug/kg	Aroclor 1260 ug/kg
Sample. Date: 2/21/01												
14+50	36	0-1	Sediment	SD-ID-122	330	ND	ND	ND	ND	ND	**4100**	ND
		1-2	Sediment	SD-ID-123	620	ND	ND	ND	ND	ND	**5400**	ND
		2-3	Sediment	SD-ID-124	1200	ND	ND	ND	ND	ND	**12000**	ND
14+50	37	0-1	Bank	SD-ID-125	38	ND	ND	ND	ND	ND	**23 J**	ND
		0-1	Bank	SD-ID-126	39	ND	ND	ND	ND	ND	**20 J**	ND
13+50	38	0-1	Bank	SD-ID-127	43	ND	ND	ND	ND	ND	340	ND
		1-2	Bank	SD-ID-128	53	ND	ND	ND	ND	ND	530	ND
		2-3	Bank	SD-ID-129	3600	ND	ND	ND	ND	ND	**42000**	ND
13+50	39	0-1	Sediment	SD-ID-130	1400	ND	ND	ND	ND	ND	**11000**	ND
		1-2	Sediment	SD-ID-131	1800	ND	ND	ND	ND	ND	**17000**	ND
		2-3	Sediment	SD-ID-132	41	ND	ND	ND	ND	ND	670	ND
13+50	40	0-1	Sediment	SD-ID-133	62	ND	ND	ND	ND	ND	280	ND
		1-2	Sediment	SD-ID-134	200	ND	ND	ND	ND	ND	**2300**	ND
		2-3	Sediment	SD-ID-135	43	ND	ND	ND	ND	ND	**440**	ND
13+50	41	0-1	Bank	SD-ID-136	48	ND	ND	ND	ND	ND	**22 J**	ND
		1-2	Bank	SD-ID-137	44	ND	ND	ND	ND	ND	**ND**	ND
		2-3	Bank	SD-ID-138	40	ND	ND	ND	ND	ND	**ND**	ND
• P 5 0	42	0-1	Bank	SD-ID-139	59	ND	ND	ND	ND	ND	510	ND
		1-2	Bank	SD-ID-140	100	ND	ND	ND	ND	ND	**1300**	ND
		2-3	Bank	SD-ID-141	40	ND	ND	ND	ND	ND	220	ND
		2-3	Bank	SD-ID-142	42	ND	ND	ND	ND	ND	290	ND
12+50	43	0-1	Sediment	SD-ID-143	77	ND	ND	ND	ND	ND	560	ND
		1-2	Sediment	SD-ID-144	210	ND	ND	ND	ND	ND	**2400**	ND
		2-3	Sediment	SD-ID-145	1400	ND	ND	ND	ND	ND	**15000**	ND
12+50	44	0-1	Bank	SD-ID-146	60	ND	ND	ND	ND	ND	720	ND
		1-2	Bank	SD-ID-147	60	ND	ND	ND	ND	ND	940	ND
		2-3	Bank	SD-ID-148	490	ND	ND	ND	ND	ND	**5100**	ND
11+50	45	0-1	Bank	SD-ID-149	44	ND	ND	ND	ND	ND	360	ND
		1-2	Bank	SD-ID-150	45	ND	ND	ND	ND	ND	170	ND
		2-3	Bank	SD-ID-151	42	ND	ND	ND	ND	ND	67	ND
11+50	46	0-1	Sediment	SD-ID-152	57	ND	ND	ND	ND	ND	350	ND
		1-2	Sediment	SD-ID-153	52	ND	ND	ND	ND	ND	230	ND
		2-3	Sediment	SD-ID-154	50	ND	ND	ND	ND	ND	880	ND
11+50	47	0-1	Bank	SD-ID-155	3100	ND	ND	ND	ND	ND	**27000**	ND
		1-2	Bank	SD-ID-156	180	ND	ND	ND	ND	ND	**2400**	ND
		2-3	Bank	SD-ID-157	3600	ND	ND	ND	ND	ND	**31000**	ND

TABLE 2
SEDIMENT SAMPLE ANALYTICAL RESULTS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Station No.	**Sample Point**	**Sample Depth (ft)**	**Sample Type**	**Sample ID. No.**	**Detection Limit ug/kg**[w]	**Aroclor 1016 ug/kg**	**Aroclor 1221 ug/kg**	**Aroclor 1232 ug/kg**	**Aroclor 1242 ug/kg**	**Aroclor 1248 ug/kg**	**Aroclor 1254 ug/kg**	**Aroclor 1260 ug/kg**
Sample. Date: 2/22/01												
10+50	48	0 - 1	Bank	SD-ID-158	63	**ND**	**ND**	**ND**	**ND**	**ND**	490	ND
		0 - 1	Bank	SD-ID-159	61	**ND**	**ND**	**ND**	**ND**	**ND**	310	ND
		1 - 2	Bank	SD-ID-160	170	**ND**	**ND**	**ND**	**ND**	**ND**	**1700**	ND
		2 - 3	Bank	SD-ID-161	570	**ND**	**ND**	**ND**	**ND**	**ND**	**5600**	ND
10+50	49	0 - 1	Sediment	SD-ID-162	56	**ND**	**ND**	**ND**	**ND**	**ND**	340	**ND**
		1-2	Sediment	SD-ID-163	66	**ND**	**ND**	**ND**	**ND**	**ND**	500	**ND**
		2 - 3	Sediment	SD-ID-164	45	**ND**	**ND**	**ND**	**ND**	**ND**	460	**ND**
10+50	50	0 - 1	Bank	SD-ID-165	190	**ND**	**ND**	**ND**	**ND**	**ND**	**1900**	ND
		1 - 2	Bank	SD-ID-166	55	**ND**	**ND**	**ND**	**ND**	**ND**	850	ND
		2 - 3	Bank	SD-ID-167	2000	**ND**	**ND**	**ND**	**ND**	**ND**	**14000**	ND
9+50	51	**0 - 1**	Bank	SD-ID-168	68	**ND**	**ND**	**ND**	**ND**	**ND**	310	ND
		1-2	Bank	SD-ID-169	320	**ND**	**ND**	**ND**	**ND**	**ND**	**3200**	ND
		2 - 3	Bank	SD-ID-170	460	**ND**	**ND**	**ND**	**ND**	**ND**	**4300**	ND
9+50	52	0 - 1	Sediment	SD-ID-171	60	**ND**	**ND**	**ND**	**ND**	**ND**	320	ND
		1 - 2	Sediment	SD-ID-172	13000	**ND**	**ND**	**ND**	**ND**	**ND**	**37000**	ND
		2 - 3	Sediment	SD-ID-173	1200	**ND**	**ND**	**ND**	**ND**	**ND**	**13000**	ND
^		0 - 1	Bank	SD-ID-174	70	**ND**	**ND**	**ND**	**ND**	**ND**	200	ND
W	53	0 - 1	Bank	SD-ID-175	66	**ND**	**ND**	**ND**	**ND**	**ND**	170	ND
		1 - 2	Bank	SD-ID-176	170	**ND**	**ND**	**ND**	**ND**	**ND**	**2500**	ND
		2 - 3	Bank	SD-ID-177	310	**ND**	**ND**	**ND**	**ND**	**ND**	**6200**	ND
8+50	54	0 - 1	Bank	SD-ID-178	59	**ND**	**ND**	**ND**	**ND**	**ND**	140	ND
		1 - 2	Bank	SD-ID-179	260	**ND**	**ND**	**ND**	**ND**	**ND**	**4300**	ND
		2 - 3	Bank	SD-ID-180	350	**ND**	**ND**	**ND**	**ND**	**ND**	**4800**	ND
8+50	55	0 - 1	Sediment	SD-ID-181	58	**ND**	**ND**	**ND**	**ND**	**ND**	310	ND
		1 - 2	Sediment	SD-ID-182	1300	**ND**	**ND**	**ND**	**ND**	**ND**	**18000**	ND
		2 - 3	Sediment	SD-ID-183	230	**ND**	**ND**	**ND**	**ND**	**ND**	**3200**	ND
8+50	56	0 - 1	Bank	SD-ID-184	64	**ND**	**ND**	**ND**	**ND**	**ND**	220	ND
		1 - 2	Bank	SD-ID-185	58	**ND**	**ND**	**ND**	**ND**	**ND**	660	ND
		2 - 3	Bank	SD-ID-186	360	**ND**	**ND**	**ND**	**ND**	**ND**	**5100**	ND
7+50	57	**0 - 1**	Bank	SD-ID-187	59	**ND**	**ND**	**ND**	**ND**	**ND**	530	ND
		1-2	Bank	SD-ID-188	65	**ND**	**ND**	**ND**	**ND**	**ND**	**1400**	ND
		2 - 3	Bank	SD-ID-189	290	**ND**	**ND**	**ND**	**ND**	**ND**	**6300**	**ND**
7+50	58	0 - 1	Sediment	SD-ID-190	1500	**ND**	**ND**	**ND**	**ND**	**ND**	**24000**	ND
		1 - 2	Sediment	SD-ID-191	120	**ND**	**ND**	**ND**	**ND**	**ND**	**2000**	ND
		2 - 3	Sediment	SD-ID-192	83	**ND**	**ND**	**ND**	**ND**	**ND**	**1400**	ND
7+50	59	0 - 1	Bank	SD-ID-193	67	**ND**	**ND**	**ND**	**ND**	**ND**	350	ND
		1-2	Bank	SD-ID-194	59	**ND**	**ND**	**ND**	**ND**	**ND**	90	ND
		2 - 3	Bank	SD-ID-195	1900	**ND**	**ND**	**ND**	**ND**	**ND**	**12000**	ND
6+50	60	**0 - 1**	Bank	SD-ID-196	65	**ND**	**ND**	**ND**	**ND**	**ND**	250	ND

TABLE 2
SEDIMENT SAMPLE ANALYTICAL RESULTS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Station No.	Sample Point	Sample Depth (ft)	Sample Type	Sample ID. No.	Detection Limit ug/kg^	Arodor 1016 ug/kg	Arodor 1221 ug/kg	Arodor 1232 ug/kg	Arodor 1242 ug/kg	Arodor 1248 ug/kg	Arodor 1254 ug/kg	Arodor 1260 ug/kg
Sample. Date: 2/22/01												
6+50	60	**1 - 2**	Bank	SD-ID-197	66	ND	ND	ND	ND	ND	150	ND
		1 - 2	Bank	SD-ID-198	68	ND	ND	ND	ND	ND	210	ND
		2 - 3	Bank	SD-ID-199	1300	ND	ND	ND	ND	ND	**17000**	ND
6+50	61	0 - 1	Sediment	SD-ID-200	270	ND	ND	ND	ND	ND	**3400**	ND
		1-2	Sediment	SD-ID-201	52	ND	ND	ND	ND	ND	800	ND
6+50	62	0 - 1	Bank	SD-ID-202	73	ND	ND	ND	ND	ND	230	ND
		1 - 2	Bank	SD-ID-203	240	ND	ND	ND	ND	ND	**3800**	ND
		2 - 3	Bank	SD-ID-204	47	ND	ND	ND	ND	ND	230	ND
5+50	63	0 - 1	Bank	SD-ID-205	51	ND	ND	ND	ND	ND	630	ND
		1 - 2	Bank	SD-ID-206	50	ND	ND	ND	ND	ND	970	ND
		2 - 3	Bank	SD-ID-207	43	ND	ND	ND	ND	ND	200	ND
5+50	64	0 - 1	Sediment	SD-ID-208	160	ND	ND	ND	ND	ND	**2200**	ND
		1-2	Sediment	SD-ID-209	1100	ND	ND	ND	ND	ND	**11000**	ND
5+50	65	0 - 1	Bank	SD-ID-210	60	ND	ND	ND	ND	ND	180	ND
		1-2	Bank	SD-ID-211	57	ND	ND	ND	ND	ND	120	ND
		2 - 3	Bank	SD-ID-212	58	ND	ND	ND	ND	ND	1000	ND
[illegible]	66	0 - 1	Bank	SD-ID-213	61	ND	ND	ND	ND	ND	110	ND
		1-2	Bank	SD-ID-214	45	ND	ND	ND	ND	ND	1100	ND
		1-2	Bank	SD-ID-215	47	ND	ND	ND	ND	ND	360	ND
4+50	67	0 - 1	Sediment	SD-ID-216	220	ND	ND	ND	ND	ND	**3000**	ND
		1 - 2	Sediment	SD-ID-217	550	ND	ND	ND	ND	ND	**7100**	ND
4+50	68	0 - 1	Bank	SD-ID-218	57	ND	ND	ND	ND	ND	**74**	ND
		1 - 2	Bank	SD-ID-219	59	ND	ND	ND	ND	ND	96	ND
		2 - 3	Bank	SD-ID-220	55	ND	ND	ND	ND	ND	370	ND
3+50	69	0 - 1	Bank	SD-ID-220B	59	ND	ND	ND	ND	ND	100	ND
		1 - 2	Bank	SD-ID-221	360	ND	ND	ND	ND	ND	**4800**	ND
		2 - 3	Bank	SD-ID-222	48	ND	ND	ND	ND	ND	**1100**	ND
3+50	70	0 - 1	Sediment	SD-ID-223	58	ND	ND	ND	ND	ND	**1700**	ND
		0 - 1	Sediment	SD-ID-224	60	ND	ND	ND	ND	ND	**2000**	ND
		1 - 2	Sediment	SD-ID-225	58	ND	ND	ND	ND	ND	**2100**	ND
		2 - 3	Sediment	SD-ID-226	34	ND	ND	ND	ND	ND	370	ND
3+50	71	0 - 1	Bank	SD-ID-227	66	ND	ND	ND	ND	ND	160	ND
		1-2	Bank	SD-ID-228	1100	ND	ND	ND	ND	ND	**14000**	ND
		2 - 3	Bank	SD-ID-229	41	ND	ND	ND	ND	ND	**1100**	ND
2+50	72	0 - 1	Bank	SD-ID-230	57	ND	ND	ND	ND	ND	510	ND
		1-2	Bank	SD-ID-231	45	ND	ND	ND	ND	ND	250	ND
		2 - 3	Bank	SD-ID-232	43	ND	ND	ND	ND	ND	400	ND
2+50	73	0 - 1	Sediment	SD-ID-233	540	ND	ND	ND	ND	ND	**3600**	ND

TABLE 2
SEDIMENT SAMPLE ANALYTICAL RESULTS
INDUSTRIAL DRAINAGEWAY
HORSEHEADS, NEW YORK

Station No.	Sample Point	Sample Depth (ft)	Sample Type	Sample ID. No.	Detection Limit ug/kg[a]	Aroclor 1016 ug/kg	Aroclor 1221 ug/kg	Aroclor 1232 ug/kg	Aroclor 1242 ug/kg	Aroclor 1248 ug/kg	Aroclor 1254 ug/kg	Aroclor 1260 ug/kg
Sample Date: 2/22/01												
2+50	74	0 - 1	Bank	SD-ID-234	61	ND	ND	ND	ND	ND	320	ND
		1 - 2	Bank	SD-ID-235	1200	ND	ND	ND	ND	ND	**8700**	ND
		2 - 3	Bank	SD-ID-236	2300	ND	ND	ND	ND	ND	**14000**	ND
Sample Date: 2/23/01												
1+80	75	0 - 1	Bank	SD-ID-237	160	ND	ND	ND	ND	ND	**1500**	ND
		1 - 2	Bank	SD-ID-238	160	ND	ND	ND	ND	ND	**1600**	ND
		2 - 3	Bank	SD-ID-239	38	ND	ND	ND	ND	ND	260	ND
1+80	76	0 - 1	Sediment	SD-ID-240	1000	ND	ND	ND	ND	ND	**8700**	ND
		0 - 1	Sediment	SD-ID-241	260	ND	ND	ND	ND	ND	**2900**	ND
		1 - 2	Sediment	SD-ID-242	3200	ND	ND	ND	ND	ND	**22000**	ND
1+80	77	0 - 1	Bank	SD-ID-243	270	ND	ND	ND	ND	ND	**3000**	ND
		1 - 2	Bank	SD-ID-244	3100	ND	ND	ND	ND	ND	**21000**	ND
		2 - 3	Bank	SD-ID-245	190	ND	ND	ND	ND	ND	**1500**	ND
1+00	78	0 - 1	Bank	SD-ID-246	50	ND	ND	ND	ND	ND	690	ND
		1 - 2	Bank	SD-ID-247	130	ND	ND	ND	ND	ND	**1300**	ND
		2 - 3	Bank	SD-ID-248	2800	ND	ND	ND	ND	ND	**25000**	ND
	79	0 - 1	Sediment	SD-ID-249	260	ND	ND	ND	ND	ND	**2800**	ND
		1 - 2	Sediment	SD-ID-250	6100	ND	ND	ND	ND	ND	**53000**	ND
		2 - 3	Sediment	SD-ID-251	2800	ND	ND	ND	ND	ND	**16000**	ND
1+00	80	0 - 1	Bank	SD-ID-252	51	ND	ND	ND	ND	ND	540	ND
		1 - 2	Bank	SD-ID-253	300	ND	ND	ND	ND	ND	**3500**	ND
		2 - 3	Bank	SD-ID-254	2500	ND	ND	ND	ND	ND	**22000**	ND
0+00	81	0 - 1	Bank	SD-ID-255	38	ND	ND	ND	ND	ND	84	ND
		1 - 2	Bank	SD-ID-256	50	ND	ND	ND	ND	ND	400	ND
		1 - 2	Bank	SD-ID-257	50	ND	ND	ND	ND	ND	500	ND
		2 - 3	Bank	SD-ID-258	57	ND	ND	ND	ND	ND	710	ND
0+00	82	0 - 1	Sediment	SD-ID-259	49	ND	ND	ND	ND	ND	280	ND
		1 - 2	Sediment	SD-ID-260	38	ND	ND	ND	ND	ND	65	ND
		2 - 3	Sediment	SD-ID-261	41	ND	ND	ND	ND	ND	140	ND
0+00	83	0 - 1	Bank	SD-ID-262	160	ND	ND	ND	ND	ND	**1700**	ND
		1 - 2	Bank	SD-ID-263	250	ND	ND	ND	ND	ND	**3200**	ND

a. "ug/kg" is micrograms per kilogram, or parts per billion.
b. "ND" = value is less than the detection limit.
c. Highlighted concentration values indicate total PCB concentration that exceeds the RAO of 1000 micrograms per kilogram, or parts per billion.
d. "J" = value is estimated; result is less than the reporting limit.
e. See Figure 3 for sample location.

CO + o o	-^ + o o	o> + o o	en + 4* ro	4k + OI o	eo + en o	ro + en o	->. + en o	o + en o	CD + en o	00 + OI O	-*J + en o	0) + en o	en + tn o	•lk. + en o	eo + en o	ro + en o	->. + 00 o	->. + O O	o + o o ,	09 Sr o 3

00 ^1 o · 4k o o · 4k o	CO ^ 4k 4k · o o 1A o o o ro CO o en O) o CO en o	CO 4k o CO ro o eo o ro 4k O O O to 4k o o ro ro o o	CO o o o 00 tn o to tn o o	ro CD o o ro 00 o o ro CO o	O r+ o » 72
en o ro CD o 4k o	-fc en ro IO 00 o o o o lo o o ro CO o	en o o CO -J o o CO © o o ro © o o 00 o o -* © o o	J-J 1A o o ro o o	ro ro © o o en to o o SL CO en	? ro *
CO 4k CO ro CO CO	00 CD Oi o JO O o o CD ^J o 4k o en o o o 00 CO o	*. O) o CO © o o to KI o o 4k o o	eo o	^ en o o o 4k O	ro o to »
00 M 4k o ^ 4k o oo o o ^ -> en o 4k o	M o o o ro oo ro ro CO -IS- o ro ro OI o -•J ro o to o) o IO -4 o o o	4k o o CD o o CO o 00 en 4k O ro ro o en CO o CO OI o ro en o ro CO o O) CO o 00 o	O -NI 4k o o -»• OI o en -»• o eo to o	en o o CO o o CD CD O en lk o 00 4k o -k -o. o o	O S ^ »
4k o O -* CD 00 o O ^& O O A CD o CD	00 o ro CD en CD o ro ro o CO o o CO 4k o -k ^J o ro *». o o	*J o 00 en o eo ro o ro en o 4k CO o o CD O) o o 4k O o CO o -i 00 o CO 00 o o CO ^J o o ro o	^1 eo O co CD 4k 00 o o 4k o o ro en o 00 *J o o	en o o ro o o to O o CO en o o 4k en o to ro O	I-t- o ro 3>
w o -* -* 00 to ro M O -»• CD O 00 o	CD IO ro o * KI o o o ro o ro en en en 1A o O en -J eo ^ o o o	en en o 4k O o 4k CO o o en ro o o 4k 00 o o en o o o> ro to o o ro o o o o CO o ro o o ro o o	CO ^1 o ^ o o ^ -k o o 4w o o 4k o o	ro o> o tn o o ro en o o ro ro o o ^i o	ro B to ;*

0) ro a 3 ro 3 <-*

•a to 3 JT

0Q o o

0> c 3 3 > o -n D

52 >

> m m o w

< 5 o < * o 00 0) >

a a >

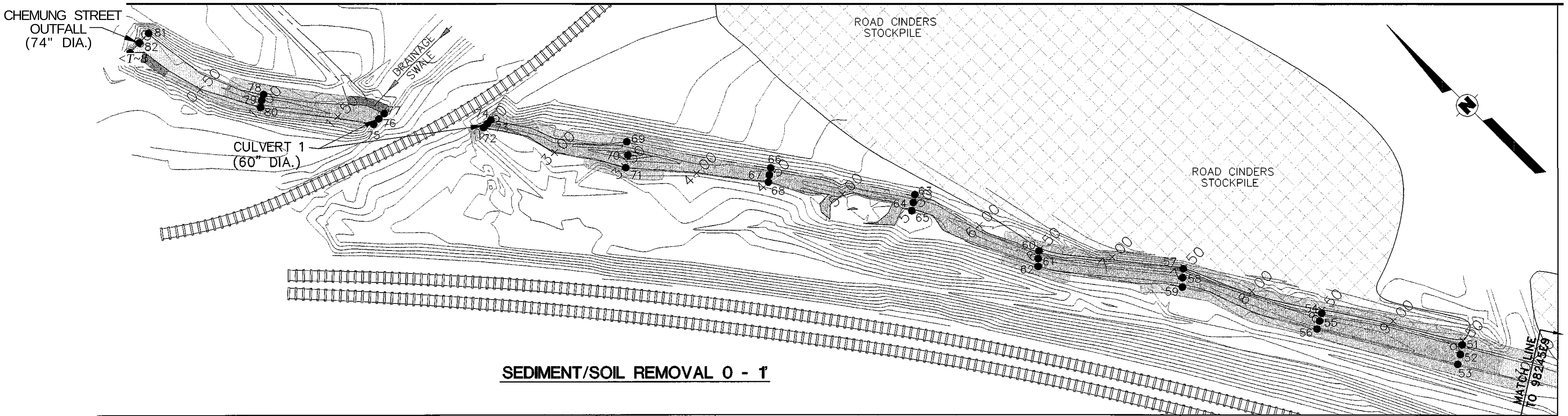
TABLE 3
SUMMARY OF INDUSTRIAL DRAINAGEWAY PCB SAMPLING DATA
HORSEHEADS, NEW YORK

Station	Sediment			Bank		
	0 to 1 ft	1 to 2 ft	2 to 3 ft	0 to 1ft	1 to 2 ft	2 to 3 ft
19+00	450	120	280	650	190	
				19	12	
20 + 00	710	570	650	140	170	**96**
				950	250	170
21 + 00	470	77	22	150	110	21
				225	190	**88**
22 + 00	320	330	340	420	47	**1,300**
				240	520	**46**
23 + 00	170	490	**3,600**	250	**1,300**	**43**
	550	290	110	390	900	460

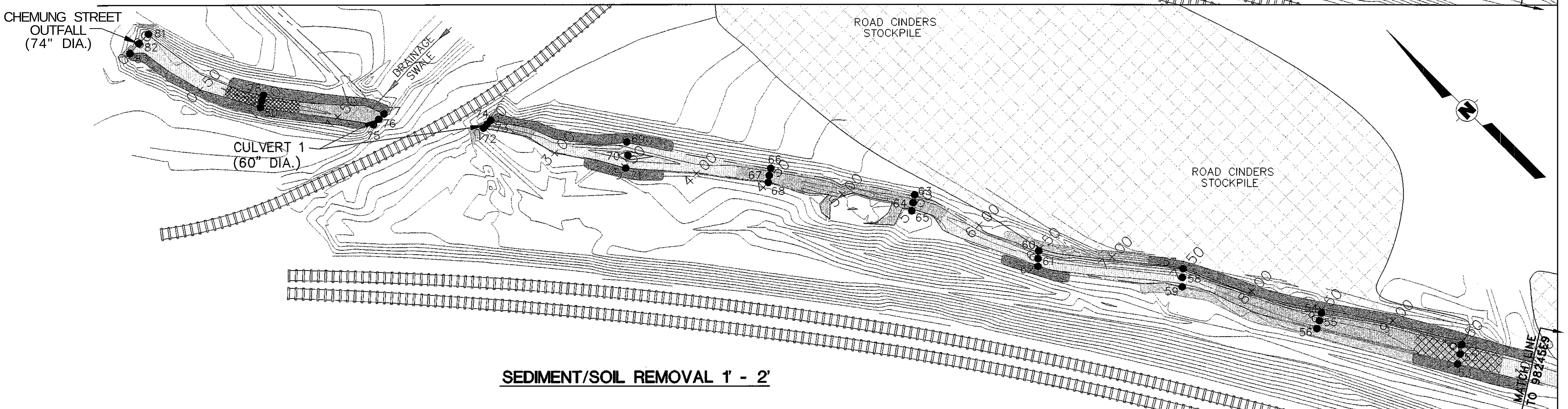
a. Red values indicate PCB concentrations over 35 parts per million which will be handled as TSCA and New York State hazardous waste.

TI
G)
C
X
m
CO

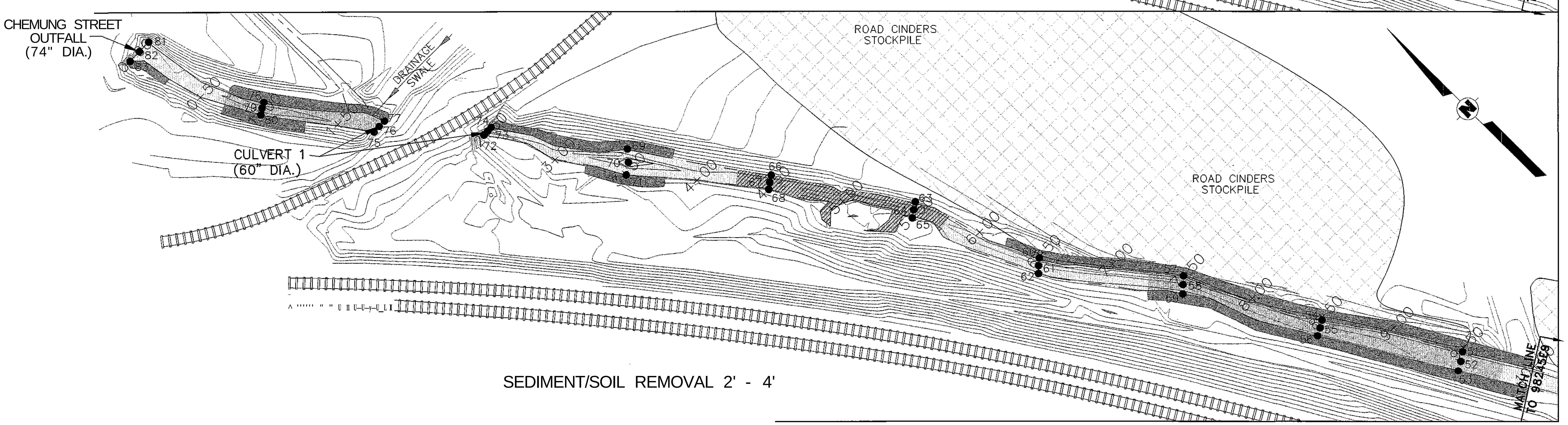
FIGURES



SEDIMENT/SOIL REMOVAL 0 - 1'



SEDIMENT/SOIL REMOVAL 1' - 2'



SEDIMENT/SOIL REMOVAL 2' - 4'

LEGEND

19+50 STATION NO. AS MEASURED FROM FROM CHEMUNG STREET OUTFALL

SEDIMENT TO BE REMOVED

BANK SOIL TO BE REMOVED

CLEAN BANK SOIL TO BE REMOVED TO ACCESS IMPACTED SOIL. CLEAN SOIL SHALL BE REPLACED UPON REMOVAL OF IMPACTED SOIL.

MATERIAL TO BE DISPOSED OF AS TSCA AND NEW YORK STATE HAZARDOUS WASTE (PCB CONCENTRATION >35 ppm)

EXCAVATION TO 3 FEET

NOTES:

1. SEDIMENT IN CULVERTS 1 AND 2 SHALL BE REMOVED AND TESTED BY THE CONTRACTOR TO DETERMINE DISPOSITION.
2. IN AREAS OF SEDIMENT REMOVAL WHERE A FIRM BOTTOM EXISTS 6 INCHES OF SOIL SHALL BE PLACED IN THE DRAINAGE WAY FOLLOWING REMOVAL ACTIVITIES. ACCEPTABLE SOILS SHALL INCLUDE THOSE SOILS DESCRIBED ON FIGURE 15. AREAS OF DRAINAGEWAY BACKFILL (i.e., FIRM BOTTOM) SHALL BE DETERMINED IN THE FIELD BASED ON MUTUAL CONCURRENCE BY VIACOM AND USEPA.
3. IN AREAS OF BANK SOIL REMOVAL, CLEAN SOIL SHALL BE PLACED TO APPROXIMATE GRADES PRIOR TO REMOVAL ACTIVITIES. ACCEPTABLE SOIL SHALL INCLUDE THOSE SOILS SOILS DESCRIBED ON FIGURE 15.
4. LIMITS OF BANK SOIL REMOVAL ARE NOT TO SCALE. SEE FIGURE 12 THROUGH 14 FOR LATERAL BANK SOIL REMOVAL LIMITS.

SCALE

40 0 40 80 FEET

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

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CORPORATE HEADQUARTERS
339 Haymaker Road
Parkway Building, Suite 201
Monroeville, PA 15146
(412) 373-5240
Fax: (412) 373-5242

FIGURE 10

SEDIMENT/SOIL REMOVAL PLAN
STA. 0+00 TO 10+00

KENTUCKY AVENUE WELLFIELD SITE OU3
HORSEHEADS, NEW YORK

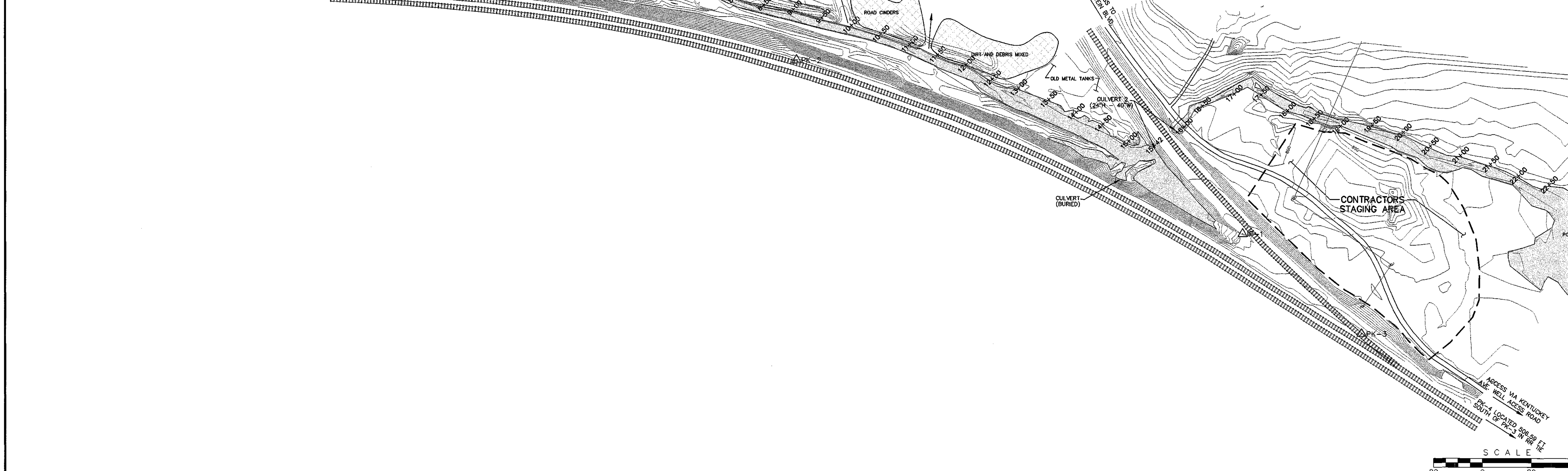
PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

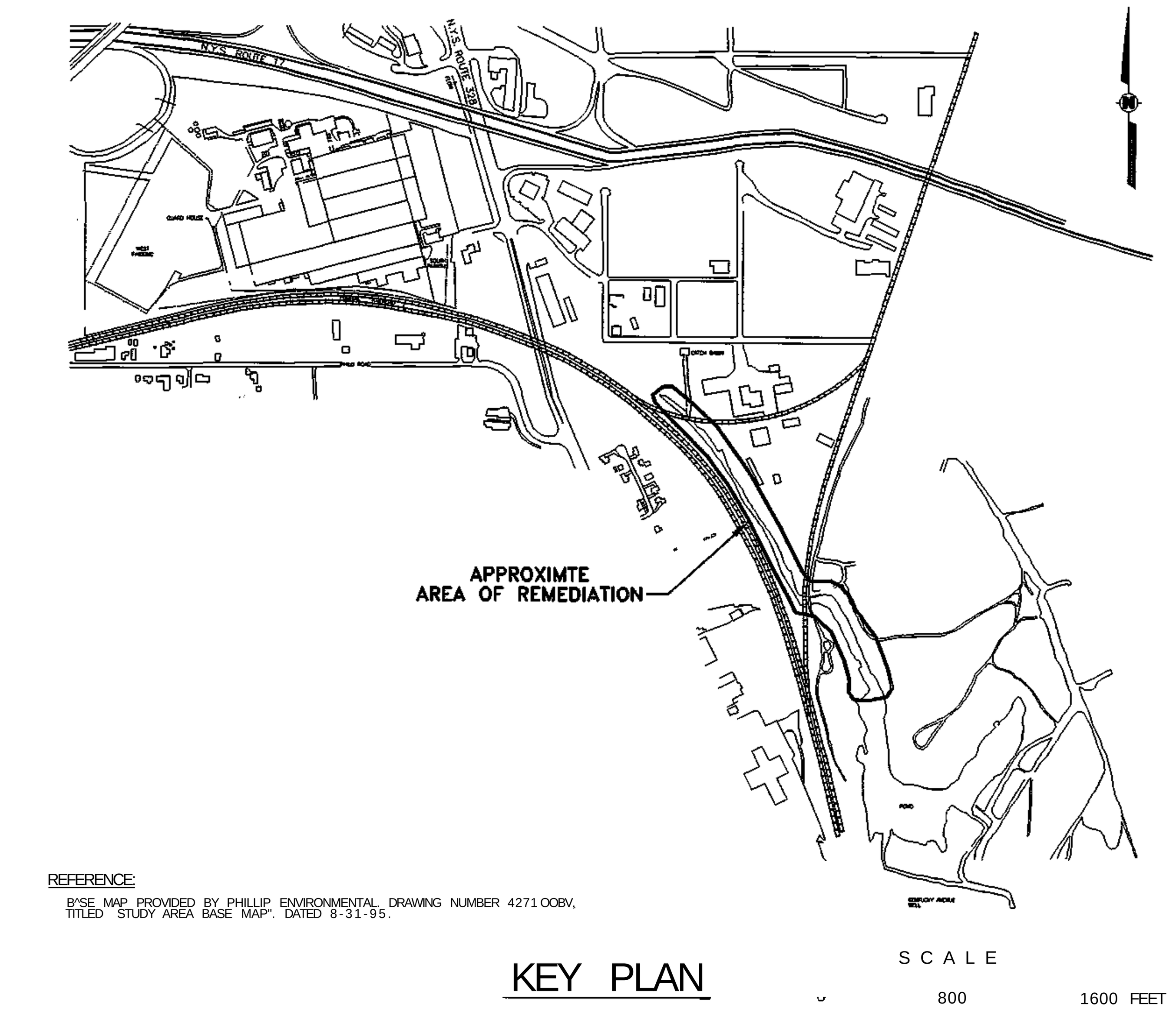
SIZE E SCALE: 1" = 40' REV. DRAWING NUMBER

DRAWN BY: TEM/TNF DATE: 2-17-01
CHECKED BY: W.C. Smith DATE: 4-19-01
APPROVED BY: W.C. Smith DATE: 4-19-01

98245E10

DRAWING NUMBER 98245E1-1





REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

LEGEND

19+50 STATION NO. AS MEASURED FROM FROM CHEMUNG STREET OUTFALL

OVERHEAD ELECTRIC LINE

APK-2 SURVEY CONTROL POINT

SURVEY CONTROL P0IN1rs

POINT	NORTHING	EASTING	ELEV.
PK-1	785,301.97	431,937.30	902.17
PK-2	784,647.84	432,363.38	903.04
PK-3	783,676.71	432,701.41	899.76
PK-4	783,179.26	432,797.21	899.59
IP—1	783,930.40	432,679.35	897.41

FIGURE 1

INDUSTRIAL DRAINAGEWAY LAYOUT

f^UMMINGS SDITER
A \ CONSULTANTS, INC.
CORPORATE HEADQUARTERS
339 Haymaker Road
Parkway Building, Suite 201
Monroeville, PA 15146
(412) 373-5240
Fax: (412) 373-5242

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

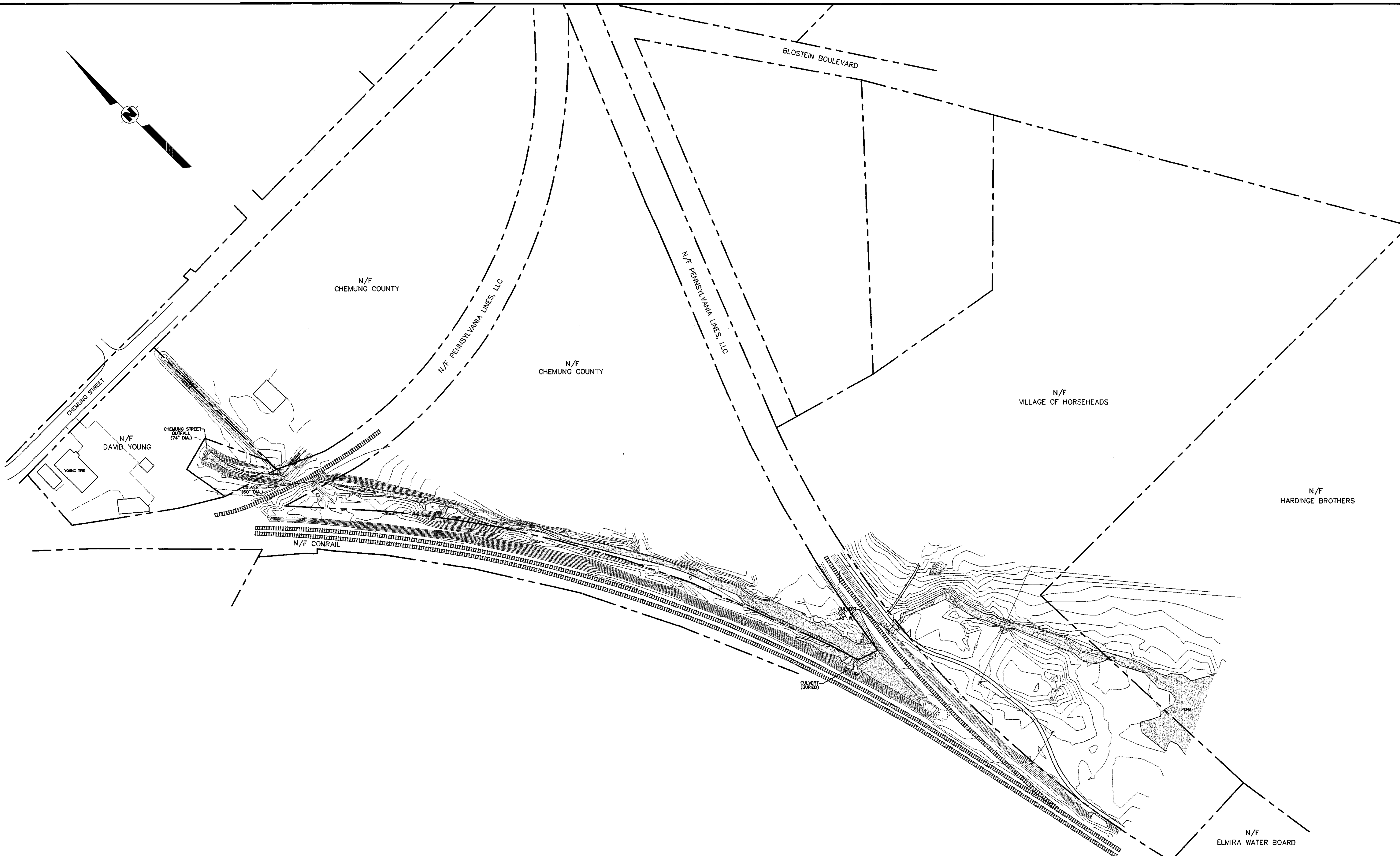
SIZE E SCALE: 1" = 80' REV. X DRAWING NUMBER

DRAWN BY: T.N. Fitzroy DATE: 2-12-01
CHECKED BY: w.C. Smith DATE: 4-19-01
APPROVED BY: W.C. Smith DATE: 4-19-01

98245E1-1

PLOT SCALE: 1=1

DRAWING NUMBER 98245E2



LEGEND

— · · — APPROXIMATE PROPERTY BOUNDARY

SCALE

100 0 100 200 FEET

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

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CORPORATE HEADQUARTERS
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Parkway Building, Suite 201
Monroeville, PA 15146
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Fax: (412) 373-5242

FIGURE 2

SITE PROPERTY OWNERS

KENTUCKY AVENUE WELLFIELD SITE – OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE	SCALE	REV.	DRAWING NUMBER
E	1" = 100'	X	98245E2

DRAWN BY: T.N. Fitzroy	DATE: 2-12-01	98245E2
CHECKED BY: [signature]	DATE: 4-19-01	
APPROVED BY: [signature]	DATE: 4-19-01	

PLOT SCALE: 1=1

DRAWING NUMBER 98245E1-2

LEGEND

19+50	STATION NO. AS MEASURED FROM FROM CHEMUNG STREET OUTFALL
4 ●	SUPPLEMENTAL DESIGN INVESTIGATION SEDIMENT/ BANK SAMPLE LOCATION
	OVERHEAD ELECTRIC LINES

SCALE
40 0 40 80 FEET

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

FIGURE 3

SUPPLEMENTAL DESIGN INVESTIGATION SAMPLE LOCATIONS

KENTUCKY AVENUE WELLFIELD SITE – OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

CUMMINGS RITER CONSULTANTS, INC.
CORPORATE HEADQUARTERS
339 Haymaker Road
Parkway Building, Suite 201
Monroeville, PA 15146
(412) 373-5240
Fax: (412) 373-5242

SIZE E	SCALE: 1" = 40'	REV. X	DRAWING NUMBER
DRAWN BY: T.N. Fitzroy	DATE: 2-12-01		98245E1-2
CHECKED BY: W.C. Smith	DATE: 4-19-01		
APPROVED BY: W.C. Smith	DATE: 4-19-01		

PLOT SCALE: 1=1

REV.	DESCRIPTION	DATE	APPROVED

REVISIONS

LEGEND

19+50 STATION NO. AS MEASURED FROM FROM CHEMUNG STREET OUTFALL

SUPPLEMENTAL DESIGN INVESTIGATION SEDIMENT/BANK SAMPLE LOCATION

OVERHEAD ELECTRIC LINES

SCALE

40 40 80 FEET

FIGURE 3

SUPPLEMENTAL DESIGN INVESTIGATION SAMPLE LOCATIONS

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CORPORATE HEADQUARTERS
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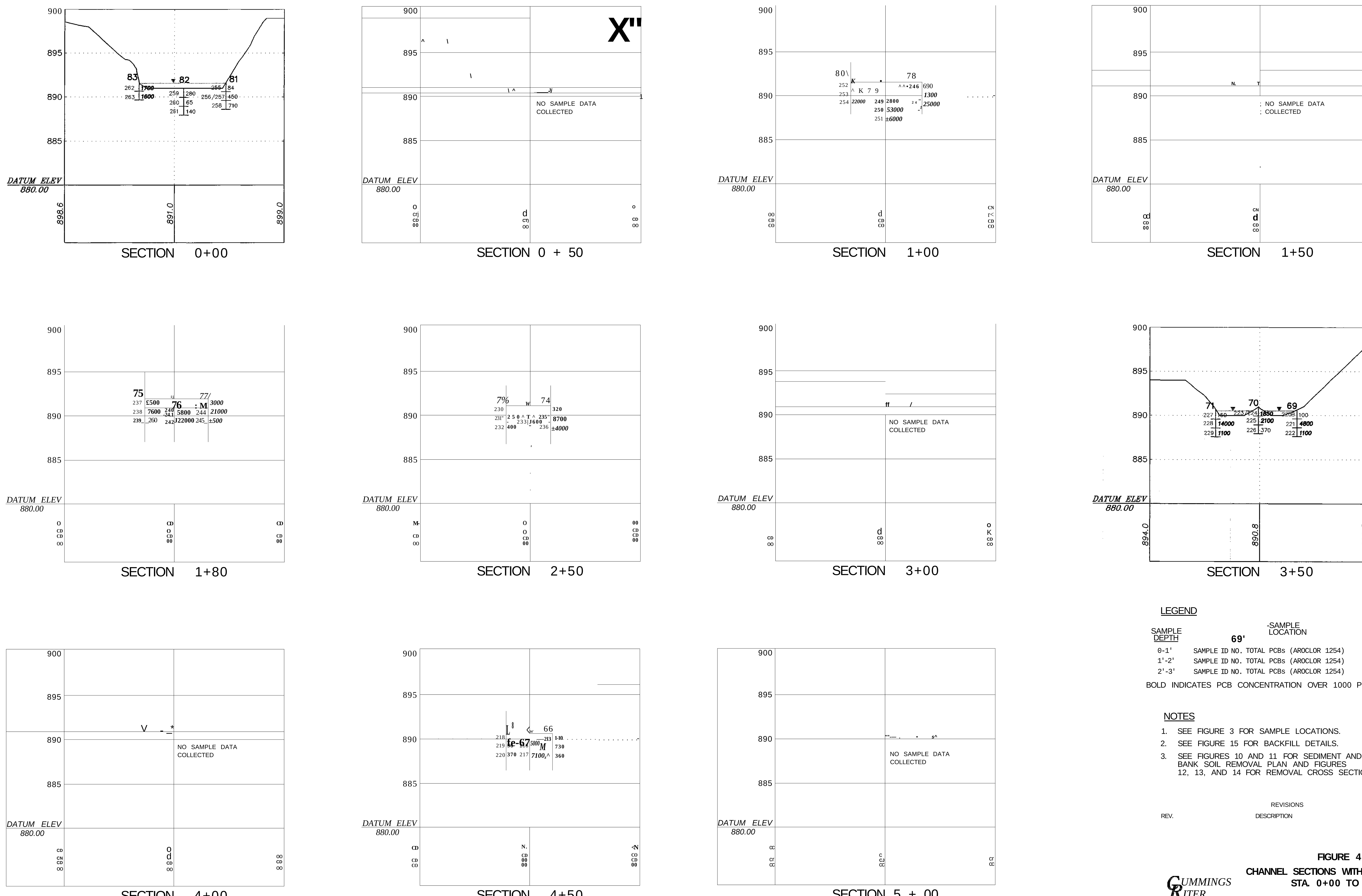
Parkway Building, Suite 201
Monroeville, PA 15146
(412) 373-5240
Fax: (412) 373-5242

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E SCALE: 1" = 40' REV. X DRAWING NUMBER 98245E1-2

DRAWN BY: T.N. Fitzroy DATE: 2-12-01
CHECKED BY: w.C. Smith DATE: 4-19-01
APPROVED BY: w.C. Smith DATE: 4-19-01



5X VERTICAL EXAGGERATION

HORIZONTAL SCALE

10 0 10 20 FEET

VERTICAL SCALE

0 10 FEET

LEGEND

SAMPLE DEPTH

-SAMPLE LOCATION

69'

0-1' SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
1'-2' SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
2'-3' SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)

BOLD INDICATES PCB CONCENTRATION OVER 1000 PPB.

NOTES

1. SEE FIGURE 3 FOR SAMPLE LOCATIONS.
2. SEE FIGURE 15 FOR BACKFILL DETAILS.
3. SEE FIGURES 10 AND 11 FOR SEDIMENT AND BANK SOIL REMOVAL PLAN AND FIGURES 12, 13, AND 14 FOR REMOVAL CROSS SECTIONS.

REVISIONS

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Fax: (412) 373-5242

FIGURE 4

CHANNEL SECTIONS WITH PCB RESULTS
STA. 0+00 TO 5+00

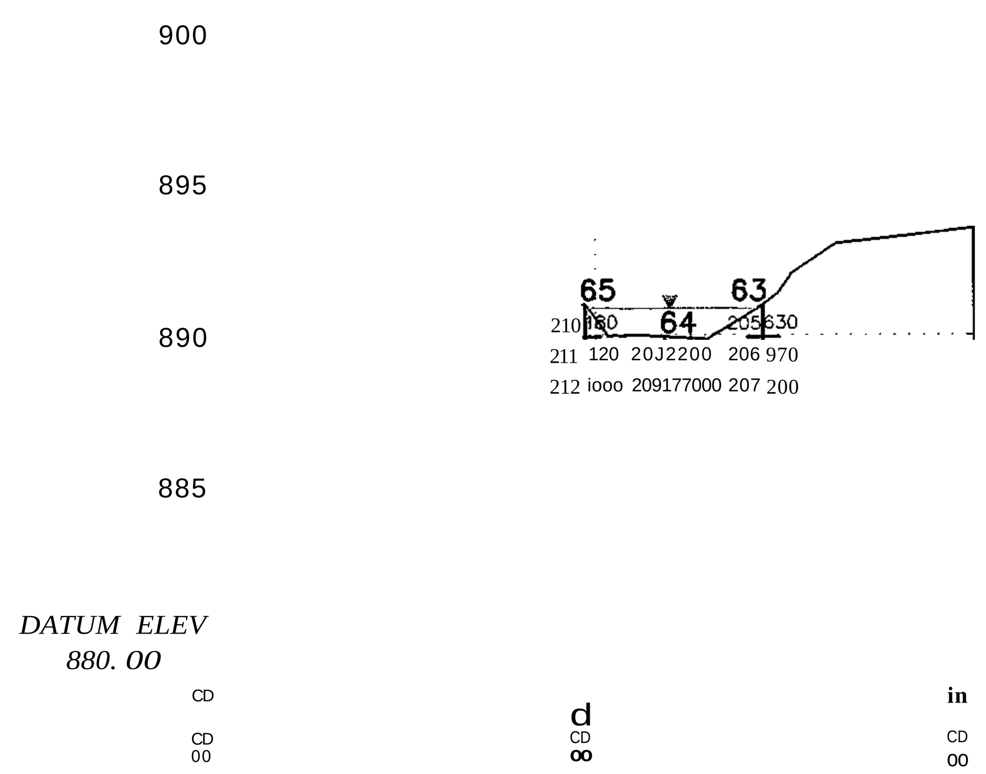
KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

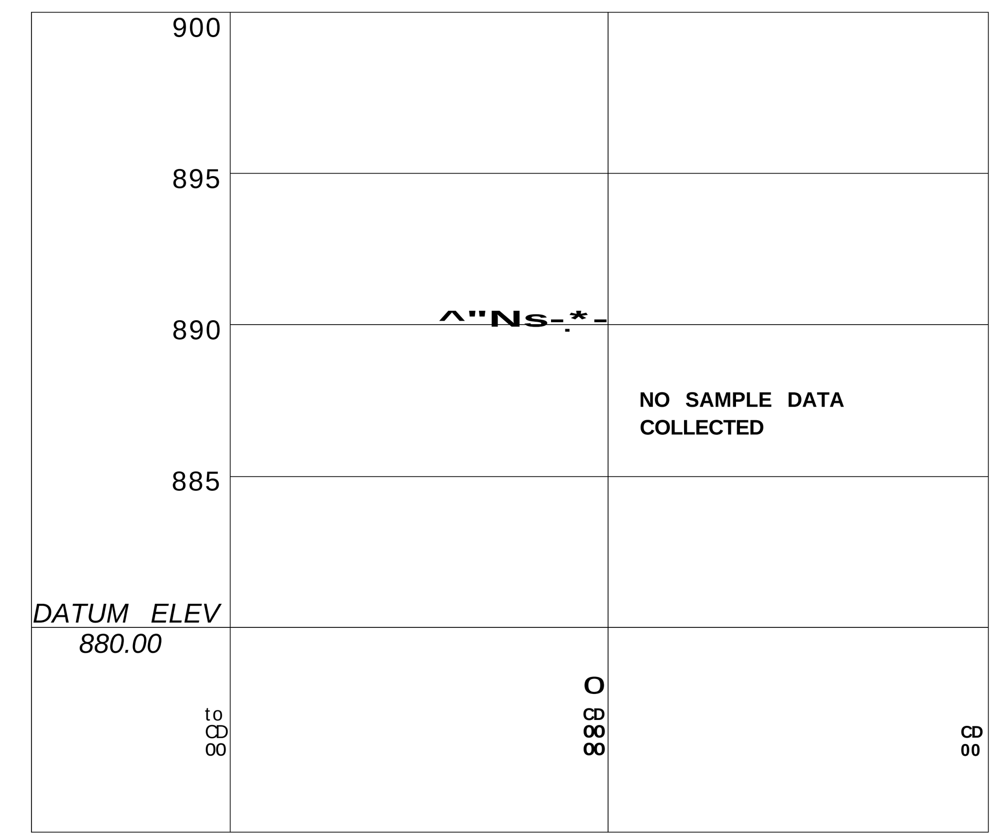
SIZE E SCALE: AS SHOWN DRAWING NUMBER

DRAWN BY:	TNF/TEM	DATE:	4-13-01
CHECKED BY:	W.C. Smith	DATE:	4-19-01
APPROVED BY:	W.C. Smith	DATE:	4-19-01

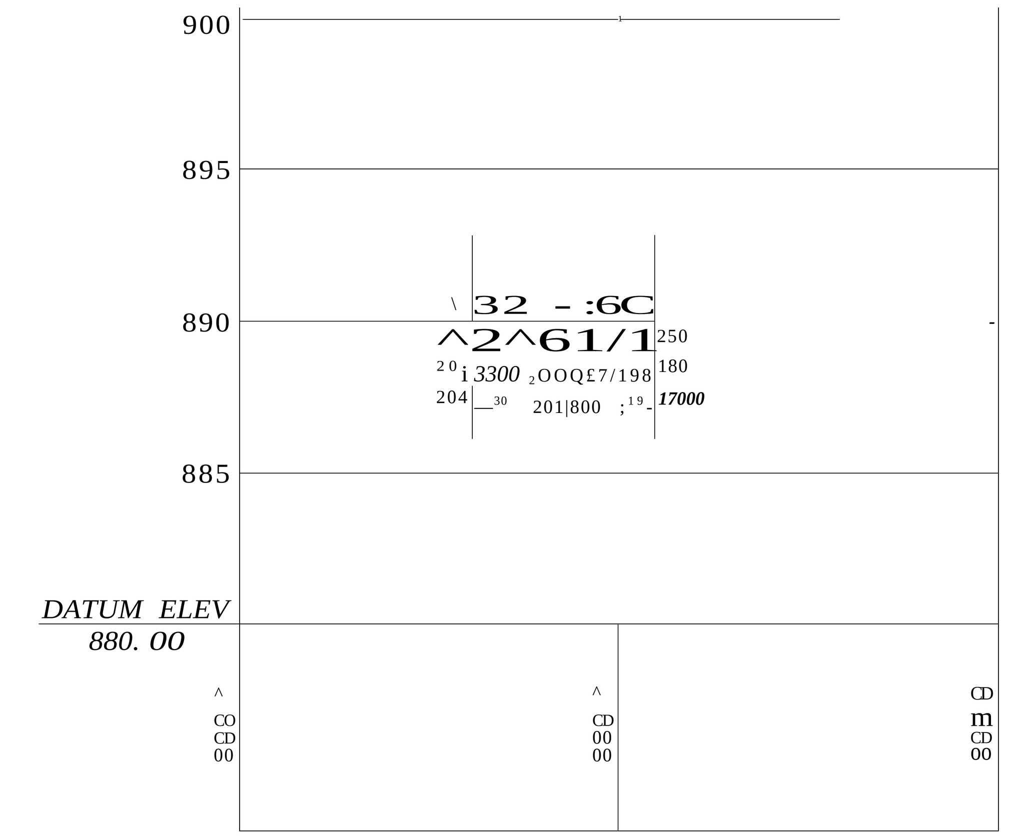
98245E3



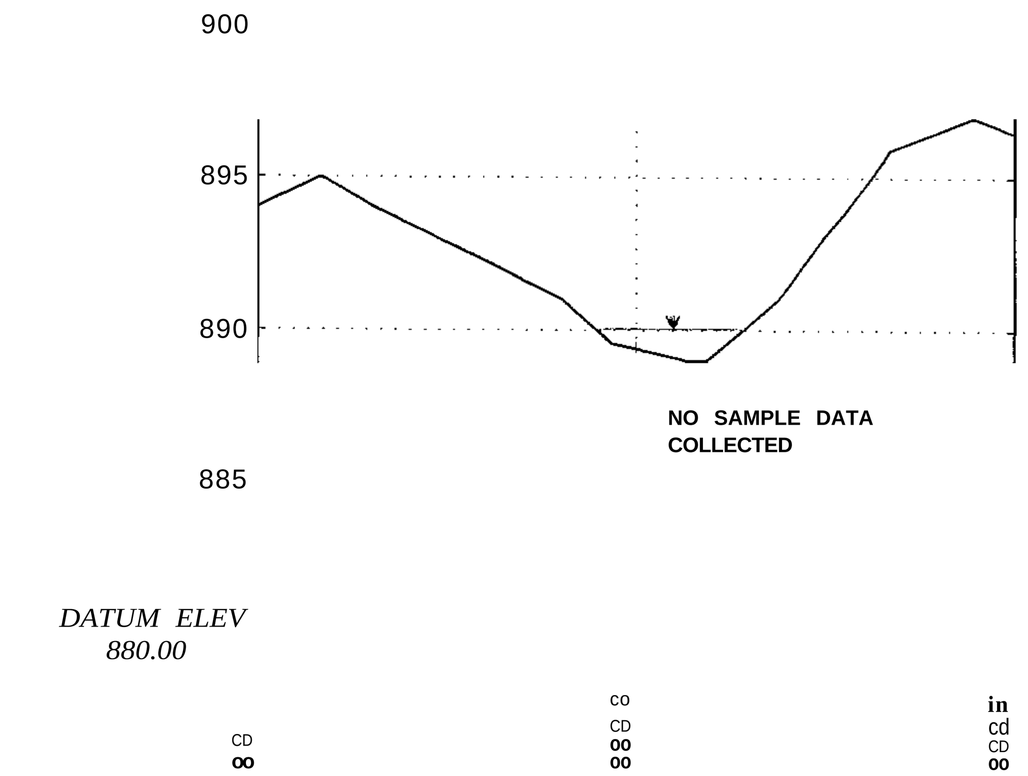
SECTION 5 + 50



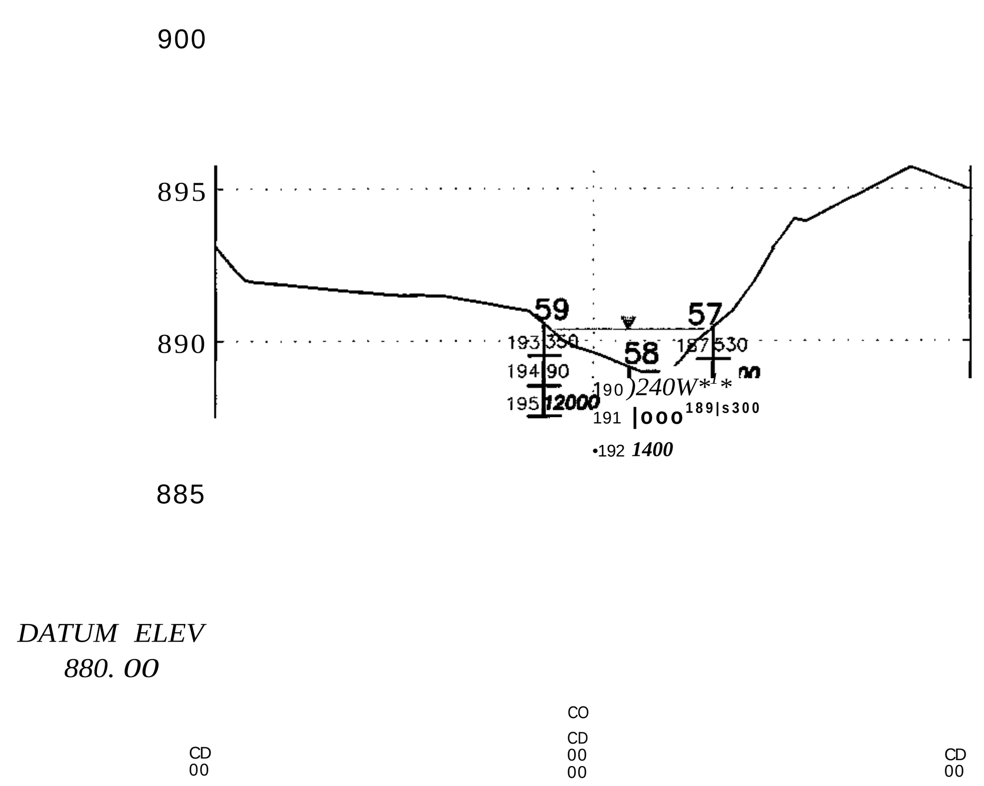
SECTION 6 + 00



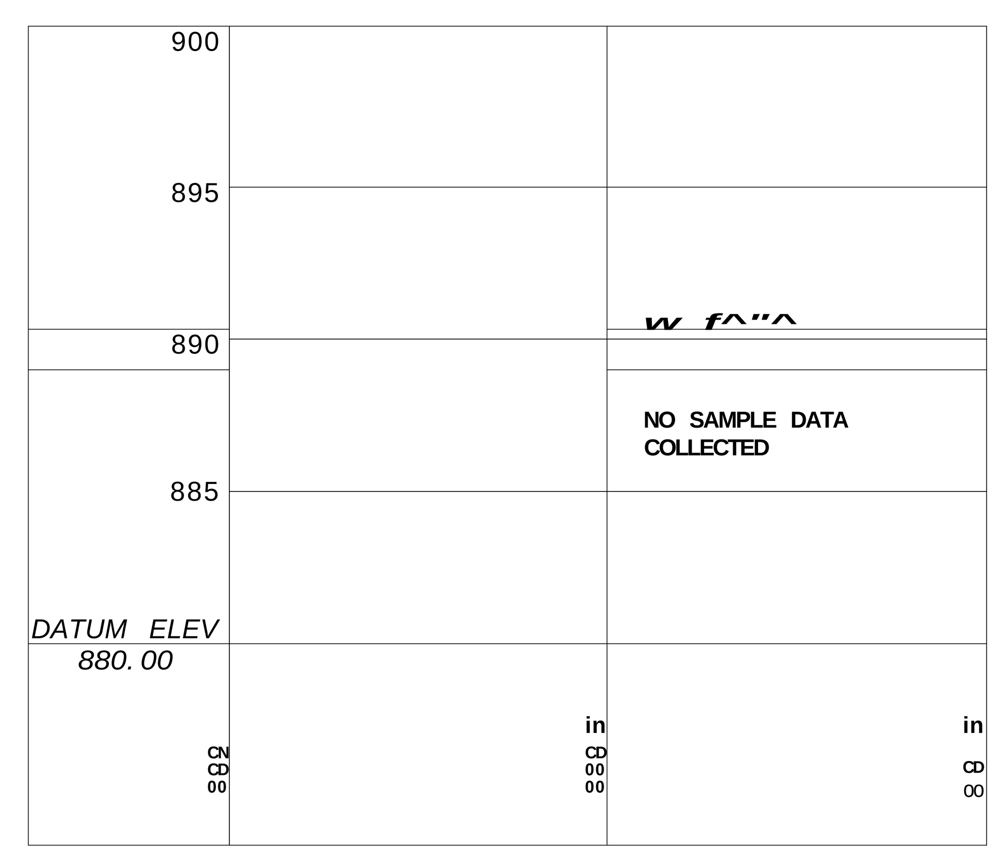
SECTION 6+50



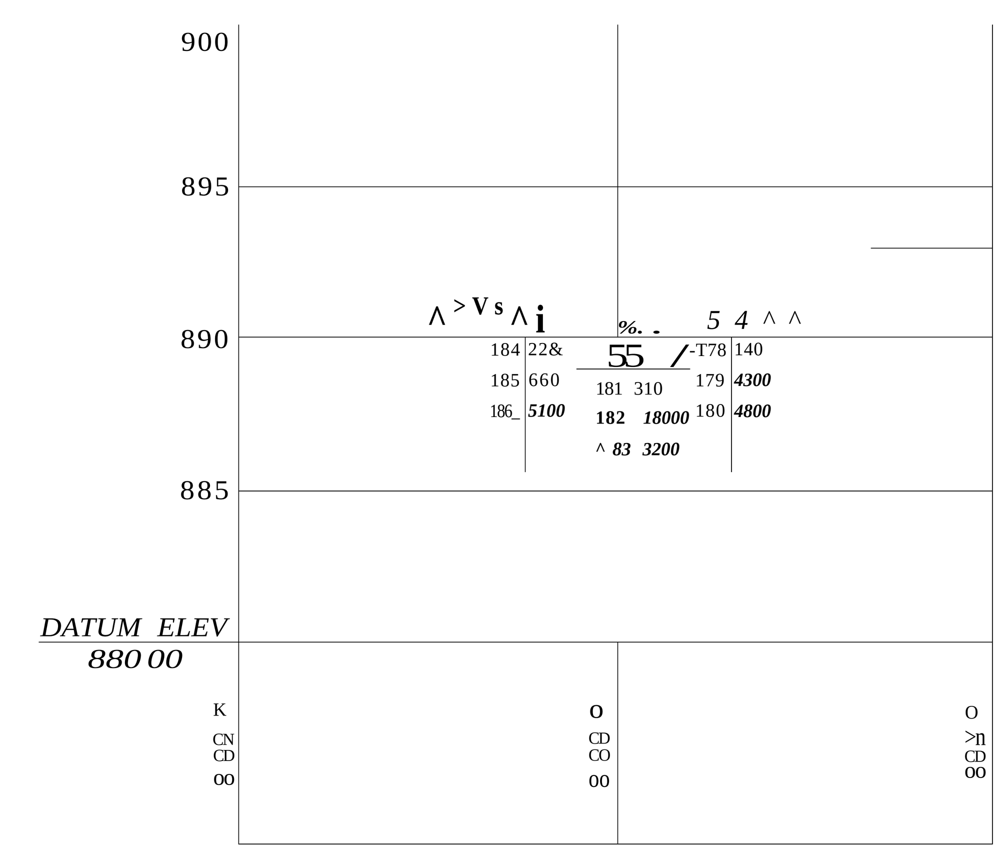
SECTION 7+00



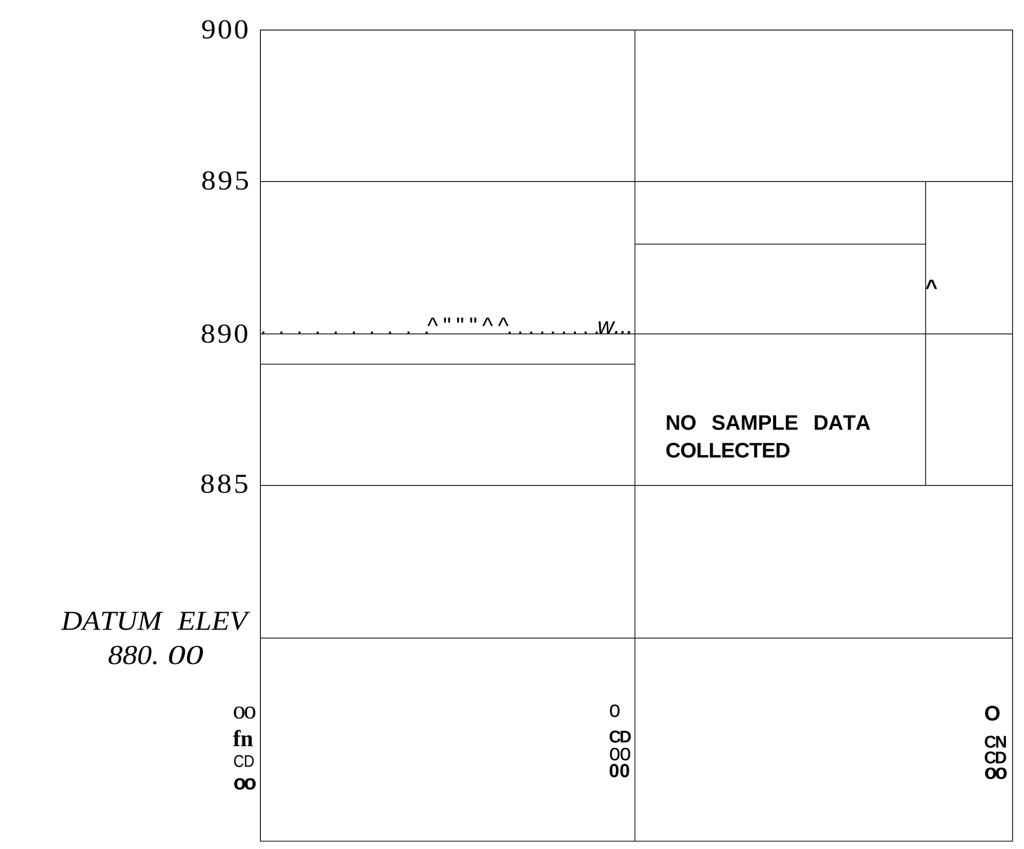
SECTION 7+50



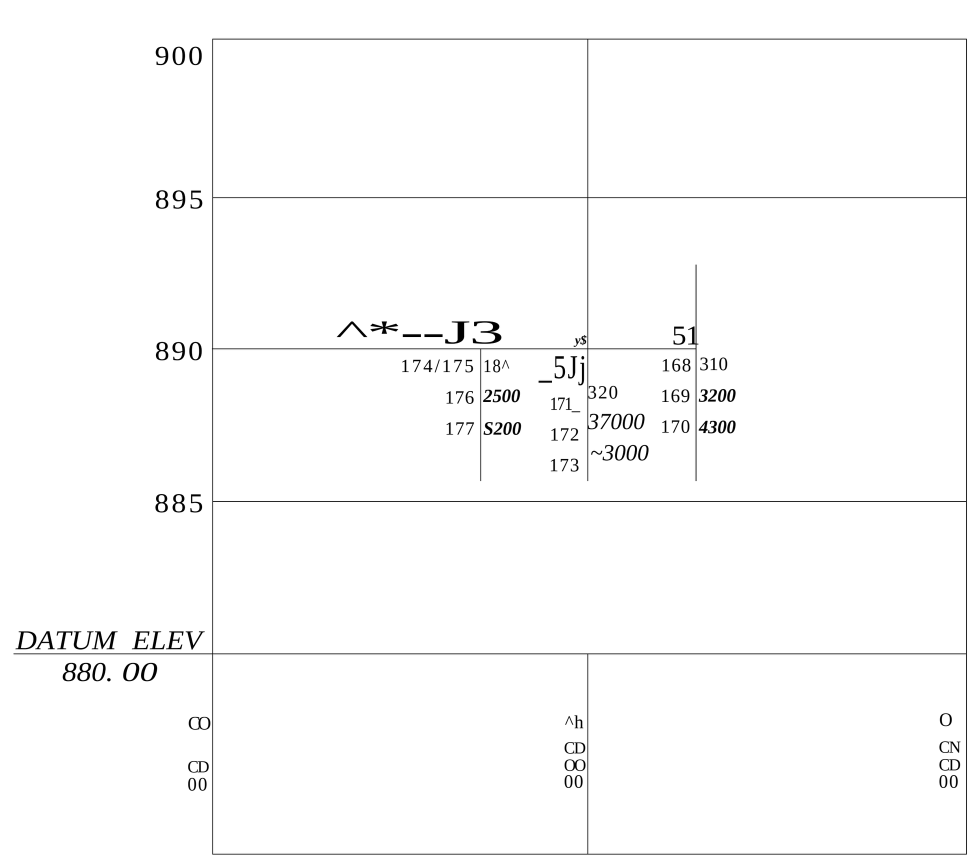
SECTION 8+00



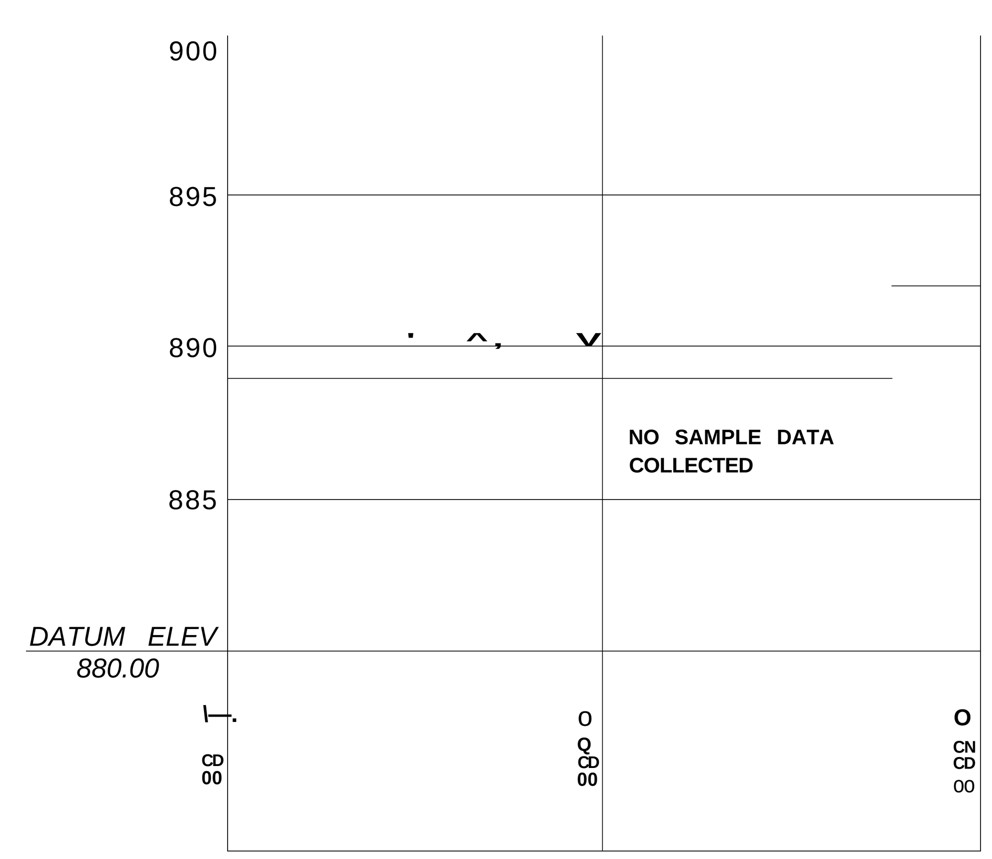
SECTION 8 + 50



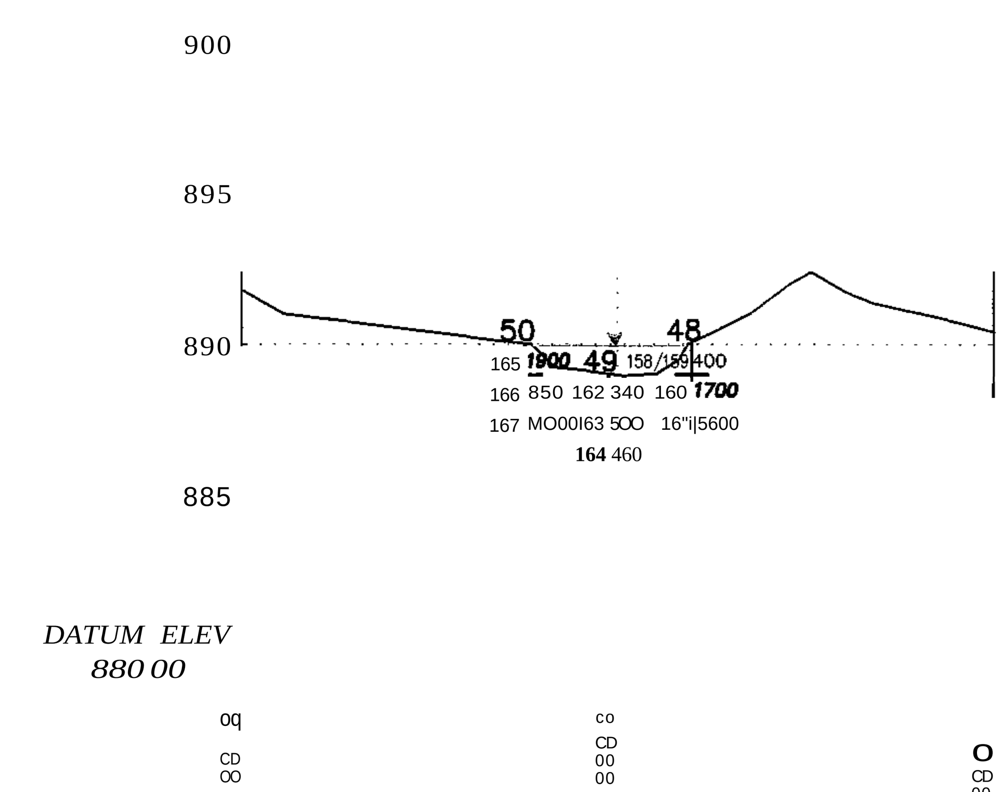
SECTION 9 + 00



SECTION 9+50



SECTION 10+00



SECTION 10 + 50

LEGEND

SAMPLE DEPTH — 69' — SAMPLE LOCATION

0-1' SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
1'-2' SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
2'-3' SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)

BOLD INDICATES PCB CONCENTRATION OVER 1000 PPB.

NOTES

1. SEE FIGURE 3 FOR SAMPLE LOCATIONS.
2. SEE FIGURE 15 FOR BACKFILL DETAILS.
3. SEE FIGURES 10 AND 11 FOR SEDIMENT AND BANK SOIL REMOVAL PLAN AND FIGURES 12, 13, AND 14 FOR REMOVAL CROSS SECTIONS.

5X VERTICAL EXAGGERATION

HORIZONTAL SCALE: 10 0 10 20 FEET

VERTICAL SCALE: 50 0 50 100 FEET

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

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Parkway Building, Suite 201
Monroeville, PA 15146
(412) 373-5240
Fax: (412) 373-5242

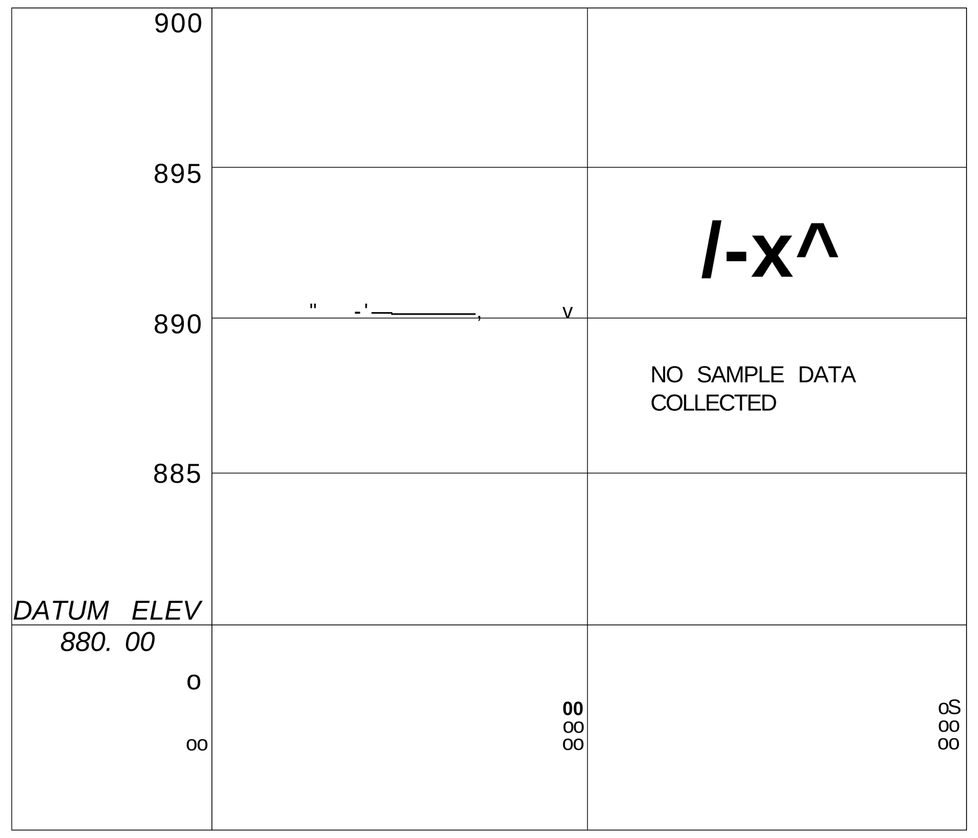
FIGURE 5
CHANNEL SECTIONS WITH PCB RESULTS
STA. 5+50 TO 10+50

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

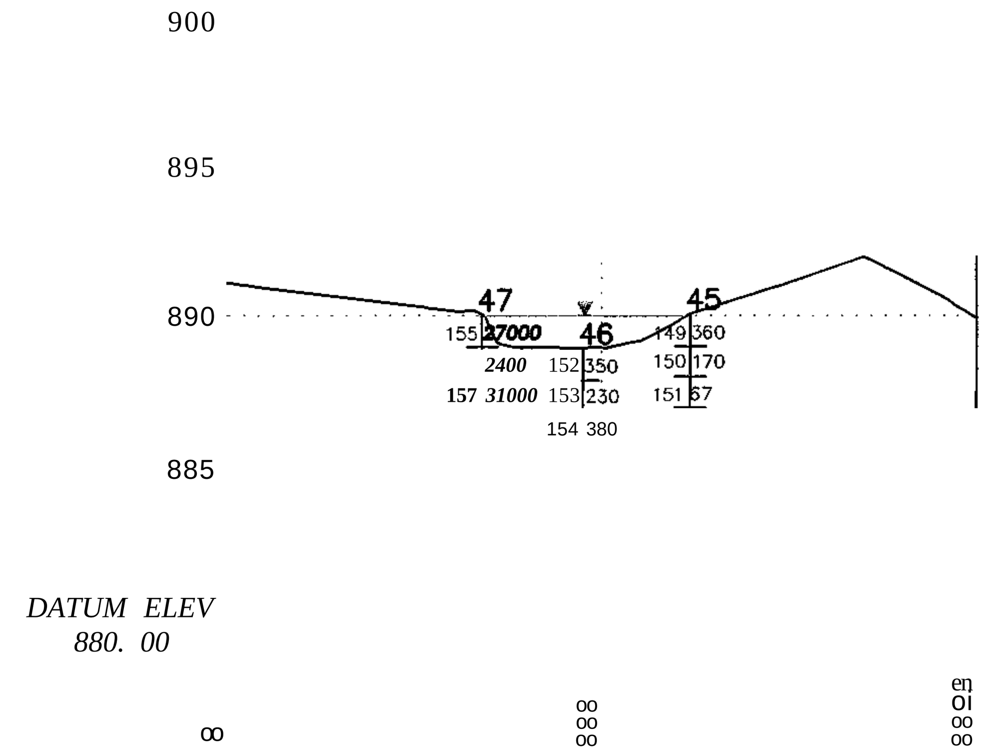
PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E | SCALE: AS SHOWN | DRAWING NUMBER 98245E4

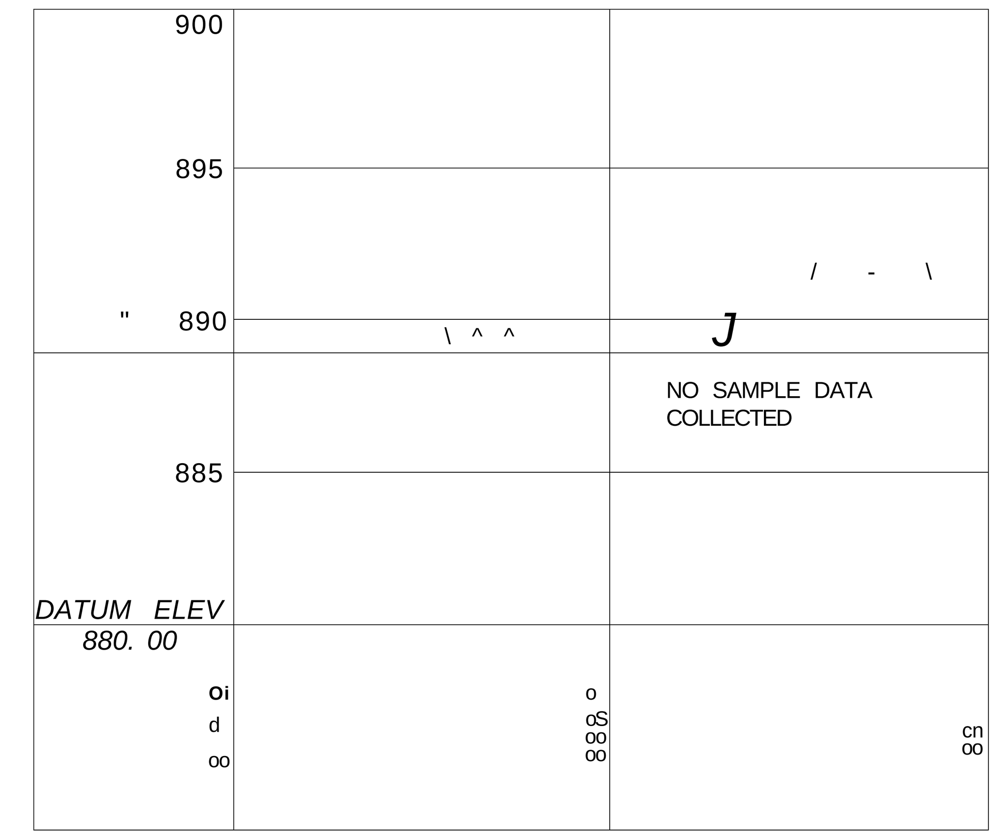
DRAWN BY: T.N. Fitzroy DATE: 4-13-01
CHECKED BY: W.C. Smith DATE: 4-19-01
APPROVED BY: W.C. Smith DATE: 4-19-01



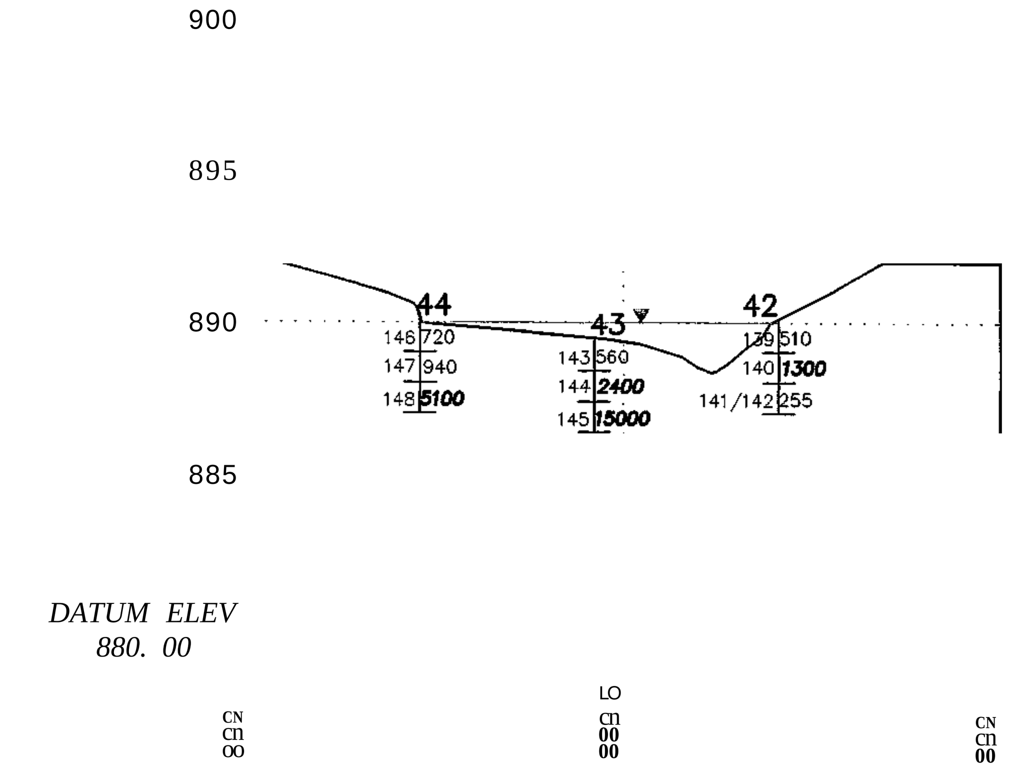
SECTION 11+00



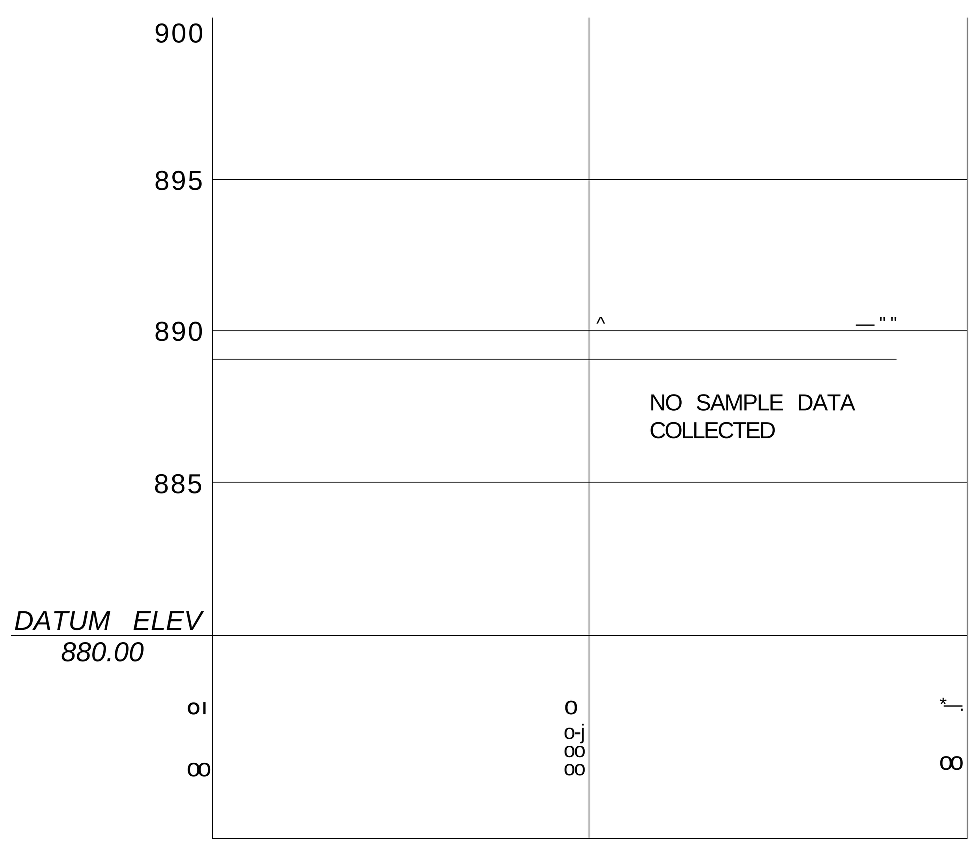
SECTION 11+50



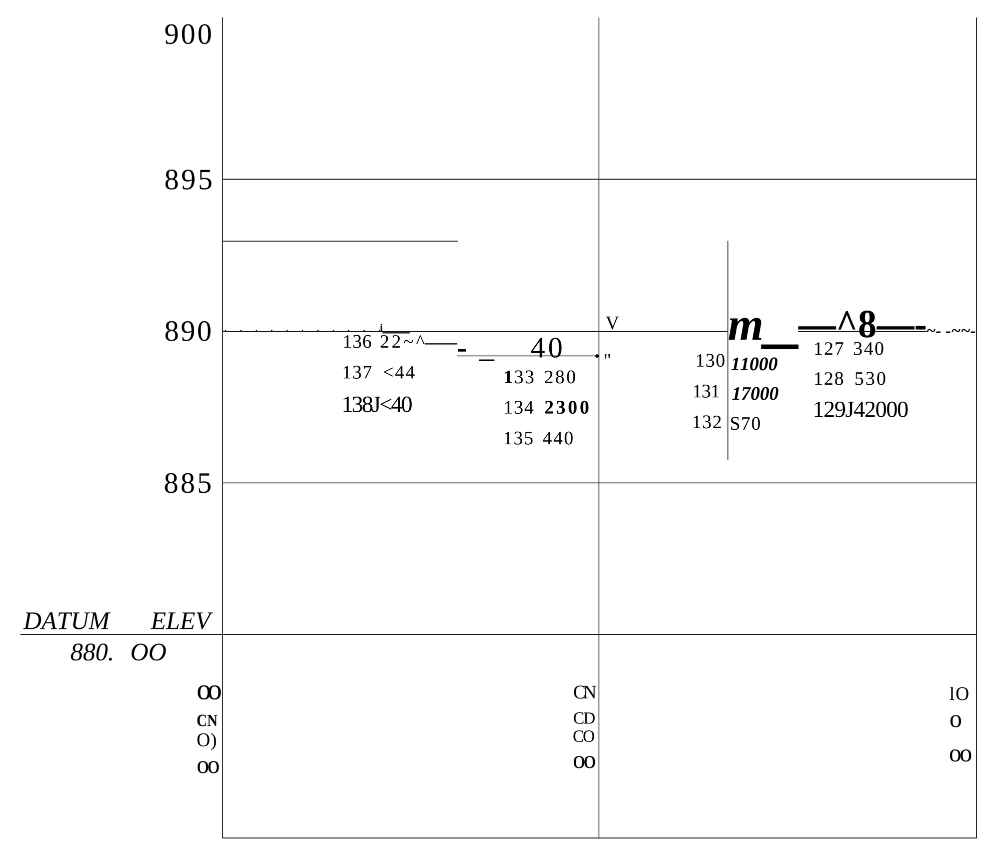
SECTION 12+00



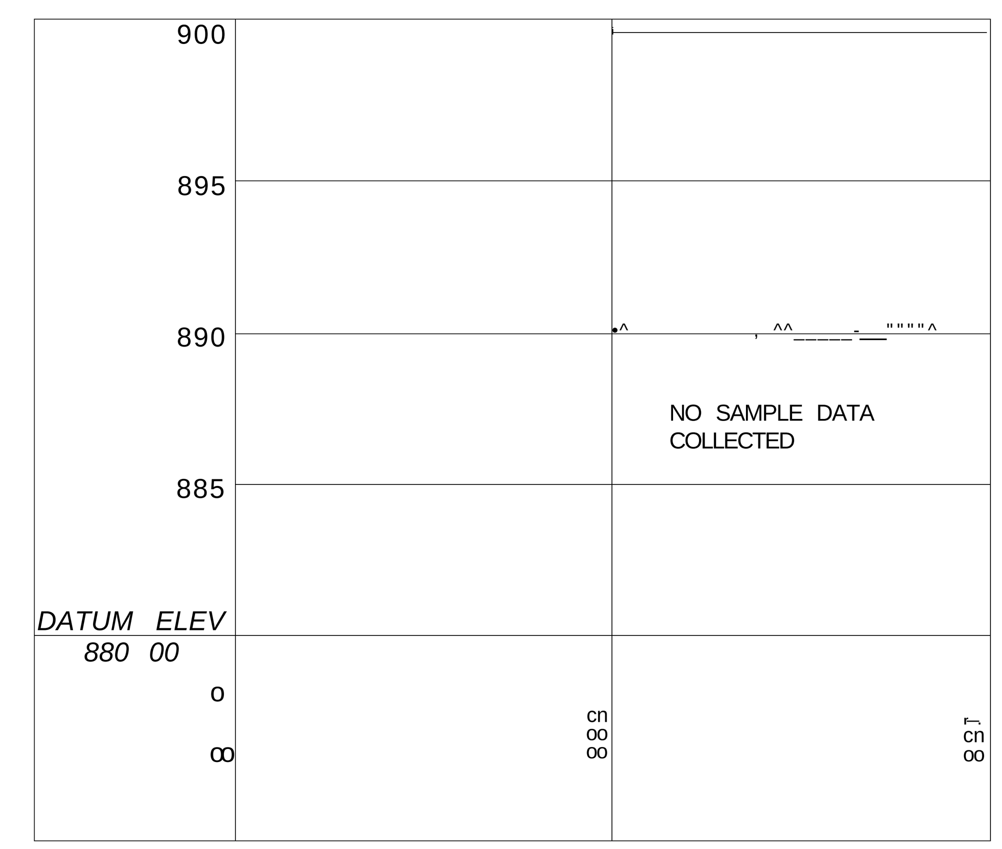
SECTION 12 + 50



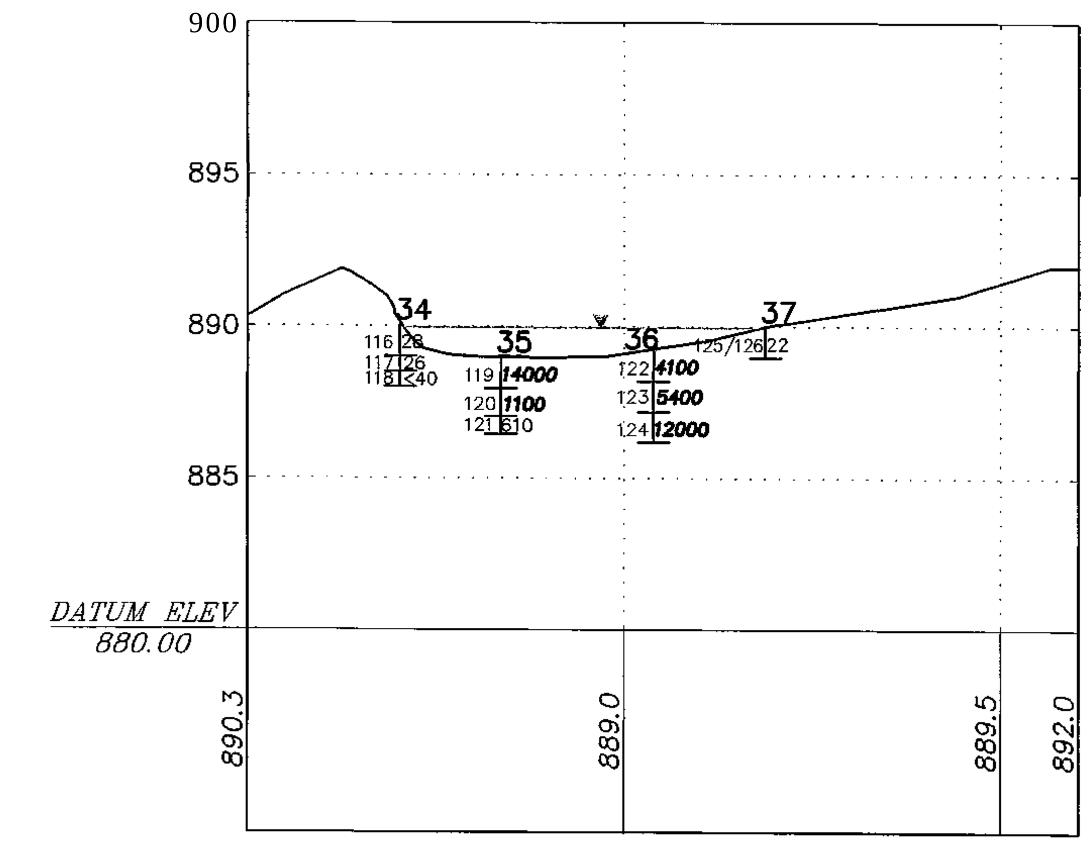
SECTION 13+00



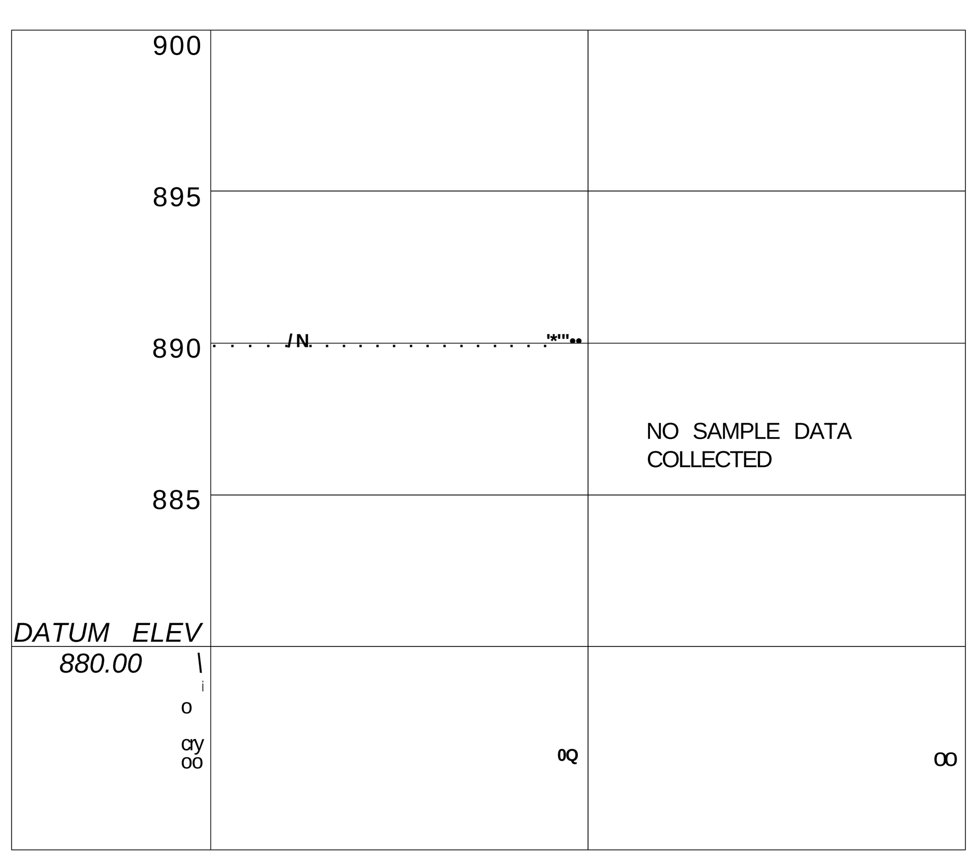
SECTION 13 + 50



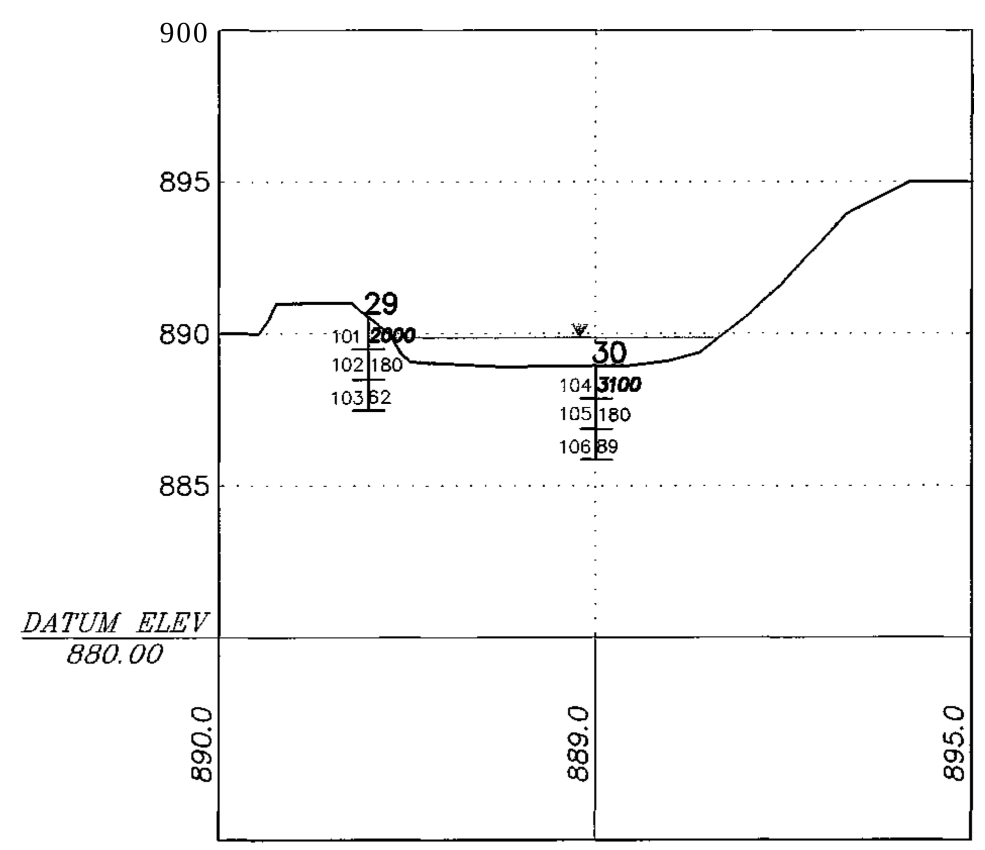
SECTION 14+00



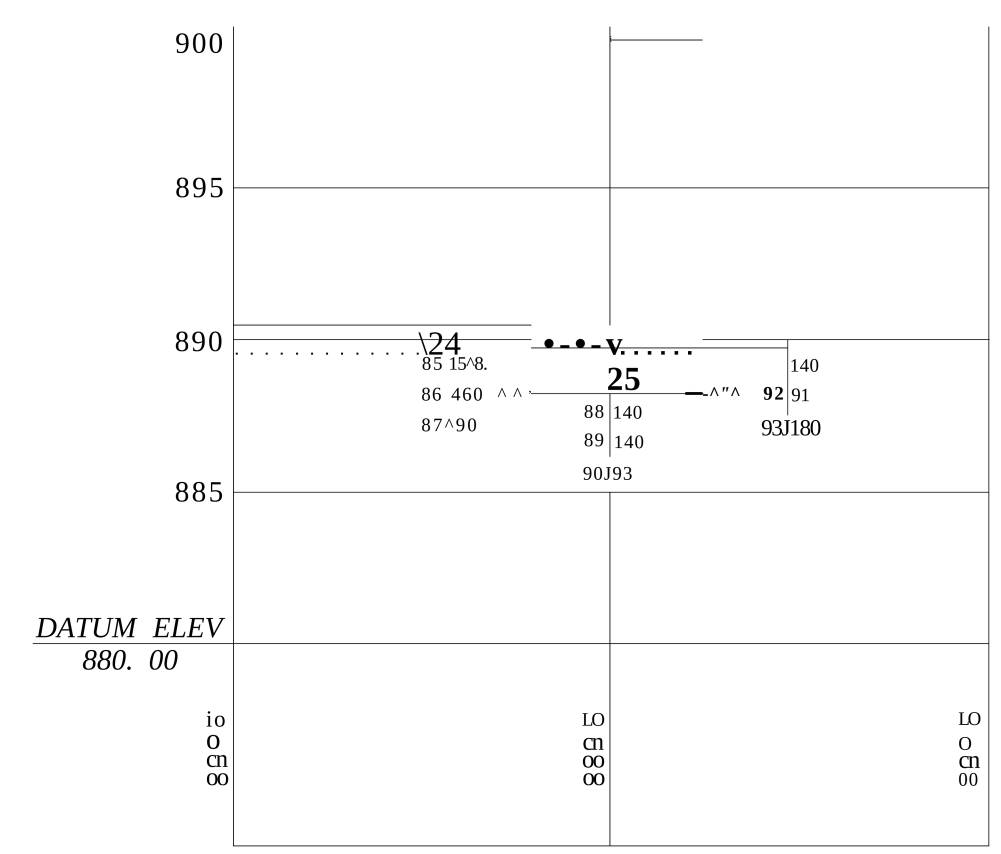
SECTION 14+50



SECTION 15+00



SECTION 15+42



SECTION 16+00

LEGEND

SAMPLE DEPTH — SAMPLE LOCATION 69'

SAMPLE DEPTH		
0-1'	SAMPLE ID NO.	TOTAL PCBs (AROCLOR 1254)
1'-2'	SAMPLE ID NO.	TOTAL PCBs (AROCLOR 1254)
2-3'	SAMPLE ID NO.	TOTAL PCBs (AROCLOR 1254)

BOLD INDICATES PCB CONCENTRATION OVER 1000 PPB.

NOTES

1. SEE FIGURE 3 FOR SAMPLE LOCATIONS.
2. SEE FIGURE 15 FOR BACKFILL DETAILS.
3. SEE FIGURES 10 AND 11 FOR SEDIMENT AND BANK SOIL REMOVAL PLAN AND FIGURES 12, 13, AND 14 FOR REMOVAL CROSS SECTIONS.

5X VERTICAL EXAGGERATION

HORIZONTAL SCALE

10 0 10 20 FEET

VERTICAL SCALE

50 0 50 100 FEET

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

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CORPORATE HEADQUARTERS
339 Haymaker Road
Parkway Building, Suite 201
Monroeville, PA 15146
(412) 373-5240
Fax: (412) 373-5242

FIGURE 6

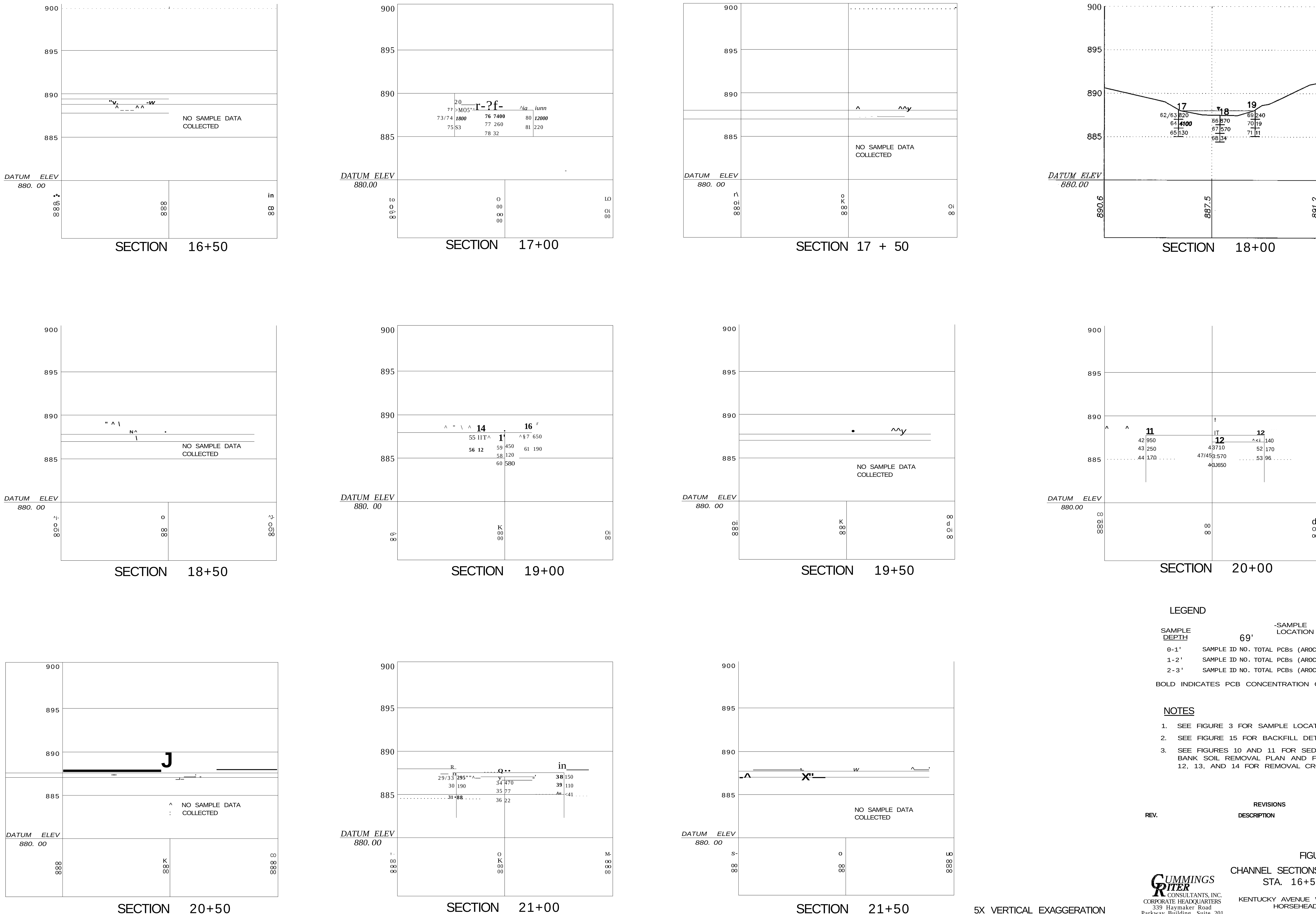
CHANNEL SECTIONS WITH PCB RESULTS
STA. 11+00 TO 16+00

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E SCALE: AS SHOWN DRAWING NUMBER 98245E5

DRAWN BY:	T.N. Fitzroy	DATE:	4-13-01
CHECKED BY:	W.C. Smith	DATE:	4-19-01
APPROVED BY:	W.C. Smith	DATE:	4-19-01



LEGEND

SAMPLE DEPTH — 69' — SAMPLE LOCATION

0-1'	SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
1-2'	SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
2-3'	SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)

BOLD INDICATES PCB CONCENTRATION OVER 1000 PPB.

NOTES

1. SEE FIGURE 3 FOR SAMPLE LOCATIONS.
2. SEE FIGURE 15 FOR BACKFILL DETAILS.
3. SEE FIGURES 10 AND 11 FOR SEDIMENT AND BANK SOIL REMOVAL PLAN AND FIGURES 12, 13, AND 14 FOR REMOVAL CROSS SECTIONS.

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

5X VERTICAL EXAGGERATION

HORIZONTAL SCALE: 10 0 10 20 FEET

VERTICAL SCALE: 50 0 50 100 FEET

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339 Haymaker Road
Parkway Building, Suite 201
Monroeville, PA 15146
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Fax: (412) 373-5242

FIGURE 7

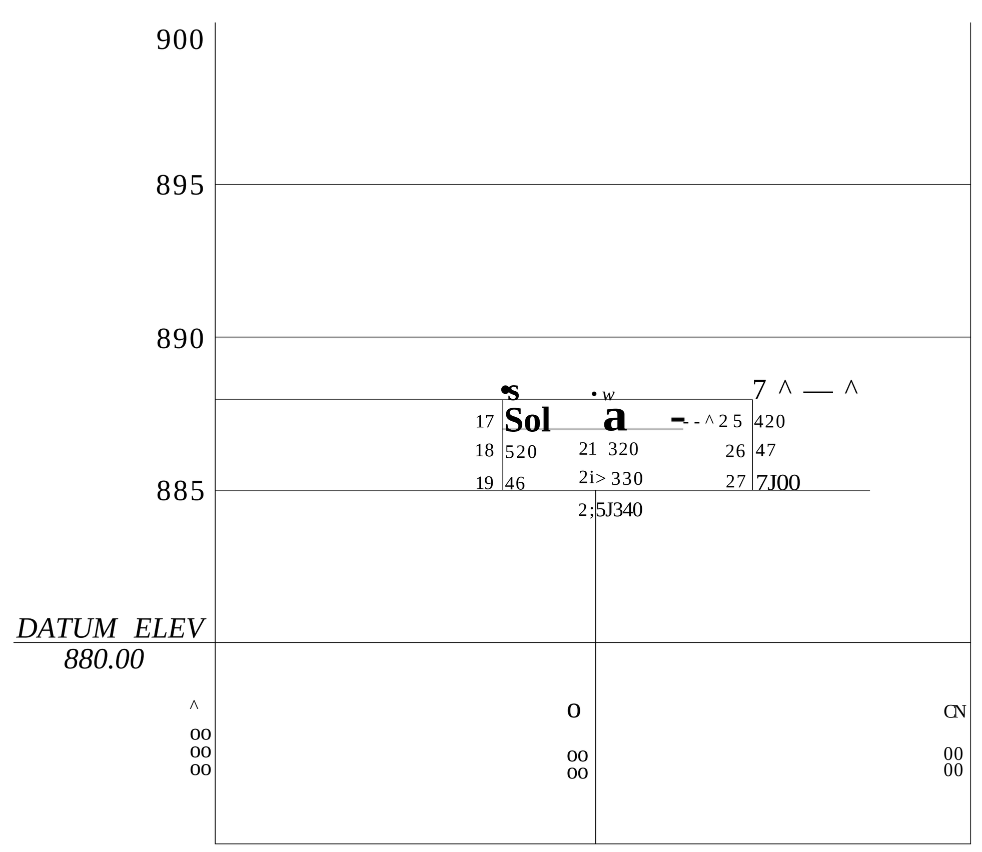
CHANNEL SECTIONS WITH PCB RESULTS STA. 16+50 TO 21+50

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

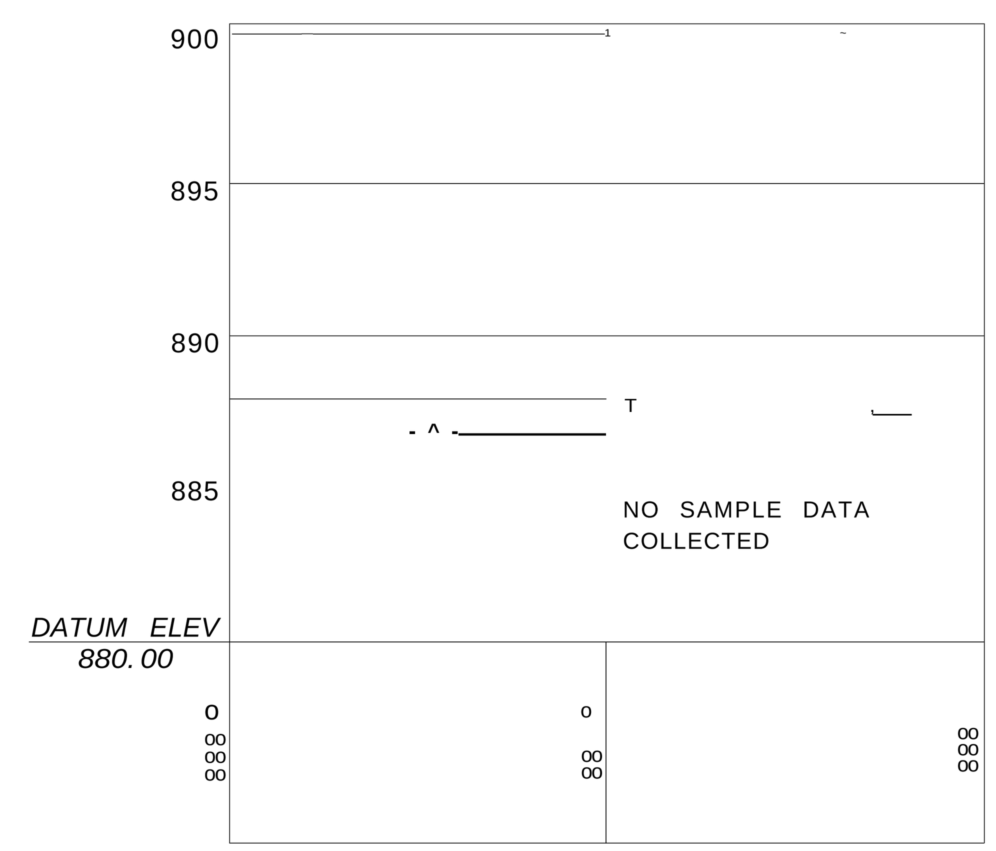
PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E — SCALE: AS SHOWN — DRAWING NUMBER 98245E6

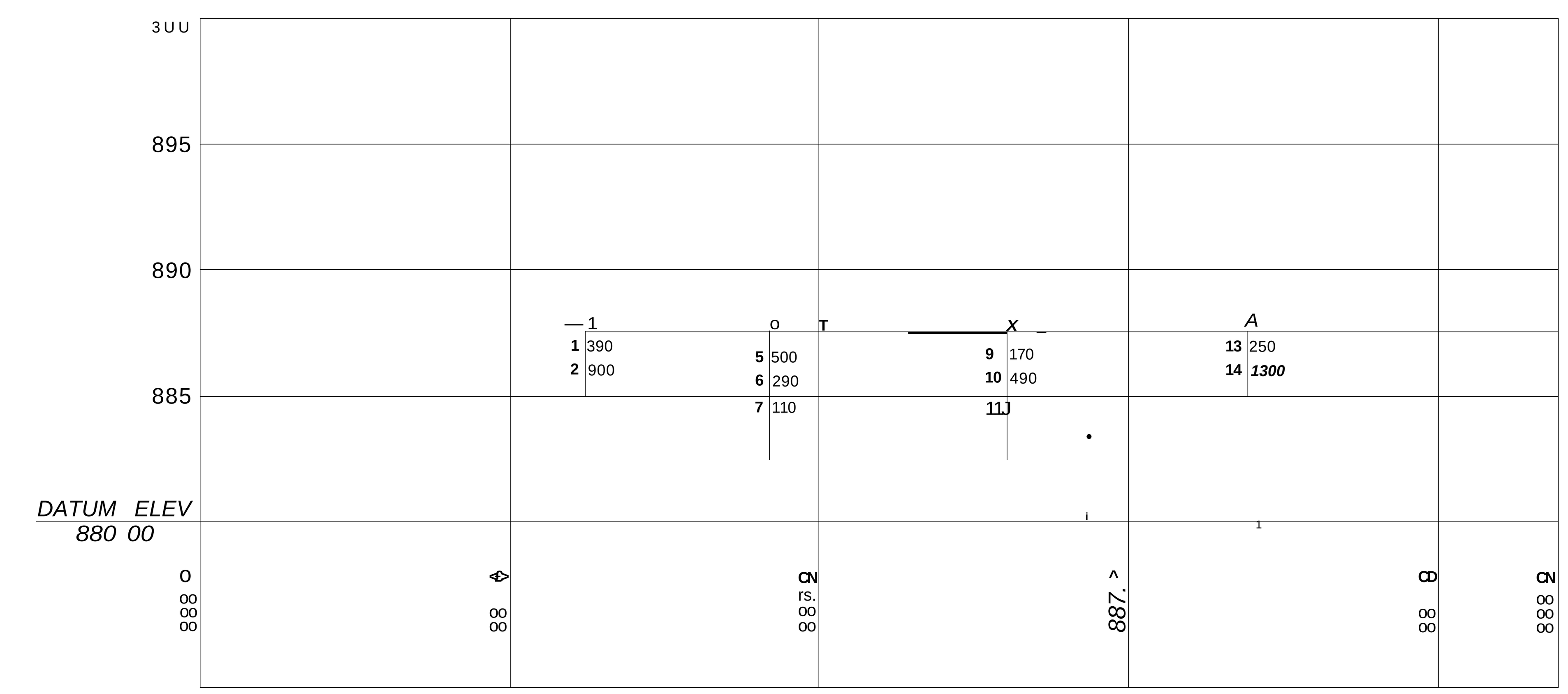
DRAWN BY:	TNF/TEM	DATE:	4-13-01
CHECKED BY:	W.C. Smith	DATE:	4-19-01
APPROVED BY:	W.C. Smith	DATE:	4-19-01



SECTION 22+00



SECTION 22 + 50



SECTION 23 + 00

LEGEND

SAMPLE DEPTH — SAMPLE LOCATION

0-1'	SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
1'-2'	SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)
2-3'	SAMPLE ID NO. TOTAL PCBs (AROCLOR 1254)

BOLD INDICATES PCB CONCENTRATION OVER 1000 PPB.

NOTES

1. SEE FIGURE 3 FOR SAMPLE LOCATIONS.
2. SEE FIGURE 15 FOR BACKFILL DETAILS.
3. SEE FIGURES 10 AND 11 FOR SEDIMENT AND BANK SOIL REMOVAL PLAN AND FIGURES 12, 13, AND 14 FOR REMOVAL CROSS SECTIONS.

5X VERTICAL EXAGGERATION

HORIZONTAL SCALE

10 0 10 20 FEET

VERTICAL SCALE

50 0 50 100 FEET

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

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Fax: (412) 373-5242

FIGURE 8

CHANNEL SECTIONS WITH PCB RESULTS STA. 22+00 TO 23+00

KENTUCKY AVENUE WELLFIELD SITE OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E — SCALE: AS SHOWN — DRAWING NUMBER 98245E7

DRAWN BY:	TJVJ Fitzroy	DATE:	4-13-01
CHECKED BY:	W.CL Smith	DATE:	4-19-01
APPROVED BY:	W.C, Smith	DATE:	4-19-01

SCALE

80 80 160 FEET

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

NOTES:

1 BYPASS PUMPING PLAN SHALL BE DESIGNED BY THE CONTRACTOR AND APPROVED BY VIACOM INC.

2 CONTRACTOR SHALL HAVE THE CAPACITY TO PUMP BETWEEN 1,000 TO 5,000 GALLONS PER MINUTE (gpm) AS NECESSARY TO PREVENT BACKUP IN THE OUTFALL OR FLOODING OF THE DRAINAGEWAY.

3 FLOW AT CULVERT OUTLET (STA. 2+50) IS APPROXIMATELY 1200 TO 1400 gpm BASED ON FLOW MEASUREMENTS FROM FEB. 13, 2001 THROUGH APRIL 16, 2001.

4. THE CULVERT WATER VELOCITY IS APPROXIMATELY 50 FEET PER MINUTE.

5. TRANSFER PIPE SHALL BE ROUTED THROUGH CULVERTS 1 AND 2 AND NOT LAID ACROSS RAILROAD TRACKS.

6. CONTRACTOR SHALL HAVE A BACKUP PROVISION IN THE EVENT THE BYPASS PUMPS INADVERTENTLY SHUT DOWN.

7. CONTRACTOR SHALL HAVE PROVISIONS TO PUMP AND HANDLE SURFACE WATER THAT ENTERS THE DRAINAGEWAY DURING BYPASS PUMPING AND REMOVAL OPERATIONS.

LEGEND

19+50	STATION NO. AS MEASURED FROM CHEMUNG STREET OUTFALL
PUMP 1	LOW HEAD, HIGH VOLUME WATER PUMP
	BYPASS TRANSFER PIPE
	TEMPORARY SURFACE WATER CUTOFF WALL
	POSSIBLE TEMPORARY SURFACE WATER CUTOFF WALL

FIGURE 9

CONCEPTUAL BYPASS PUMPING PLAN

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Parkway Building, Suite 201
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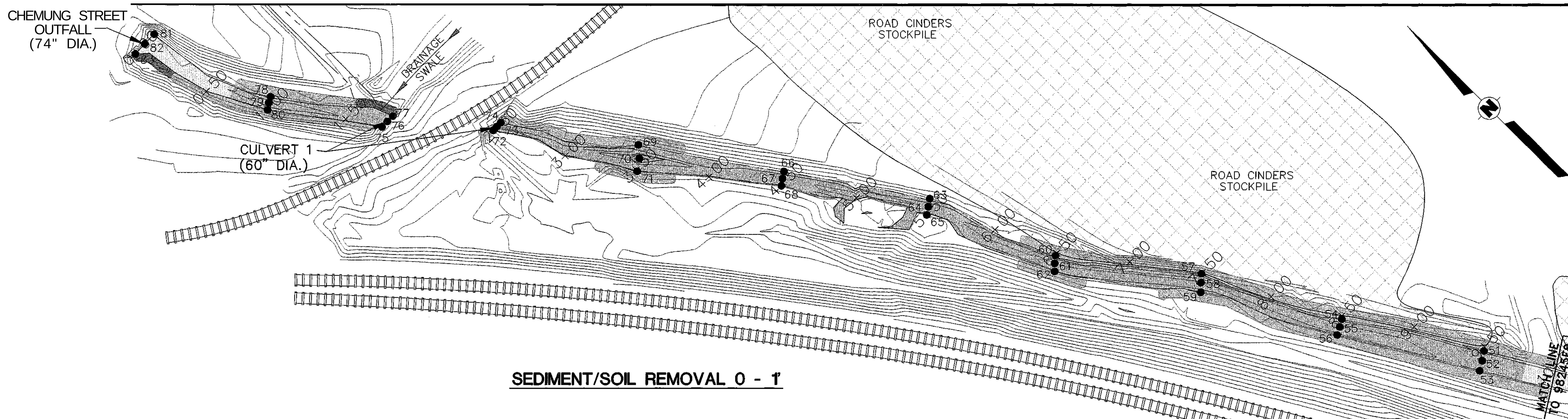
KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

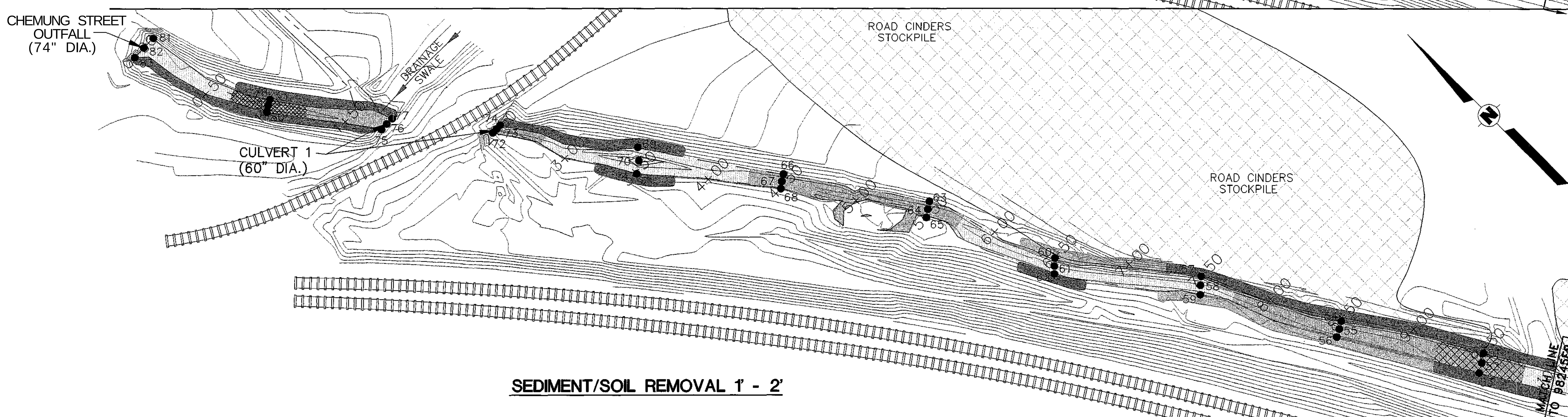
PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE	SCALE	REV.	DRAWING NUMBER
E	1" = 80'	X	98245E8

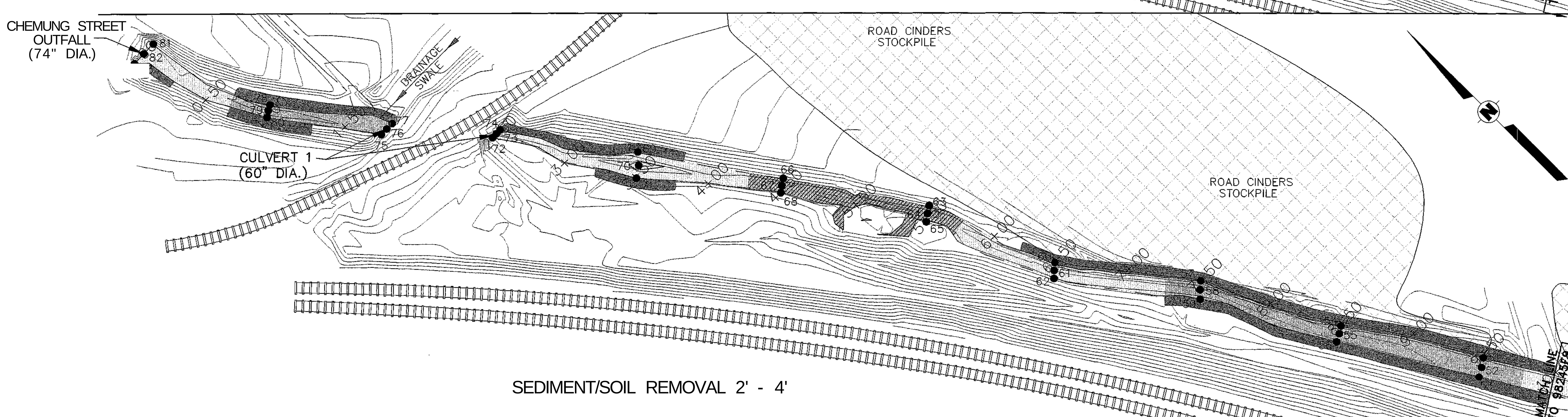
DRAWN BY:	*T.N. Fitzroy*	DATE:	*2-12-01*
CHECKED BY:	*W.C. Smith*	DATE	*4-19-01*
APPROVED BY:	*W.C. Smith*	DATE	*4-19-01*



SEDIMENT/SOIL REMOVAL 0 - 1'



SEDIMENT/SOIL REMOVAL 1' - 2'



SEDIMENT/SOIL REMOVAL 2' - 4'

LEGEND

19+50 STATION NO. AS MEASURED FROM FROM CHEMUNG STREET OUTFALL

SEDIMENT TO BE REMOVED

BANK SOIL TO BE REMOVED

CLEAN BANK SOIL TO BE REMOVED TO ACCESS IMPACTED SOIL. CLEAN SOIL SHALL BE REPLACED UPON REMOVAL OF IMPACTED SOIL

MATERIAL TO BE DISPOSED OF AS TSCA AND NEW YORK STATE HAZARDOUS WASTE (PCB CONCENTRATION >35 ppm)

EXCAVATION TO 3 FEET

NOTES:

1. SEDIMENT IN CULVERTS 1 AND 2 SHALL BE REMOVED AND TESTED BY THE CONTRACTOR TO DETERMINE DISPOSITION.
2. IN AREAS OF SEDIMENT REMOVAL WHERE A FIRM BOTTOM EXISTS 6 INCHES OF SOIL SHALL BE PLACED IN THE DRAINAGE WAY FOLLOWING REMOVAL ACTIVITIES. ACCEPTABLE SOILS SHALL INCLUDE THOSE SOILS DESCRIBED ON FIGURE 15. AREAS OF DRAINAGEWAY BACKFILL (i.e., FIRM BOTTOM) SHALL BE DETERMINED IN THE FIELD BASED ON MUTUAL CONCURRENCE BY VIACOM AND USEPA.
3. IN AREAS OF BANK SOIL REMOVAL, CLEAN SOIL SHALL BE PLACED TO APPROXIMATE GRADES PRIOR TO REMOVAL ACTIVITIES. ACCEPTABLE SOIL SHALL INCLUDE THOSE SOILS SOILS DESCRIBED ON FIGURE 15.
4. LIMITS OF BANK SOIL REMOVAL ARE NOT TO SCALE. FIGURE 12 THROUGH 14 FOR LATERAL BANK SOIL REMOVAL LIMITS.

SCALE

40 40 80 FEET

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

FIGURE 10

SEDIMENT/SOIL REMOVAL PLAN
STA. 0+00 TO 10+00

KENTUCKY AVENUE WELLFIELD SITE - 0U3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

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SIZE E | SCALE: 1" = 40' | REV. | DRAWING NUMBER 98245E10

DRAWN BY:	TEM/TNF	DATE:	2-17-01
CHECKED BY:	W.C. Smith	DATE:	4-19-01
APPROVED BY:	W.C. Smith	DATE:	4-19-01

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

NOTES:

1. SEDIMENT IN CULVERTS 1 AND 2 SHALL BE REMOVED AND TESTED BY THE CONTRACTOR TO DETERMINE DISPOSITION.
2. IN AREAS OF SEDIMENT REMOVAL WHERE A FIRM BOTTOM EXISTS 6 INCHES OF SOIL SHALL BE PLACED IN THE DRAINAGE WAY FOLLOWING REMOVAL ACTIVITIES. ACCEPTABLE SOILS SHALL INCLUDE THOSE SOILS DESCRIBED ON FIGURE 15. AREAS OF DRAINAGEWAY BACKFILL (i.e., FIRM BOTTOM) SHALL BE DETERMINED IN THE FIELD BASED ON MUTUAL CONCURRENCE BY VIACOM AND USEPA.
3. IN AREAS OF BANK SOIL REMOVAL, CLEAN SOIL SHALL BE PLACED TO APPROXIMATE GRADES PRIOR TO REMOVAL ACTIVITIES. ACCEPTABLE SOIL SHALL INCLUDE THOSE SOILS SOILS DESCRIBED ON FIGURE 15.
4. LIMITS OF BANK SOIL REMOVAL ARE NOT TO SCALE. SEE FIGURES 12 THROUGH 14 FOR LATERAL BANK SOIL REMOVAL LIMITS.

LEGEND

19+50 STATION NO. AS MEASURED FROM FROM CHEMUNG STREET OUTFALL

SEDIMENT TO BE REMOVED

BANK SOIL TO BE REMOVED

CLEAN BANK SOIL TO BE REMOVED TO ACCESS IMPACTED SOIL CLEAN SOIL SHALL BE REPLACED UPON REMOVAL OF IMPACTED SOIL.

MATERIAL TO BE DISPOSED OF AS TSCA AND NEW YORK STATE HAZARDOUS WASTE (PCB CONCENTRATION >35 ppm)

SCALE

40 40 80 FEET

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FIGURE 11

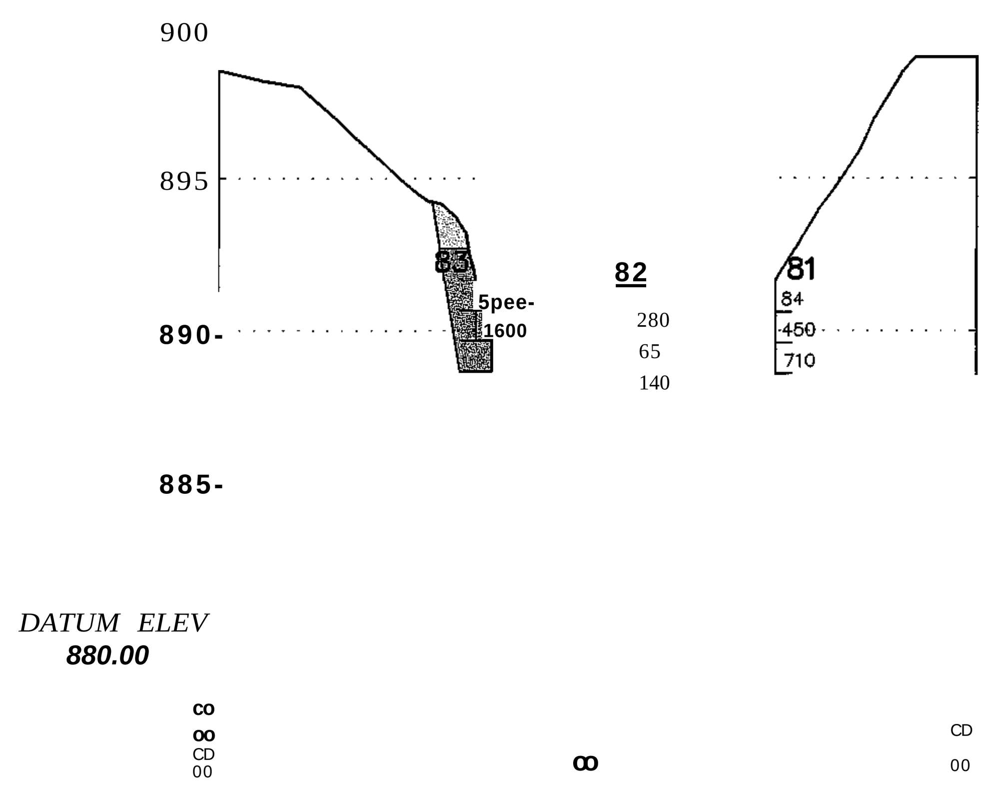
SEDIMENT/SOIL REMOVAL PLAN
STA. 10+00 TO 23+00

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

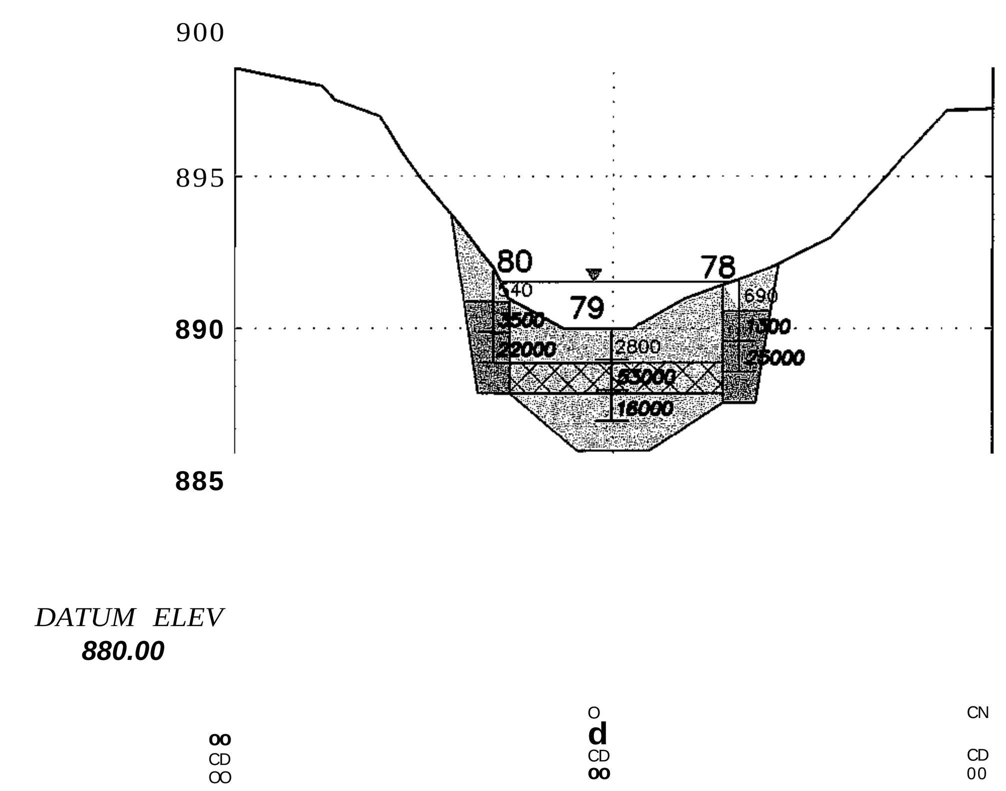
PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

DRAWN BY:	TEM/TNF	DATE:	4-17-01
CHECKED BY:	W.C. Smith	DATE:	4-19-01
APPROVED BY:	W.C. Smith	DATE:	4-19-01

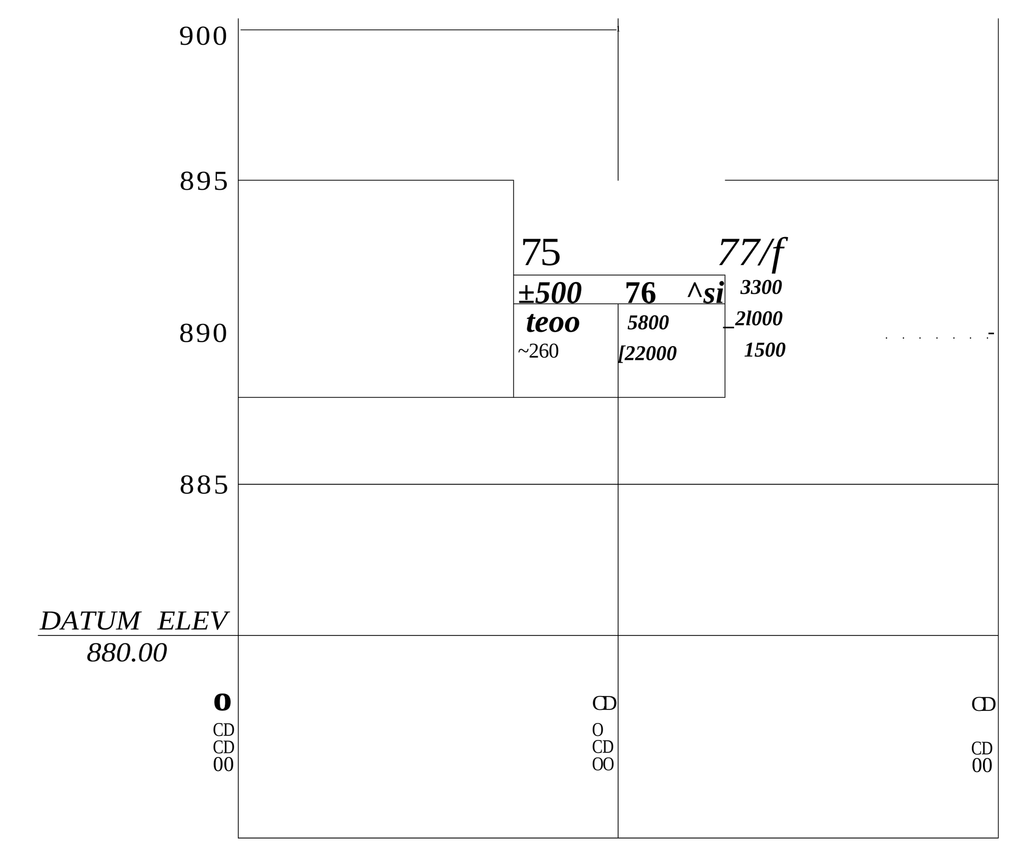
SIZE E SCALE: V 40' REV. DRAWING NUMBER 98245E9



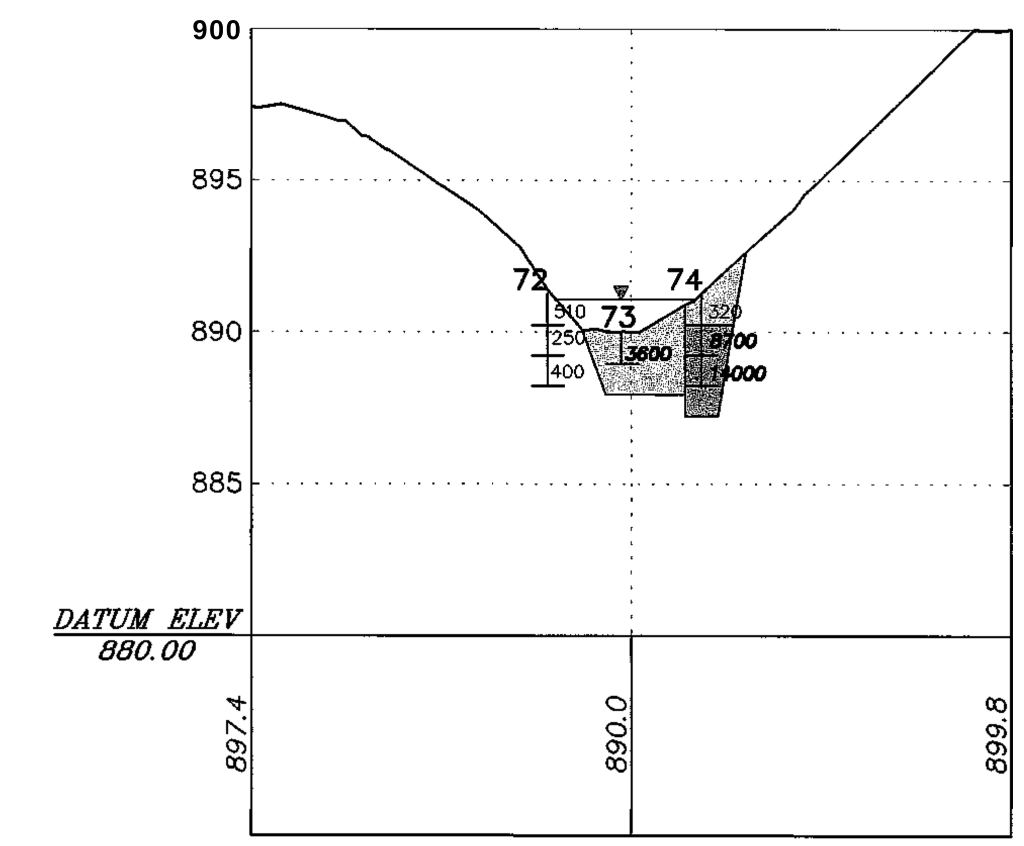
SECTION 0 + 00



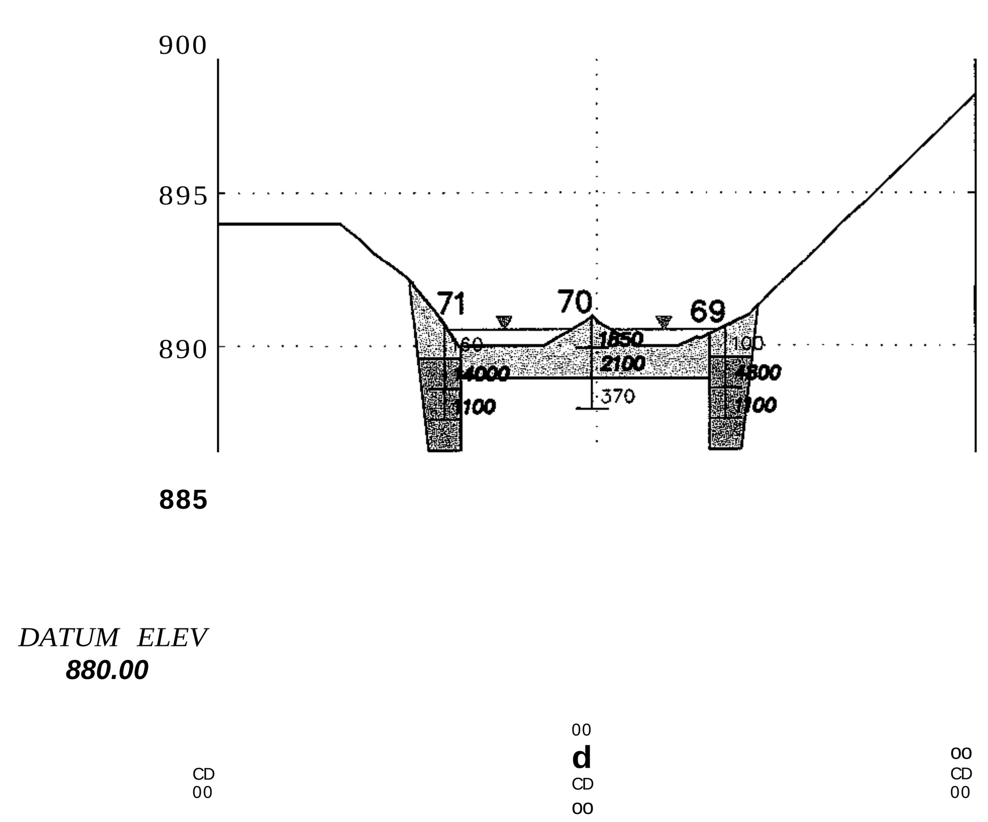
SECTION 1+00



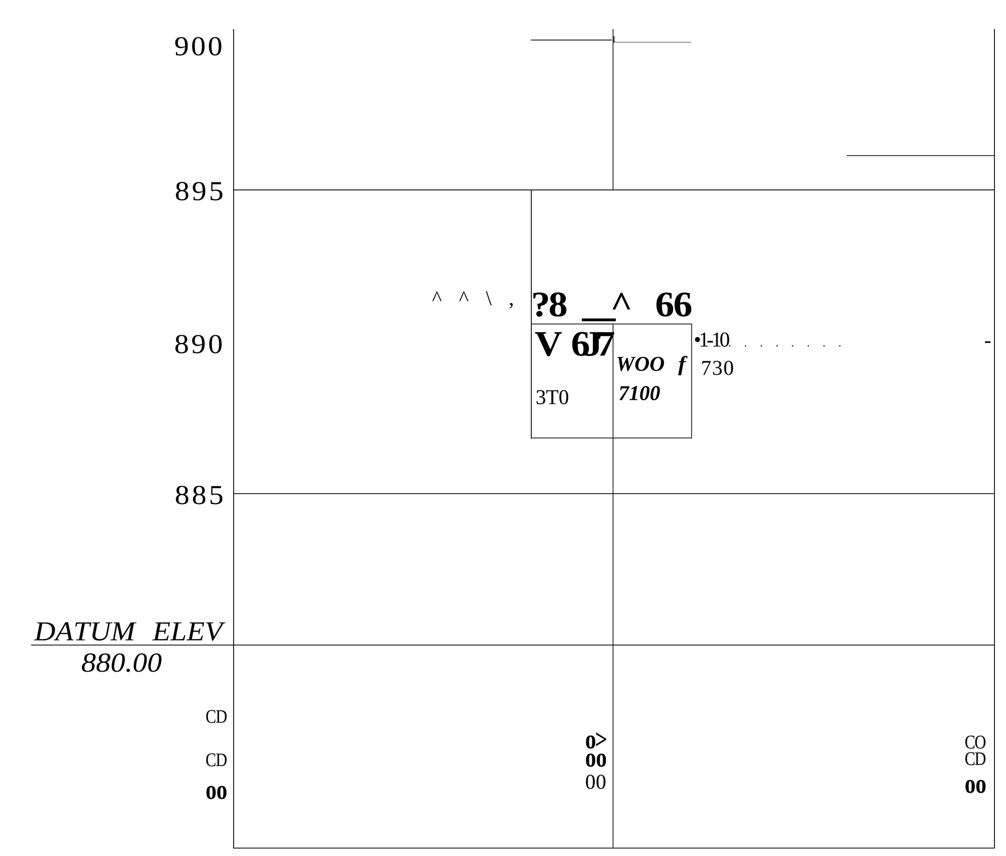
SECTION 1+80



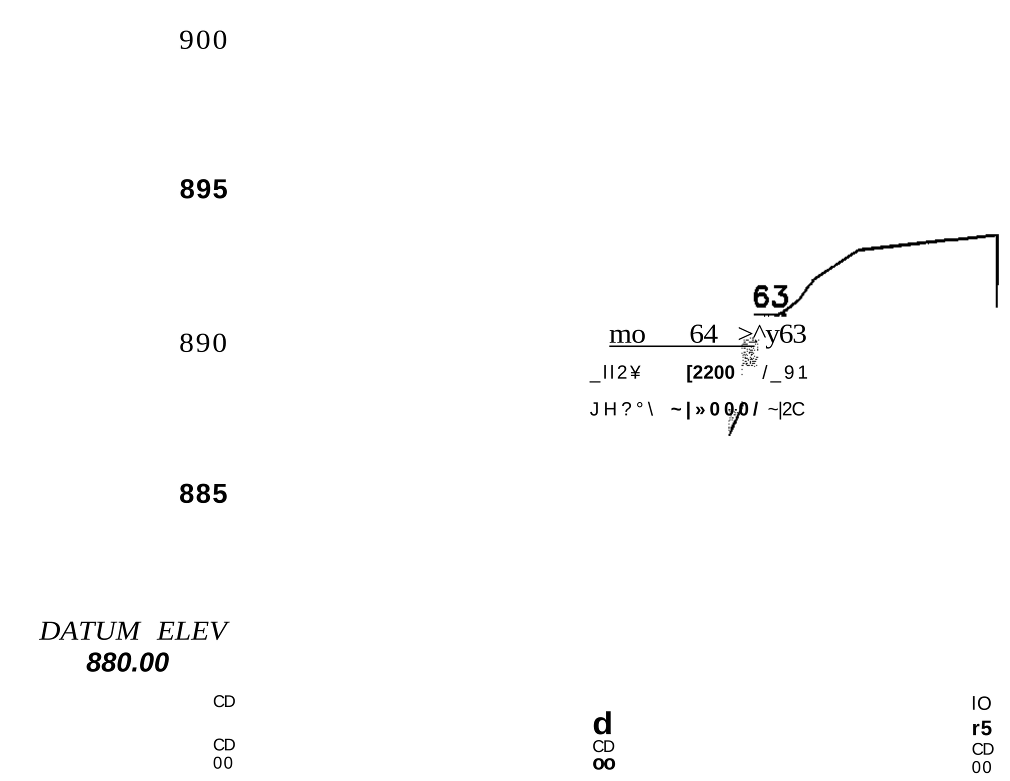
SECTION 2+50



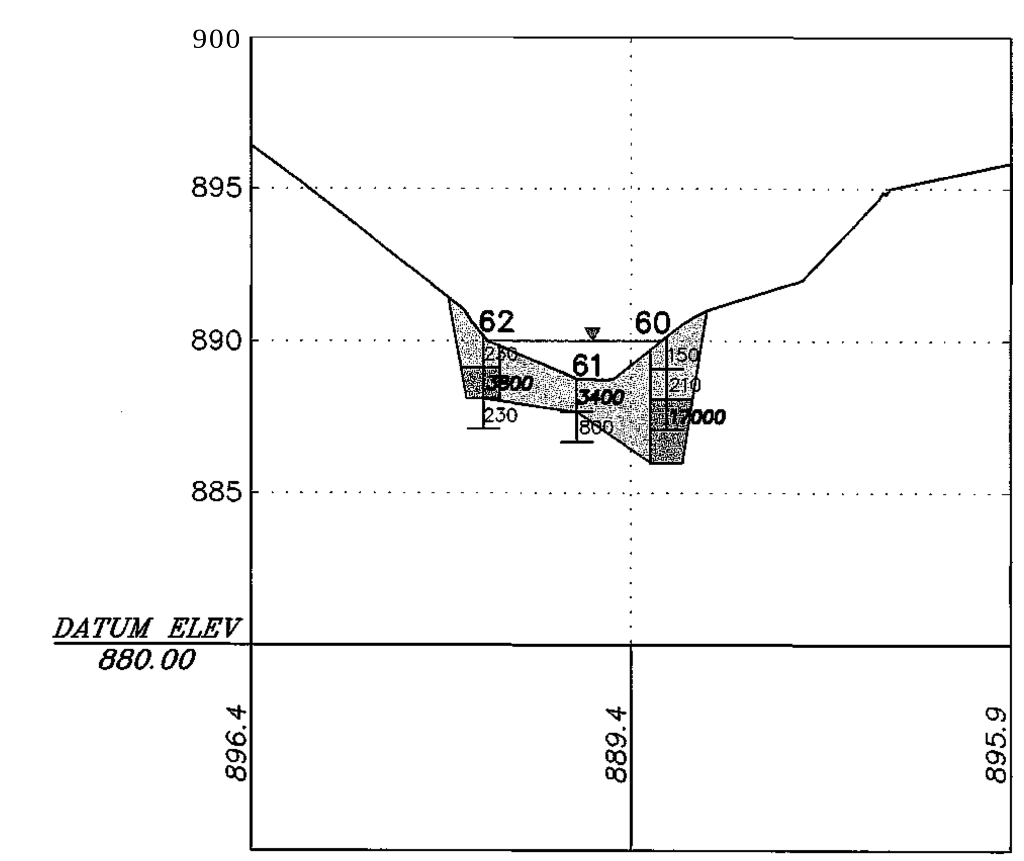
SECTION 3+50



SECTION 4+50



SECTION 5 + 50



SECTION 6+50

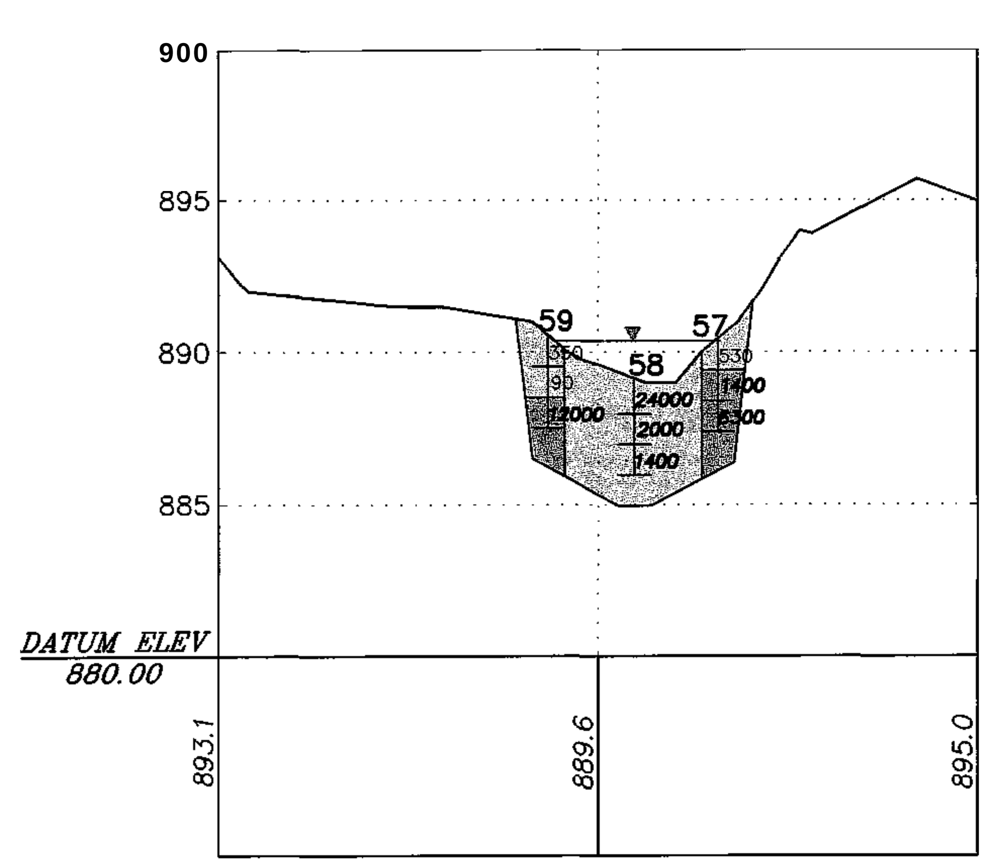
LEGEND

SEDIMENT TO BE REMOVED

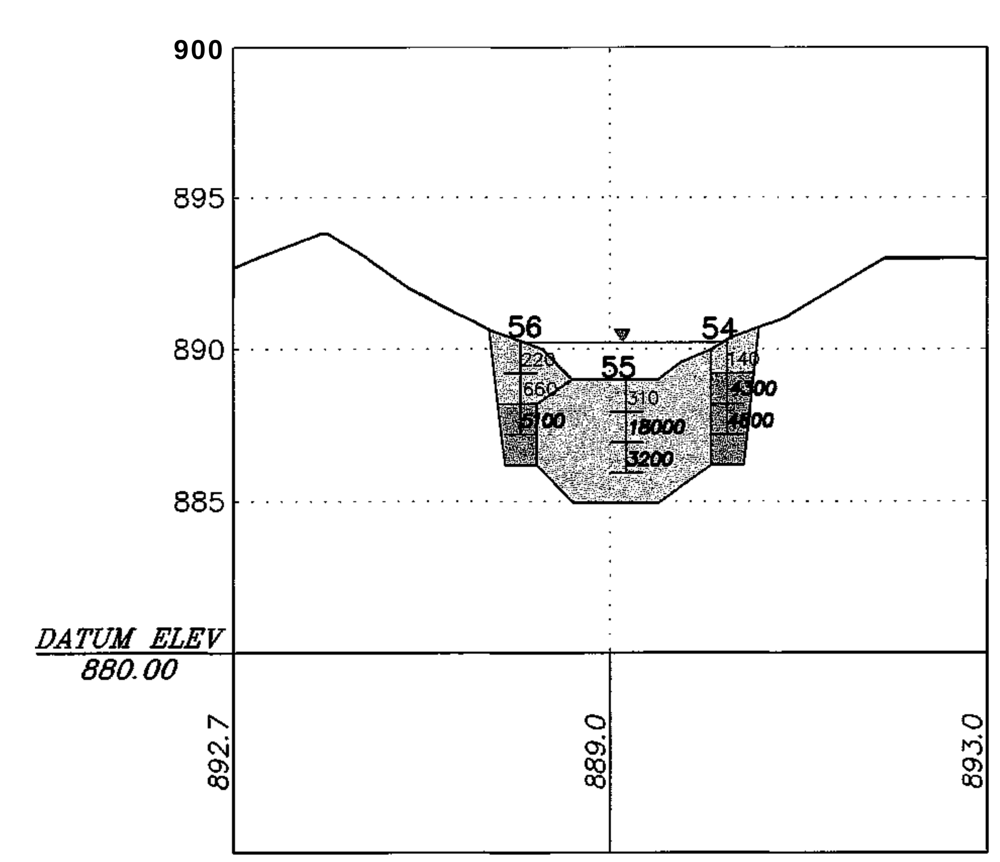
BANK SOIL TO BE REMOVED

CLEAN BANK SOIL TO BE REMOVED TO ACCESS IMPACTED SOIL CLEAN SOIL SHALL BE REPLACED UPON REMOVAL OF IMPACTED SOIL

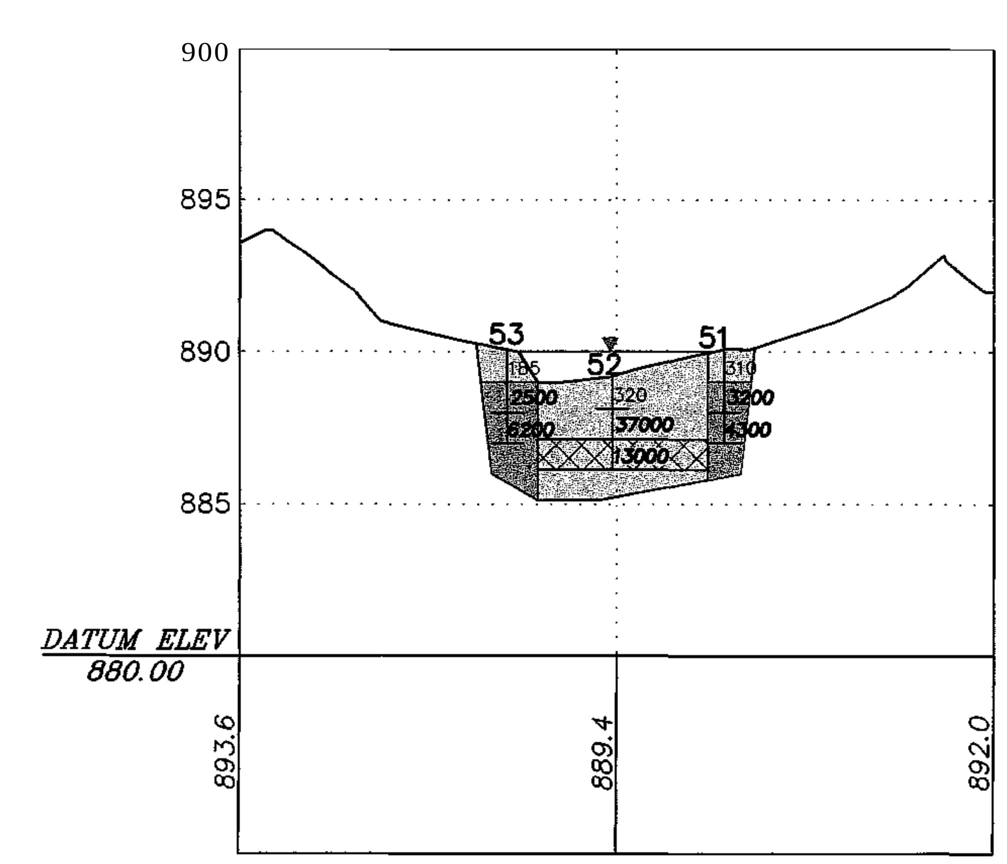
MATERIAL TO BE DISPOSED OF AS TSCA AND NEW YORK STATE HAZARDOUS WASTE (PCB CONCENTRATION >35 ppm)



SECTION 7+50



SECTION 8+50



SECTION 9 + 50

NOTES

1. SEE FIGURE 15 FOR TYPICAL BACKFILL DETAIL
2. SEE FIGURE 15 FOR BACKFILL MATERIAL SPECIFICATION

5X VERTICAL EXAGGERATION

HORIZONTAL SCALE

10 0 10 20 FEET

VERTICAL SCALE

0 10 FEET

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

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FIGURE 12
REMOVAL CROSS SECTIONS
STA. 0+00 TO 9+50

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E | SCALE: 1" = 20' | REV. X | DRAWING NUMBER

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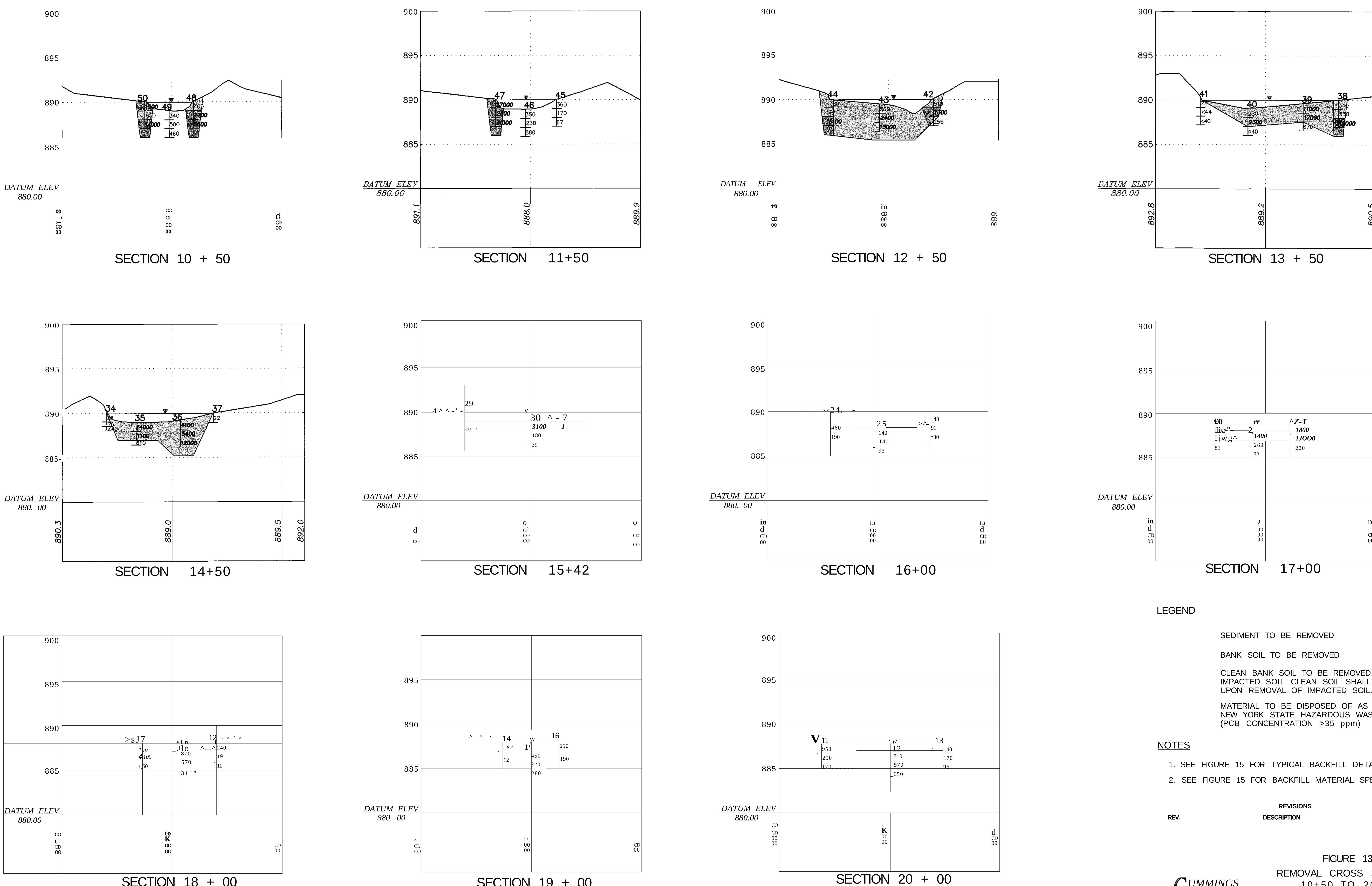
98245E11



LEGEND

SEDIMENT TO BE REMOVED

BANK SOIL TO BE REMOVED

CLEAN BANK SOIL TO BE REMOVED TO ACCESS IMPACTED SOIL CLEAN SOIL SHALL BE REPLACED UPON REMOVAL OF IMPACTED SOIL.

MATERIAL TO BE DISPOSED OF AS TSCA AND NEW YORK STATE HAZARDOUS WASTE (PCB CONCENTRATION >35 ppm)

NOTES

1. SEE FIGURE 15 FOR TYPICAL BACKFILL DETAIL
2. SEE FIGURE 15 FOR BACKFILL MATERIAL SPECIFICATION

5X VERTICAL EXAGGERATION

HORIZONTAL SCALE

10 0 10 20 FEET

VERTICAL SCALE

50 0 50 100 FEET

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED

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Monroeville, PA 15146
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FIGURE 13

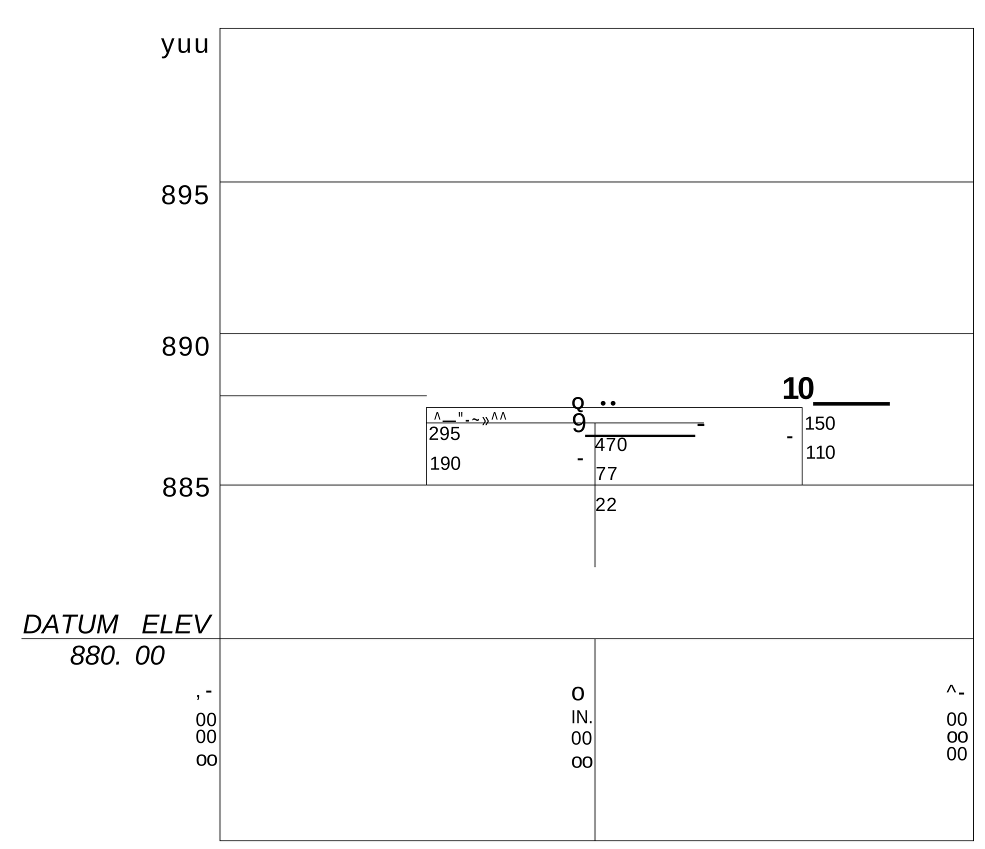
REMOVAL CROSS SECTIONS
10+50 TO 20+00

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

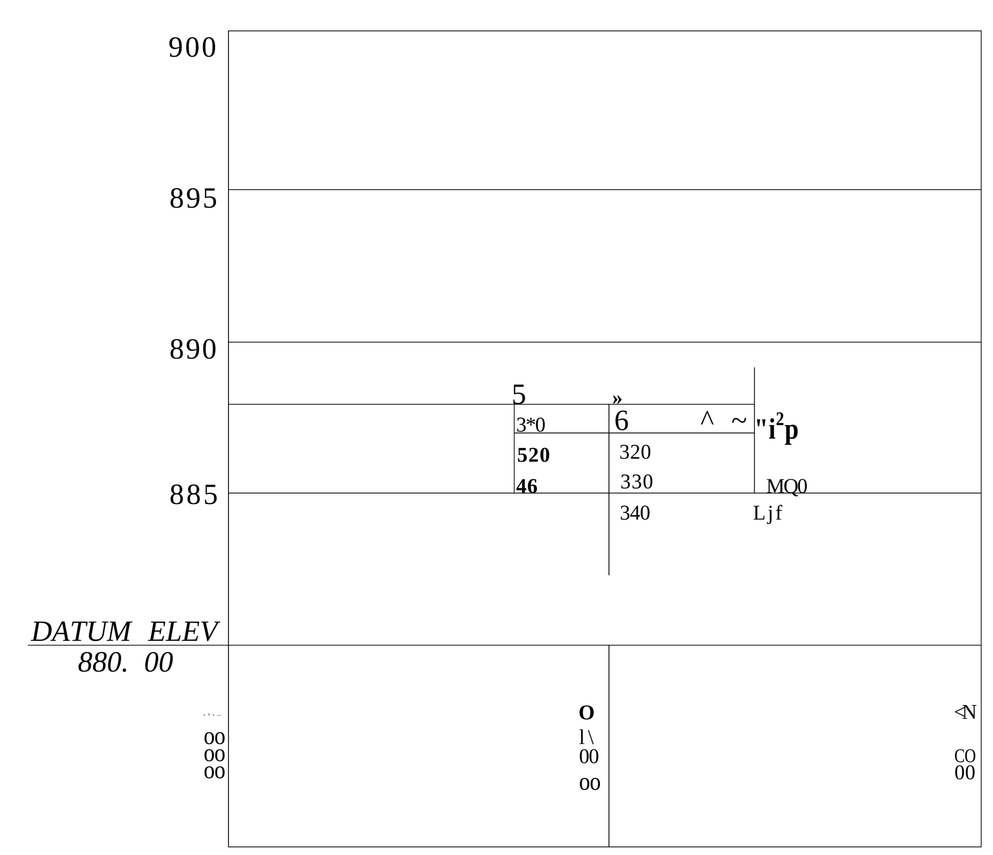
PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E | SCALE: AS SHOWN | DRAWING NUMBER 98245E12

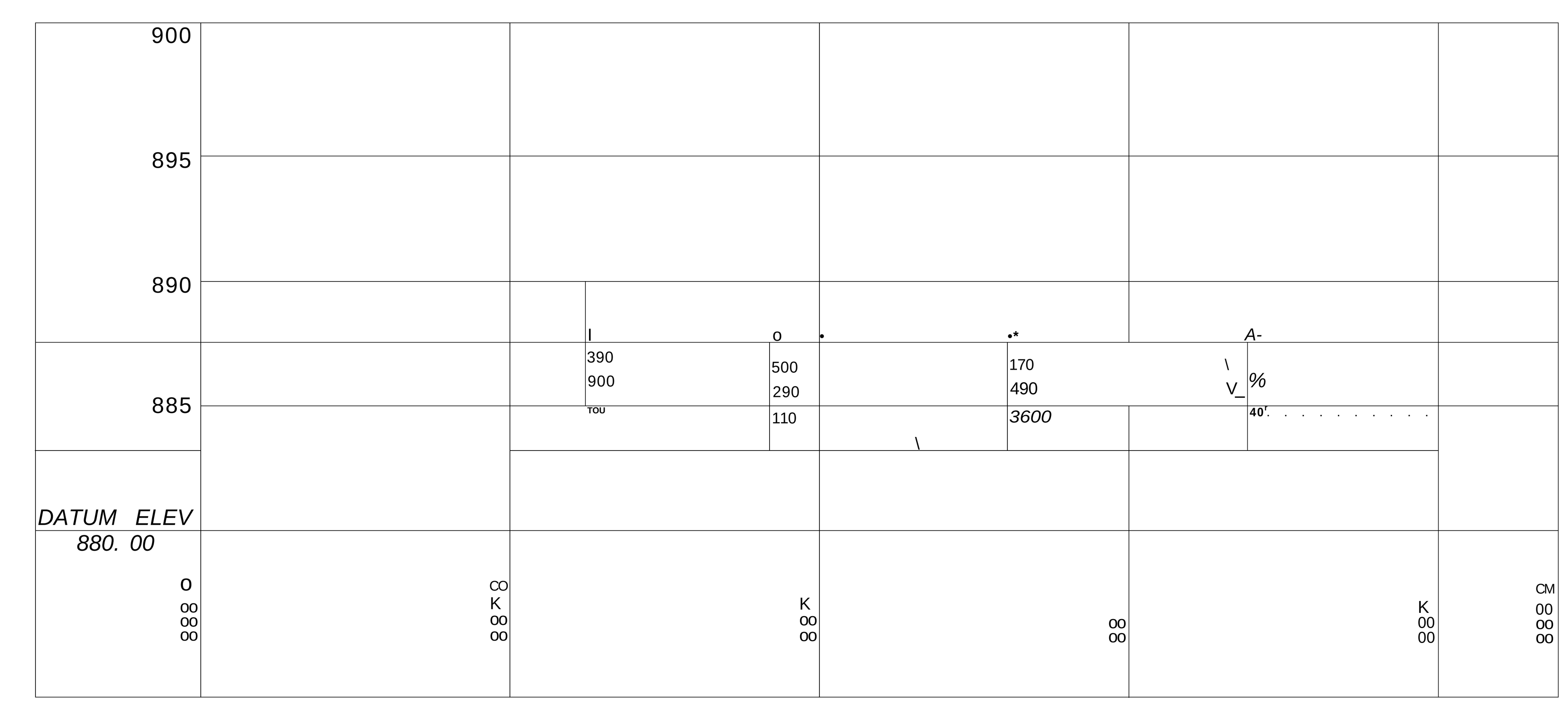
DRAWN BY: TEM/TNF DATE: 4-13-01
CHECKED BY: W.C. Smith DATE: 4-19-01
APPROVED BY: W.C. Smith DATE: 4-19-01



SECTION 21+00



SECTION 22+00



SECTION 23+00

LEGEND

SEDIMENT TO BE REMOVED

BANK SOIL TO BE REMOVED

CLEAN BANK SOIL TO BE REMOVED TO ACCESS IMPACTED SOIL CLEAN SOIL SHALL BE REPLACED UPON REMOVAL OF IMPACTED SOIL

MATERIAL TO BE DISPOSED OF AS TSCA AND NEW YORK STATE HAZARDOUS WASTE (PCB CONCENTRATION >35 ppm)

NOTES

1. SEE FIGURE 15 FOR TYPICAL BACKFILL DETAIL
2. SEE FIGURE 15 FOR BACKFILL MATERIAL SPECIFICATION

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

5X VERTICAL EXAGGERATION

HORIZONTAL SCALE

10 0 10 20 FEET

VERTICAL SCALE

50 0 50 100 FEET

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FIGURE 14
REMOVAL CROSS SECTIONS STA. 20+00 TO 23+00

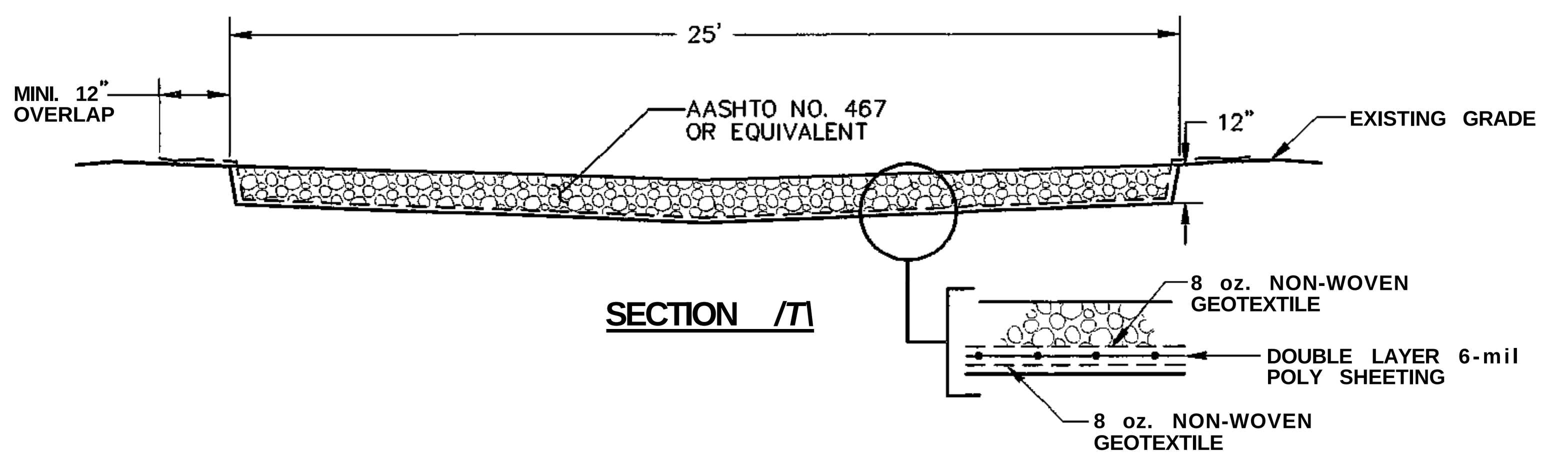
KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

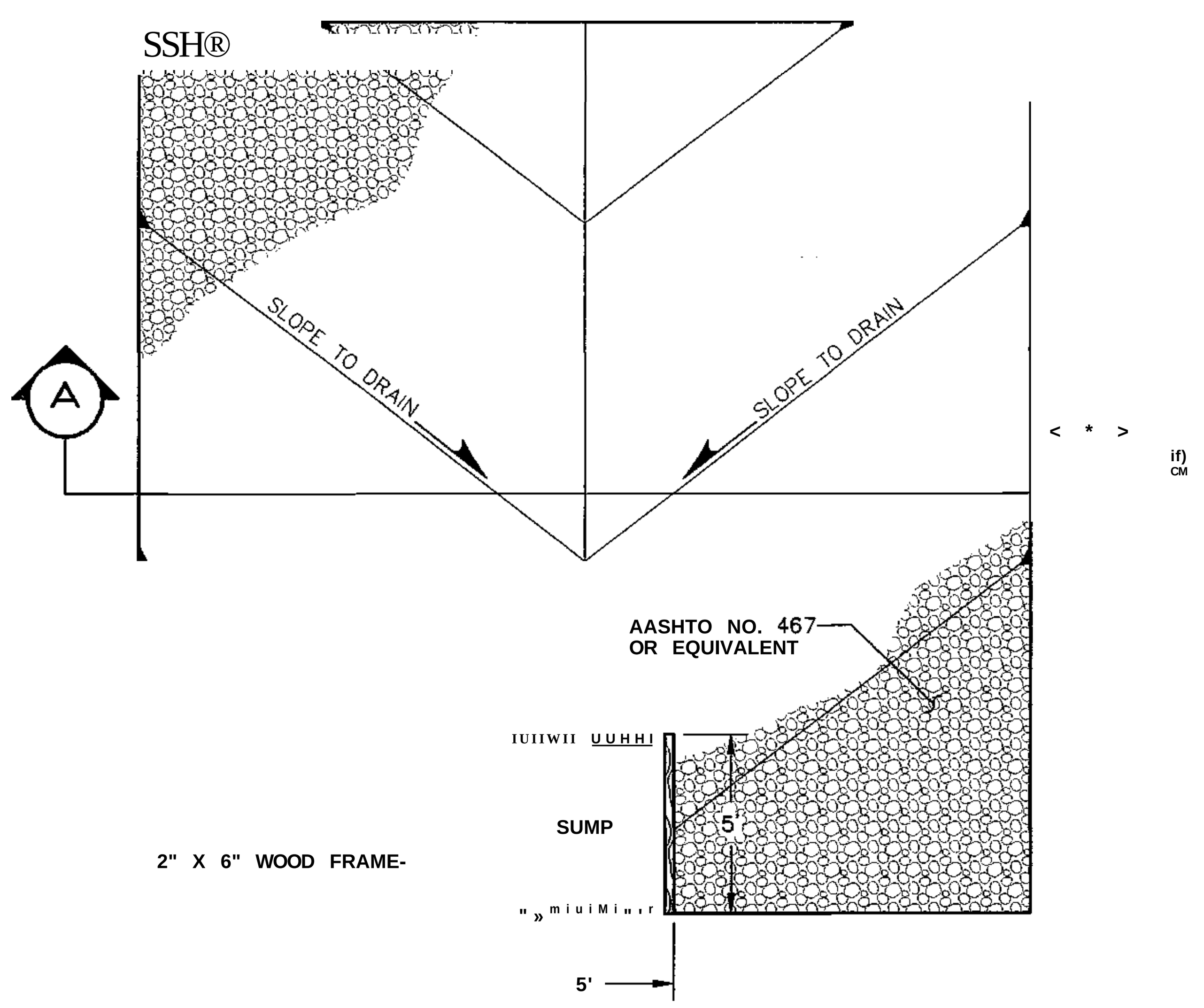
SIZE E | SCALE: AS SHOWN | DRAWING NUMBER

DRAWN BY:	TEM/TNF	DATE:	4-13-01
CHECKED BY:	W.C. Smith	DATE:	4-19-01
APPROVED BY:	W.C. Smith	DATE:	4-19-01

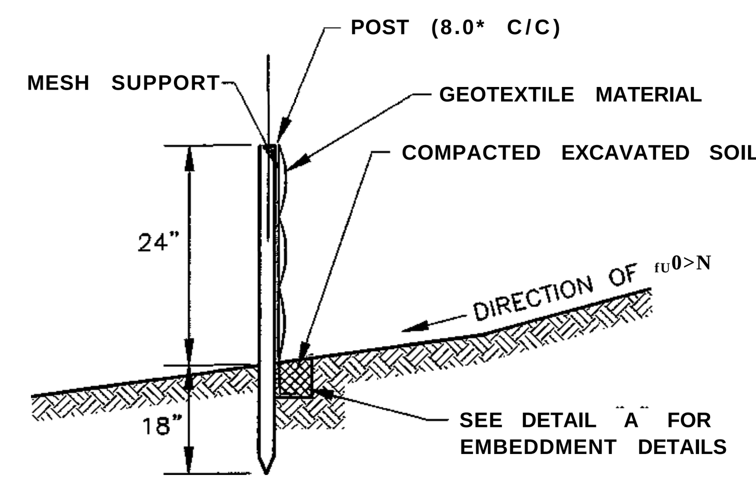
98245E13



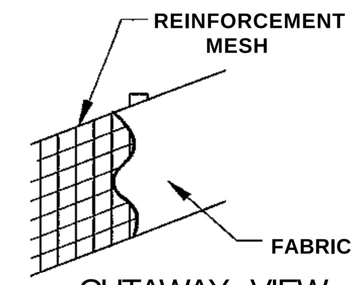
SECTION /T\



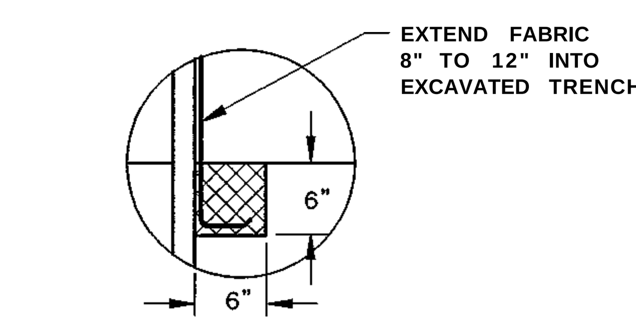
DECONTAMINATION PAD
PLAN VIEW
(NTS)



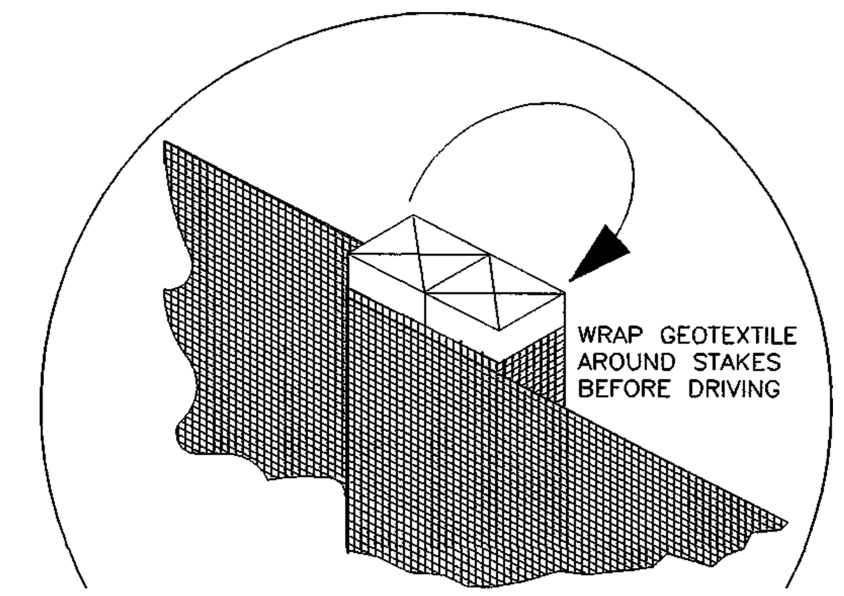
ELEVATION



CUTAWAY VIEW



DETAIL A
ANCHORING SILT FENCE



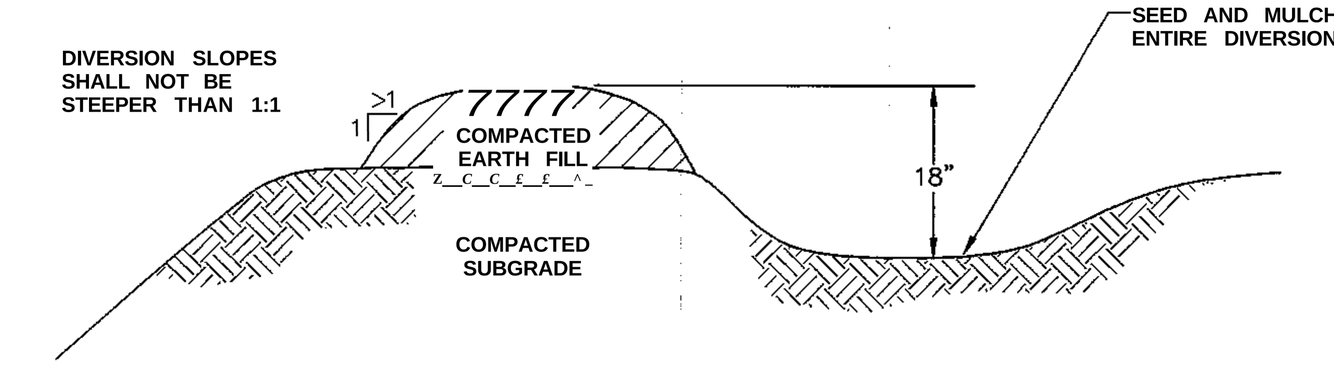
DETAIL B
JOINING SECTIONS
OF SILT FENCE

SILT FENCE DETAIL

(NTS)

SPECIFIC NOTES:

1. POST SHALL BE 2" X 2" WOOD STAKES PLACED A MAXIMUM OF 8.0' CENTER TO CENTER.
2. GEOTEXTILE MATERIAL SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
3. WHEN TWO SECTIONS OF GEOTEXTILE MATERIAL ADJOIN EACH OTHER, THE GEOTEXTILE SHALL BE WRAPPED AROUND THE TWO STAKES AND THE STAKES SHALL BE DRIVEN INTO THE GROUND AS ONE UNIT.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE WHEN ACCUMULATIONS REACH 1/2 THE ABOVE GROUND HEIGHT OF SILT FENCING, OR AS REQUIRED BY THE CONSTRUCTION MANAGER.
6. MESH SHALL BE INDUSTRIAL POLYPROPYLENE OR STEEL MESH WITH MAXIMUM 6" OPENING=1" MINIMUM 14 GAUGE.
7. SILT FENCING SHALL BE INSTALLED PARALLEL TO EXISTING CONTOURS OR CONSTRUCTED LEVEL ALIGNMENTS. ENDS OF FENCING MUST BE EXTENDED 8.0 FEET, TRAVELING UPSLOPE AT 45 DEGREES TO THE ALIGNMENT OF THE MAIN FENCING SECTION.

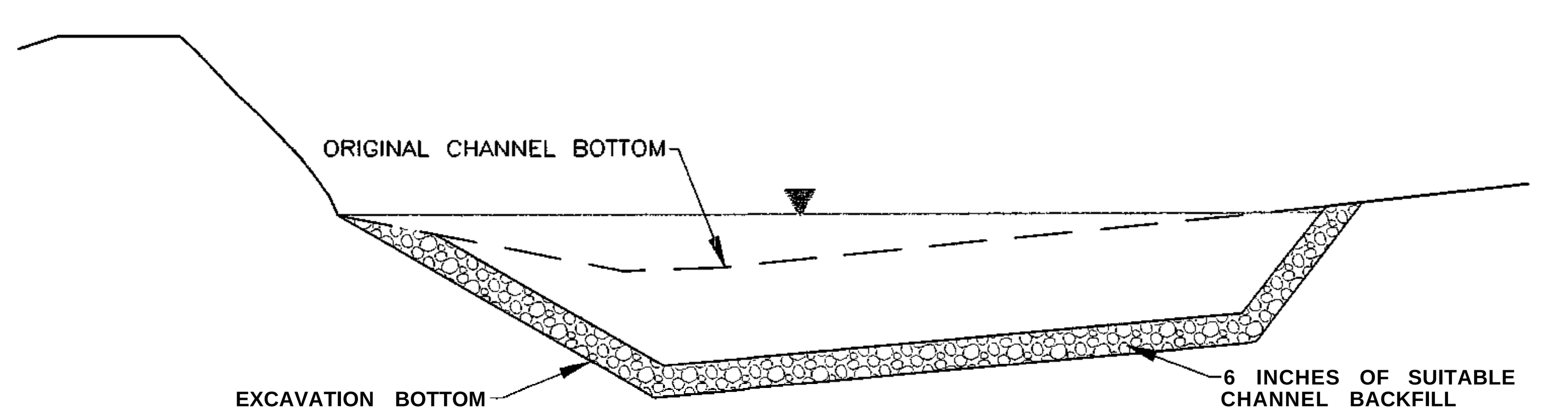


TEMPORARY DIVERSION DETAIL

(NTS)

SPECIFIC NOTES:

1. ALL TEMPORARY DIVERSIONS SHALL HAVE UNINTERRUPTED POSITIVE GRADE AND SHALL MINIMIZE EROSION.
2. DIVERTED RUNOFF FROM A DISTURBED AREA SHALL BE CONVEYED TO THE APPROPRIATE SEDIMENT TRAP AS SPECIFIED ON THE CONTRACT DRAWINGS.
3. DIVERTED RUNOFF FROM AN UNDISTURBED AREA SHALL NOT OUTLET DIRECTLY INTO A STABILIZED AREA AT AN EROSIVE VELOCITY.
4. ALL TREES, BRUSH, STUMP OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
5. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO THE LINES, GRADES, AND CROSS SECTIONS AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN AND BE FREE OF BANK PROJECTIONS OR OTHER IRREGULARITIES WHICH MAY IMPEDE NORMAL FLOW CONDITIONS.
6. DIVERSIONS SHALL BE COMPACTED BY TRAVERSING WITH TRACKED EARTH-MOVING EQUIPMENT AND STABILIZED WITH SEED AND MULCH.
7. ALL EARTH REMOVED AND NOT NEEDED FOR CONSTRUCTION SHALL BE PLACED SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
8. INSPECTION AND MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT, OR AS REQUIRED BY THE CONSTRUCTION MANAGER.



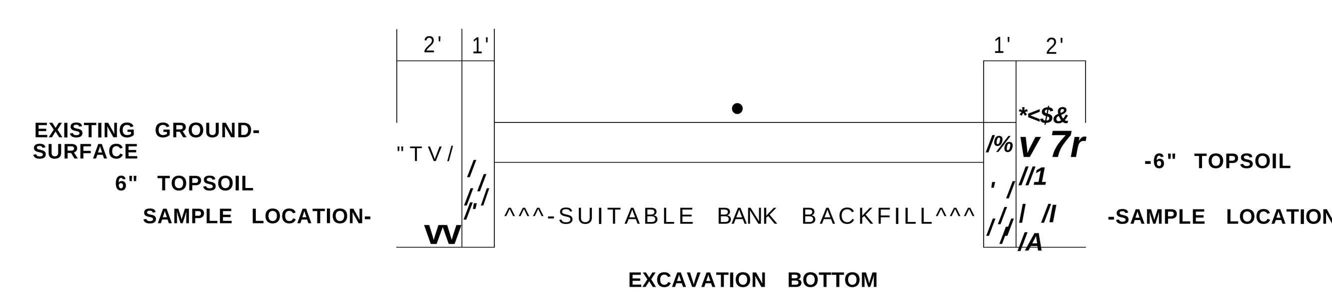
TYPICAL CHANNEL BACKFILL DETAIL

(NTS)

SPECIFIC NOTES:

1. SUITABLE CHANNEL BACKFILL SHALL BE NATURAL SOILS CLASSIFIED ACCORDING TO AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM) D 2487 AS ANY OF THE FOLLOWING: GW, GP, GM, SM, SW, SP, GC.
2. CHANNEL BACKFILL SHALL BE PLACED IN AREAS EXCAVATED TO A FIRM BOTTOM. DETERMINATION OF A FIRM BOTTOM SHALL BE MADE BASE ON MUTUAL CONCURRENCE BY VIACOM AND USEPA
3. BANK EXCAVATION SHALL BE BACKFILLED TO APPROXIMATE EXISTING GRADE.
4. SUITABLE BANK BACKFILLED SHALL BE NATURAL SOILS CLASSIFIED ACCORDING TO ASTM D 2487 AS ANY OF THE FOLLOWING: GW, GM, SM, SW, SP. GC, SC, ML, AND CL. UNACCEPTABLE BACKFILL MATERIALS INCLUDE SOILS CLASSIFIED IN ASTM D 2487 AS MH, CH, OH, AND OL; MATERIALS HAVING A MAXIMUM PARTICLE SIZE LARGER THAN EIGHT INCHES; MATERIALS CONTAINING DEBRIS, ROOTS, BRUSH, SOD, ORGANIC OR FROZEN MATERIALS; AND MATERIALS CONTAINING OTHERWISE OBJECTIONABLE MATTER.
5. DISTURBED BANK AREAS SHALL BE SEEDED AS FOLLOWS:

SEED	RATE (POUNDS/1,000 SQUARE FEET)
FERTILIZER 5-10-10, OR EQUIVALENT	14
EMPIRE BIRDSFOOT TREFOIL OR COMMON WHITE CLOVER, AND	0.20
TALL FESCUE AND	0.45
REDTOP OR RYEGRASS	0.05 0.10
MULCH, SMALL GRAIN STRAW, SECURED WITH WOOD CELLULOSE (HYDROSEED APPLICATION) OR MULCH NETTING (MANUAL APPLICATION)	90



TYPICAL BANK BACKFILL DETAIL

(NTS)

6. MATERIAL PLACED FOR THE TOPMOST SIX INCHES OF BANK BACKFILL WILL BE SUITABLE TOPSOIL, DEFINED AS SELECTIVELY EXCAVATED NATURAL, FRIABLE SOIL THAT IS CAPABLE OF PRODUCING GRASS OR OTHER VEGETATION. TOPSOIL SHALL BE REASONABLY FREE FROM UNDERLYING SUBSOIL, CLAY LUMPS, OBJECTIONABLE WEEDS, LITTER, BRUSH, OR OTHER MATERIAL THAT MAY BE HARMFUL TO PLANT GROWTH OR BE A HINDRANCE TO GRADING, PLANTING, OR MAINTENANCE OPERATIONS. TOPSOIL WILL NOT CONTAIN MORE THAN 5 PERCENT BY VOLUME OF PARTICLES LARGER THAN ONE INCH IN ANY DIMENSION. TOPSOIL WILL CONTAIN BETWEEN 1 AND 20 PERCENT ORGANIC MATTER AS DETERMINED BY LOSS ON IGNITION IN ACCORDANCE WITH ASTM D 2974, AND WILL HAVE A PH OF BETWEEN 6 AND 7.5.
7. BANK BACKFILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 18 INCHES IN THICKNESS AND COMPACTED. BACKFILL WILL BE TRACKED IN DURING PLACEMENT, BUT NOT COMPACTED TO A SPECIFIC CRITERION. EACH LIFT OF SUITABLE FILL WILL BE COMPACTED WITH A MINIMUM OF FOUR PASSES OF APPROPRIATE SPREADING EQUIPMENT. TOPSOIL WILL BE COMPACTED WITH A MINIMUM OF ONE PASS OF APPROPRIATE SPREADING EQUIPMENT.

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED

FIGURE 15

DETAILS

PUMMINGS
- I V CONSULTANTS, INC.
CORPORATE HEADQUARTERS
339 Haymaker Road:
Parkway Building, Suite 201
Monroeville, PA 15146
(412) 373-5240
Fax: (412) 373-5242:

KENTUCKY AVENUE WELLFIELD SITE - OU3
HORSEHEADS, NEW YORK

PREPARED FOR
VIACOM INC.
PITTSBURGH, PENNSYLVANIA

SIZE E | SCALE: AS SHOWN | REV. X | DRAWING NUMBER 98245E14

DRAWN BY: T.N. Fitzroy DATE: 2-12-01
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APPROVED BY: W.C. Smith DATE: 4-19-01