



**CONESTOGA-ROVERS  
& ASSOCIATES**

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February 10, 2012

Reference No. 007097

VIA EMAIL ONLY (PDF)

Mr. Peter Ramanauskas  
U.S. Environmental Protection Agency, Region 5  
77 West Jackson Blvd., LU-9J  
Chicago, IL 60604-3590

Dear Mr. Ramanauskas:

Re: AOI #50 Under EPA's RCRA Corrective Action Program  
DUCO Stores – Building 34  
660 South Boulevard East, Pontiac, Oakland County, Michigan  
Facility ID No. 0-0018277  
MDEQ Confirmed Release Nos. C-0235-90, C-0776-90, and C-1831-91

This letter was prepared by Conestoga-Rovers & Associates, Inc. (CRA), on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, to provide the EPA with additional information related to AOI #50 (DUCO Stores) under EPA's RCRA Corrective Action program. The intent is to provide the EPA with enough information to ultimately allow for closure of the UST system releases through the facility-wide RCRA Corrective Action program as per the RCRA Corrective Action Complete with Controls submitted in June 2011.

A Leaking Underground Storage Tank Closure Report (Closure Report) was prepared by CRA, on behalf of Motors Liquidation Company (MLC), and submitted to the MDEQ in October 2010. In letters dated April 20, 2011 and June 20, 2011, MDEQ completed an audit of corrective actions to the Closure Report. Attachment A presents the MDEQ comments and CRA's responses to MDEQ comments from the April 20, 2011 and June 20, 2011 audit of corrective actions. As presented in Attachment A, the following primary concerns are identified by the MDEQ:

- Is data relevant, reliable and representative of the contaminant concentrations
- Is comparison to generic criteria relevant
- Justification of verification of soil remediation (VSR) sampling protocol
- Analytical results from a soil sample collected from SB-7-08 identified TCE and other hazardous substances (1,1,1-trichloroethane and 1,1-dichloroethene)
- Extent of soil and groundwater contamination delineation

Based on review of the concerns stated above, the following justifications are presented in Attachment A:

- CRA believes the data provided in the Closure Report is relevant, reliable and representative of the contaminant concentrations and that no further sampling is necessary to verify historical results

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Employment  
Opportunity Employer

REGISTERED COMPANY FOR  
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ENGINEERING DESIGN



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February 10, 2012

2

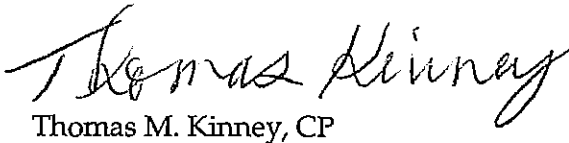
Reference No. 007097

- The comparison to generic criteria is applicable for the Site based on the weight of evidence approach
- CRA completed VSR sampling in accordance with MDEQ protocol at the time
- CRA concurs that VOCs not associated with the UST releases were detected in soil at one location
- Extent of gasoline and diesel related constituents in soil and groundwater has been delineated

Based on review of MDEQ comments and CRA's responses (Attachment A), the only items that CRA believes need any additional assessment are the chlorinated hydrocarbons in the vicinity of the hazardous materials storage pad, and an assessment of the adjacent utility corridor.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES



Thomas M. Kinney, CP

TMK/MJC/bw/1/Det.  
Encl.

cc: Grant Trigger, RACER  
Dave Favero, RACER  
Scott Adamowski, CRA

## ATTACHMENT A

### MDEQ COMMENTS AND CRA'S RESPONSES

Conestoga-Rovers & Associates, Inc. (CRA) on behalf of Revitalizing Auto Communities Environmental Response (RACER) presents this response to MDEQ comments presented in the April 20, 2011 and June 20, 2011 letters. The responses are intended to address the comments from a RCRA Corrective Action perspective.

The specific MDEQ comments below were presented in the **April 20, 2011** letter. Responses follow the comments.

#### **1. MDEQ Comment**

*Compliance with Section 21311a. (1)(a) of the NREPA, and the Risk-Based Corrective Action (RBCA) process which requires that both the maximum contaminant concentrations and the full horizontal and vertical extent of contamination be determined to below Tier 1 Residential Risk-Based Screening Levels (RBSL) as specified in RRD Operational Memorandum No.1, Attachment 1, has not been accomplished. In fact, an adequate RBCA evaluation (as required) cannot be conducted without first identifying all potential source areas, investigating them to determine the maximum contaminant concentrations for all contaminants of concern, and generating data that is relevant reliable and representative.*

#### **CRA Response**

Based on the information provided in the Closure Report and Responses to Comments 2 and 3 (below), this has been completed.

#### **2. MDEQ Comment**

*The data provided in the Closure Report, upon which CRA has based their justification for closure is not acceptable to the DEQ for that purpose. The data presented in the Closure Report has not been demonstrated to be relevant, reliable or representative of the contaminant concentrations which may be present on-site. With respect to the pre-1998 data, current DEQ guidance, while not specific to soil data generated prior to the requirement for methanol preservation, does support the statutory and rule provisions that requires analytical data used to document compliance with the provisions of the statute and the cleanup criteria to be relevant, representative, and reliable to define the nature and extent of contamination. It is well documented that contaminant concentrations detected in soil samples collected in 1997 (or earlier) are underestimated, even when collected by persons well versed in the best sample collection techniques at the time.*

*With respect to the 2008 data, CRA has not demonstrated that the requirements of Method 5035A, were followed with regard to the selection of an appropriate sample preservative. Specifically, CRA has not demonstrated that the use of purified water is appropriate as a preservative for the soil samples collected based on 1) the carbonate content of the soil, and 2) the lack of biological activity in the soil.*

*To validate the 2008 dataset, it will be necessary to provide information that demonstrates for all samples preserved with purified water, the following:*

- a. The soils contain sufficient carbonate content to interfere with preservation by sodium bisulfate. Please be advised that effervesce testing must be from within the soil impact area at each sample location and cannot rely on testing from other areas on the property.*
- b. The soils are not biologically active; and therefore, not subject to the requirement of immediate onsite analysis provided in Method 5035A Appendix A Section A.1.3.*

### **CRA Response**

CRA believes the data provided in the Closure Report is relevant, reliable and representative of the contaminant concentrations. The sample collection and laboratory analysis for the samples collected prior to 1998 was completed in accordance with the appropriate MDEQ Guidance at the time. Further, it is well documented that natural attenuation of gasoline-related VOCs in soil over a 13- to 20-year period (dates of historical samples) could be significant and could cause the historical VOC levels to be overestimated when compared to current conditions. These samples, along with the additional samples collected in 2008 allow for a reasonably representative dataset. Therefore, additional investigation to verify historic sampling is not necessary.

With respect to the 2008 data, CRA collected the samples in accordance with Method 5035A and TestAmerica froze the samples preserved in purified water upon receipt (within 48 hours) and analyzed the samples within 14 days as per Method 5035A. Each sample was preserved with methanol. The laboratory (TestAmerica) analyzed the samples preserved with methanol first and reported those results if there were detections. If there were no detections in the methanol preserved sample, low level VOC analysis was performed using the purified water preserved and frozen samples and the purified water results were reported instead. Eight of the nine soil samples collected by CRA in 2008 were collected and analyzed using low-level methodology with purified water. These samples were collected from soil borings SB-1-08 through SB-6-08. No VOCs were detected in these eight samples. CRA believes the preservation and analysis of the low-level VOCs performed in 2008 were completed in accordance with Method 5035A.

CRA did not perform effervescence testing to document each sample collected would effervesce with the sodium bisulfate preservation. However, it should be noted that the

significant carbonate content in soils within southeast Michigan typically causes effervescence when preserved with sodium bisulfate. Due to this common potential for effervescence, the Federal Contract Laboratory Program identifies purified water preservation as an option as opposed to sodium bisulfate preservation of soil samples in adherence to Method 5035A. The definition of biologically active soils via Method 5035A is somewhat vague; however, CRA does not believe the level of bioactivity would significantly degrade the VOCs within the 48-hour hold time prior to freezing. This is supported in the text of Appendix A of Method 5035A, Section A.8.3.2 – Collection with reagent water, preservation by refrigeration at  $4 \pm 2$  °C for 48 hours or less and immediate laboratory analysis or freezing storage at  $< -7$  °C for subsequent vapor partitioning. This section summarizes the purified water technique as employed and includes a reference to Section A.8.2.2, which presents the limitations associated with "biologically active soil". This section defines biologically active soils as "aerated garden soil or fertilized soil" and references a study where aromatic hydrocarbon losses of 20 to 30 percent were observed within 48 hours. This limitation does not apply to soil samples collected from AOI 50. The potential of carbonate minerals in soil samples that would effervesce in the sodium bisulfate is far greater than the potential of encountering biologically active soils. CRA believes the soil samples were collected and analyzed in accordance with Method 5035A, therefore, additional sampling to verify results is not necessary.

### 3. MDEQ Comment

*The Closure Report indicates CRA has compared the detected contaminant concentrations to the generic risk-based criteria without first determining that the generic criteria are applicable to the site. When a substance that has been released is comprised of multiple contaminants (e.g., gasoline, diesel fuel, etc.), a comparison of contaminant concentrations to the generic  $C_{sat}$  is not appropriate. The  $C_{sat}$  for an individual chemical is the estimated concentration at which the chemical concentration in water, gas, and sorbed to solids, is at saturation. It is a theoretical maximum concentration above which a chemical may be present as non-aqueous phase liquid (NAPL), but does not take into account any chemical mass that might be in a NAPL state. However, this is true only for NAPL composed entirely of that single chemical. The presence of multiple contaminants has the effect of lowering the concentration at which saturation of any one compound might occur. With multi-chemical mixtures, it is possible (likely) for NAPL to be present when no single chemical approaches its  $C_{sat}$  concentration. The absence of free product or observable free phase contamination does not confirm the absence of NAPL within the soil matrix.*

*An effort must be made to demonstrate free phase contamination is not present in soils remaining at the Site. Without such information, comparison to the generic criteria is not appropriate; and therefore, it could not be demonstrated that compliance with the applicable cleanup criteria has been achieved.*

## **CRA Response**

The Closure Report described why CRA believes the generic criteria are applicable for the Site. To clarify, CRA used a "weight of evidence" approach (Sudan IV jar test, PID, visual/olfactory evidence, standard analytical values, etc.) to assess the potential presence of free phase constituents. Based on weight of evidence from the field and analytical laboratory testing, no evidence of free phase contamination was observed or verified. Further, based on data from the permanent groundwater monitoring wells and the borehole groundwater sampling points (temporary wells), no evidence of free product was observed or detected. Accordingly, comparison to generic criteria appears to be relevant and appropriate for evaluation of soil data collected at the DUCO Stores UST area. Therefore, CRA believes no additional sampling is necessary to confirm the presence of NAPL and the comparison to generic criteria is appropriate for the RCRA Corrective Action program. Sections 3.2.1 through 3.2.4 of the Closure Report discuss the weight of evidence investigation methodologies and results.

The MDEQ comments below were presented in the **June 20, 2011** letter.

## **1. MDEQ Comment**

*The report lacks sufficient justification for the Verification of Soil Remediation (VSR) samples collected. According to the information of Page 7 of the October 10, 2010, CRA report, the VSR sampling does not appear to have been biased sampling (i.e. "the majority of floor and sidewall samples were predetermined").*

### **CRA Response**

The MDEQ comment is in regard to the verification sampling performed at the time of the October 1997 excavation. CRA collected 49 soil samples from the excavation including 24 samples from the excavation floor and 25 samples from the excavation sidewalls. CRA completed VSR sampling in accordance with the MDEQ-ERD Verification of Soil Remediation Guidance Document (April 1994, Revision 1), which was the applicable guidance at that time. When verifying remediation of medium- or large-sized areas, statistical sampling strategies are generally recommended. Therefore, biased sampling was not completed. Medium-sized areas are generally defined as areas ranging from ¼ acre to three acres. Because the size of the excavation met the definition of a medium-sized area (approximately 18,000 square feet), the number of samples to be collected was determined based on application of a sampling grid for the area to be sampled. The majority of floor and sidewall sample locations were predetermined unless field evidence of impacts were observed, then biased samples were collected. As described in Section 3.2.1 of the Draft for Review Building 34 Excavation Summary Report, "Based on an estimated area of the excavation, a sample grid with a grid interval of 25 feet was established". Therefore, based on sampling protocol following applicable VSR guidance and the technical adequacy of the sampling, CRA does not believe additional verification sampling is necessary. Figure 3.2 from the Excavation Summary Report (attached) presents the Verification Sample Location Plan.

## **2. MDEQ Comment**

*On page 8 of the October 10, 2010, CRA report, CRA makes the statement that "Only Part 213 parameters are being evaluated in this Closure Report." This statement is made with the knowledge that at a minimum, tetrachloroethylene and trichloroethylene (TCE) were detected in previously collected soil samples within the area proposed for closure as indicated in the pretrex soil gas survey that was conducted in 1990 (NERI Report, September 1990). The most recent soil investigations conducted between April 2006 and December 2009 also identified TCE and other hazardous substances present in concentrations exceeding residential criteria.*

*If a release from the UST system is commingled with other sources, the party responsible for conducting the corrective actions needs to find a way to differentiate between the two sources. Contamination associated with the release from the UST system is assumed to be present within a contaminate plume until it is defined and the plumes are demonstrated to be distinguishable or the contamination from multiple sources within the plume can be distinguished from each other.*

*If the commingled sources of contamination are distinguishable, the extent of the regulated release is defined to the residential cleanup criteria, and the corrective actions conducted result in a remedy such that any remaining contamination associated with the regulated release was at or below the applicable unrestricted residential cleanup criteria, no further corrective action with respect to the release would be necessary, regardless of the presence of other contamination the area of the release. However, this does appear to be the situation at the above-referenced site. All contamination within the defined areas of the release must be defined and the closure must demonstrate the corrective actions are protective and consistent with the applicable land use based cleanup criteria for all contaminants within the plume.*

*According to the closure report, the corrective action activities for the release regulated pursuant to Part 213, result in a remedy that includes the implementation of an institutional control in the form of a Restrictive covenant (RC) which imposes land use restrictions.*

## **CRA Response**

One of the nine soil samples collected in 2008 and analyzed for Total Compound List VOCs had chlorinated VOCs detected. SB-7-08 was installed in 2008 within the former hazardous material handling storage pad and near the area of the former NERI investigation. Analytical results from the soil sample collected from SB-7-08 identified TCE and other hazardous substances (1,1,1-trichloroethane and 1,1-dichloroethene) present at concentrations exceeding drinking water protection and or groundwater surface water protection risk-based screening levels as per Part 213. Additionally, 1,1-dichloroethene was detected above the soil volatilization to indoor air inhalation risk-based screening level (SB-7-08/10.5-12.0 ft bgs). The use of drinking water is prohibited by the existing RC and risks associated with GSI are minimal because the distance to the nearest surface water body is greater than 0.5 miles. However, due to the exceedances of soil volatilization to indoor air inhalation, additional assessment activities will be proposed near the former hazardous material handling pad. An assessment of the storm sewer corridor will be conducted at the same time to verify that the corridor does not provide a preferential pathway for migration a substantial distance from impacted soils or groundwater in the vicinity of the former hazardous material handling pad and former USTs. See Figure 1 for soil analytical results compared against applicable MDEQ Cleanup Criteria (does not include drinking water of GSI).

### 3. MDEQ Comment

*Within the table on page 9, CRA incorrectly uses the soil saturation screening levels (Csat) to compare to site data. Csat screening levels are not appropriate to use at a site where the substance released is comprised of multiple contaminants.*

*Contrary to statements made on page 10, the absence of free product in a well does not equate to the absence of free product contamination with the soil matrix. To use the generic cleanup criteria for comparison to site data to evaluate risk, it must first be demonstrated that free phase contamination is not present or present at concentrations that do not pose a risk when left in place. The concentrations detected in soil samples collected from soil borings constructed across the property indicate the remaining concentrations exceed the effective solubility for one or more of the compounds detected, which is an indication that free phase contamination is likely present within site soils.*

*The generic Csat model assumes only one contaminant is present in the soil, not multiple contaminants. The individual Csat values presented in the criteria tables (and the equation used to develop the values) do not account for the effects of multiple contaminants being released to the soil. The presence of multiple contaminants has the effect of lowering the concentration at which saturation of any one compound might occur.*

*Although the effective solubility values generated by the DEQ are not promulgated criteria, in order to apply the promulgated criteria, one must first determine that it is applicable to the conditions at the site. Therefore, even in the absence of free phase contamination, to justify comparison to the generic criteria, it must be demonstrated that the physical and geological conditions of the site are consistent with the model assumptions. If not, then the application of the criteria based on the model or the application of the model itself is inappropriate. The DEQ has offered the effective solubility values or comparison to gasoline range organic (GRO) and diesel range organic (DRO) values of 50 parts per million, as ways to evaluate for the presence of free phase contamination. The DEQ cannot accept as a demonstration of compliance, a comparison to generic criteria that are not applicable if free phase contamination is present, without an effort to demonstrate free phase contamination is not present. An effort must be made to demonstrate free phase contamination is not present and the risks associated with the presence of free phase contamination must be adequately addressed both on and off-site.*

### CRA Response

See CRA response to the April 20, 2011 comment 3.

#### **4. MDEQ Comment**

*Figures 4.1, 4.2 and 4.3 appear to be incorrect. The cross section figure only identifies the 1991 excavation as going to 10 feet. According to the text and verification sample depth, the excavation appears to have extended to a depth of 20 feet. This is not reflected in the figures. Additionally, Figure 4.2 does not display the location of the storm sewer.*

#### **CRA Response**

Figures 4.1, 4.2, and 4.3 with changes identified are attached.

#### **5. MDEQ Comment**

*It is unclear what building is referenced as the "powerhouse".*

#### **CRA Response**

The "powerhouse" was the Pontiac Central Power House located approximately 250 feet south of the DUCO Stores UST area. The powerhouse was Building 22 (Building 22 was shown on Figure 2.2 of the Closure Report).

#### **6. MDEQ Comment**

*The soil boring logs for 13-19 were not included in the report.*

#### **CRA Response**

There are no soil borings 13-19. There were soil samples named EV-12 through EV-19, but these were collected from soil borings SB-8-08 through SB-12-08 as described in CRA Response 7.

#### **7. MDEQ Comment**

*Some of the data for samples collected were missing from the data tables; no data was included in the tables for samples identified as EV-12 through EV-19.*

#### **CRA Response**

Soil samples identified as EV-12 through EV-19 were collected from pre-selected intervals in soil borings SB-8-08 through SB-12-08 and analyses were placed on hold. The samples were placed on hold because no field evidence of impacts (staining, odors, elevated PID readings)

was observed. Due to the lack of field impacts and the analytical results from the samples collected closer to the source area having already provided delineation, the samples placed on hold were never analyzed. All laboratory analytical data from the investigation is included in the Closure Report.

#### **8. MDEQ Comment**

*A review of the soil boring logs for SB-3-08 and SB-4-08 indicate a photoionization detector (PID) was not used to determine the samples selected for analysis and no other justification for the selected samples(s) from each boring was provided. The log, however does indicate the selected sample was not taken from the soils noted to exhibit a strong odor.*

#### **CRA Response**

The intervals from SB-3-08 and SB-4-08 with the observed odor were saturated; therefore, the intervals selected for laboratory analysis was from the 2-foot interval immediately above the water table. The soil samples were field screened (e.g., staining, and/or odors); however, PID results were not available.

#### **9. MDEQ Comment**

*A review of the soil boring logs for SB-1 through SB-7 indicate a PID was not used to determine the samples collected for analysis and no other justification for the selected sample(s) from each boring was provided.*

#### **CRA Response**

The interval selected for laboratory analysis was from the highest observed impact within the vadoze zone based on field screening (e.g., staining, and/or odors); however, PID results were not available. If no field evidence of impact was observed, the sample was collected from the 2-foot interval immediately above the water table. The soil samples for laboratory analysis were collected from unsaturated soil.

#### **10. MDEQ Comment**

*The referenced September 1990 NERI report does not contain a map(s) of the pretrex soil gas sample locations. A map depicting the sampling points within the area of the survey should be provided.*

#### **CRA Response**

Plate 5 of the 1990 NERI Report with the pretrex soil gas sample locations is attached to this comment-response. The areas of identified relative flux of PCE shown on this figure are also shown on the attached Figure 1 to compare to CRA soil boring locations.

## **11. MDEQ Comment**

*The location of the 500 gallon gasoline release that occurred in 1989 was not provided. In accordance with Section 21308a(1)(b)(xii), the Initial Assessment Report (IAR) is required to contain a map or information that indicates the component of the UST system from which the release occurred. If this information is not provided in an IAR, it should be provided in the Closure Report.*

### **CRA Response**

According to historic records and as described in Section 2.2.1 of the Closure Report, the 500 gallon release occurred when a gasoline UST was overfilled. However, CRA has not been able to locate a figure that shows the precise location of the fill ports. The release was discovered on February 2, 1990 via vapors from a sanitary sewer located immediately west of the DUCO stores USTs. The sanitary sewer was listed as a 12-inch diameter sewer that drained northerly through building 34. A pneumatic plug was inserted in the sewer south of building 34 and the contents were removed via vacuum truck.

## **12. MDEQ Comment**

*The location of the piping for the DUCO tanks was not identified. Pursuant to 21308a(1)(b)(vi)(c), identify locations of fill ports, dispensers and other pertinent system components including piping.*

### **CRA Response**

CRA has not been able to locate a figure identifying the locations of the fill ports, dispensers and other pertinent system components including piping associated with the historic USTs at DUCO stores.

## **13. MDEQ Comment**

*Pursuant to 21308(1)(b)(vi)(B), the IAR is required to contain a site map which depicts the location of all other UST systems on the property. If this information is not provided in the IAR or Final Assessment Report (FAR) and or an IAR or FAR is not submitted, it should be included in the Closure Report.*

### **CRA Response**

A site map which depicts the location of all other UST systems on the property has not been completed. However, identified releases facility wide were described in the June 2011 Request for RCRA Corrective Action Complete with Controls Determination and prior RCRA reports.

#### **14. MDEQ Comment**

*The locations of identified releases on the remainder of 4 acre property were not provided.*

*Note: The many sanitary and storm sewer lines that run throughout the property have the ability to transport contaminants to other areas of the property, either inside or outside of the pipe, therefore, all the releases on this property in the vicinity of sanitary or storm sewers that run through the area proposed for closure need to be identified. As indicated previously, it must be demonstrated that all contaminants within the area of the release proposed for closure meet the applicable cleanup criteria or are adequately addressed by the corrective actions conducted with respect to the release. Pursuant to Section 21308a(1)(b)(xix) the IAR is required to include the identification of any contamination on the site not resulting from the release and the source, if known.*

#### **CRA Response**

Figure 1 presents a site map indicating the locations of the sanitary and storm sewers lines that run through the DUCO stores area. Identified releases facility wide were described in the June 2011 Request for RCRA Corrective Action Complete with Controls Determination and prior RCRA reports.

#### **15. MDEQ Comment**

*The extent of contamination has not been defined pursuant to 21311a.(1)(a).*

#### **CRA Response**

Based on soil and groundwater analytical results the extent of contamination associated with the gasoline and diesel releases has been defined below MDEQ Cleanup Criteria. Therefore, additional investigation is not necessary to define the extent of soil and/or groundwater contamination associated with the former DUCO USTs. See Figure 1 for a Site map with soil analytical results compared to applicable MDEQ Cleanup Criteria. Figures 3.4 and 3.5 of the Closure Report identified the extent of contamination associated with the UST releases in soil and groundwater, respectfully. There were no groundwater detections above applicable MDEQ Cleanup Criteria.

Additional delineation activities will be completed as described in Response 2 to the June 20, 2011 MDEQ comments.

#### **16. MDEQ Comment**

*The Closure Report indicates the selected corrective actions include the imposition of a restriction on the use of the groundwater on the site. However it has not been adequately documented that groundwater is present on the site and if present, that it is groundwater in an aquifer and contaminants are present in the groundwater at concentrations requiring a restriction on the use of*

*the resource. In accordance with Section 21308a(1)(xx), the IAR is required to provide an estimate of the horizontal and vertical extent of soil and groundwater on the site. The full extent of both the horizontal and vertical distribution is required to be defined pursuant to section 21311a(1)(a).*

*The following deficiencies were noted with respect to the groundwater investigations conducted on the site, the following list is not all inclusive:*

- *The absence of wells at locations where water was observed as noted on the soil boring logs*
- *Installation of well screens at locations where water was not observed*
- *Installation of 15' well screens.*
- *The absence of determining a water flow rate and direction.*
- *If/where groundwater is present, determination of the vertical distribution of contamination within the groundwater plume*

### **CRA Response**

CRA believes the extent of groundwater impacts related to the DUCO Stores USTs has been defined. Groundwater analytical results collected during the previous investigations indicate groundwater is below applicable MDEQ Cleanup Criteria. An RC has been placed on the deed for the Site to address impacts at this and other areas of the Site. Therefore, the need to complete additional investigations to determine whether or not groundwater at the site meets the definition of groundwater not in an aquifer does not seem necessary.

## **17. MDEQ Comment**

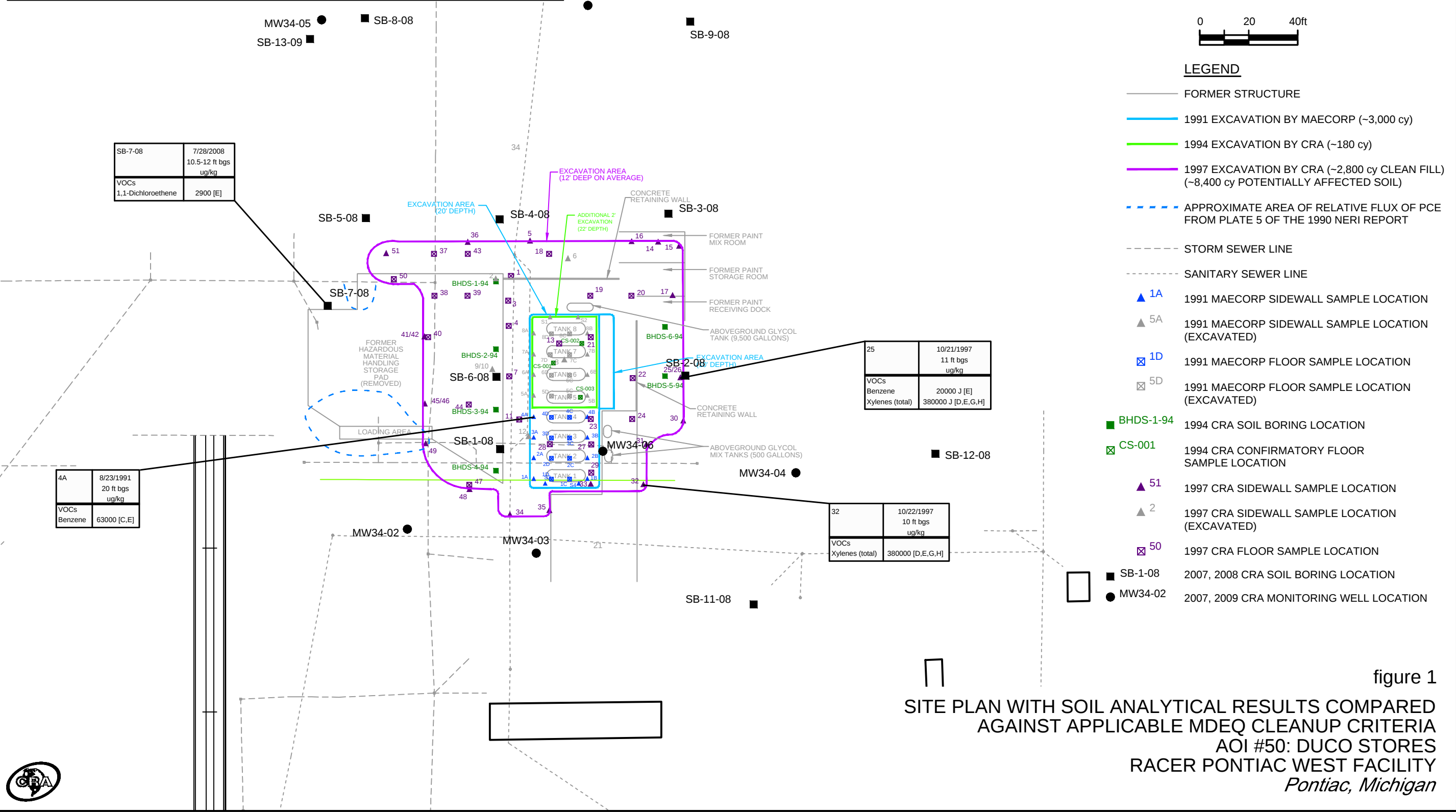
*Pursuant to Section 21312a(1), a Closure Report shall be submitted to the department with 30 days following completion of corrective actions. As submitted, the Closure Report seems to imply further remediation of the groundwater is necessary and will be accomplished via Natural Attenuation. Section 9 titled Feasibility Analysis states "the preferred corrective action is natural attenuation of the impacted groundwater, with institutional controls."*

### **CRA Response**

We understand why the MDEQ interpreted the phrase from the Closure Report cited above. However, it was not the intent of the Closure Report to indicate that further remediation of groundwater was necessary to obtain closure. The source removal (excavation) along with natural attenuation reduced concentrations of contaminants associated with the UST system releases identified in 1990 and 1991. Based on current Site conditions and the existing institutional controls (Restrictive Covenant) that prohibits use of groundwater at the site, no additional corrective action is necessary. However, it is noted that natural attenuation will continue.

|                                                                  |  |
|------------------------------------------------------------------|--|
| Soil                                                             |  |
| Finite VSIC for 2 Meter Source Thickness                         |  |
| Finite VSIC for 5 Meter Source Thickness                         |  |
| Infinite Source Volatile Soil Inhalation Criteria (VSIC) & RBSLs |  |
| Direct Contact Criteria & RBSLs                                  |  |
| Soil Volatilization to Indoor Air Inhalation Criteria & RBSLs    |  |
| Particulate Soil Inhalation Criteria & RBSLs                     |  |
| Groundwater Contact Protection Criteria & RBSLs                  |  |
| Soil Saturation Concentration Screening Levels                   |  |

A  
B  
C  
D  
E  
F  
G  
H



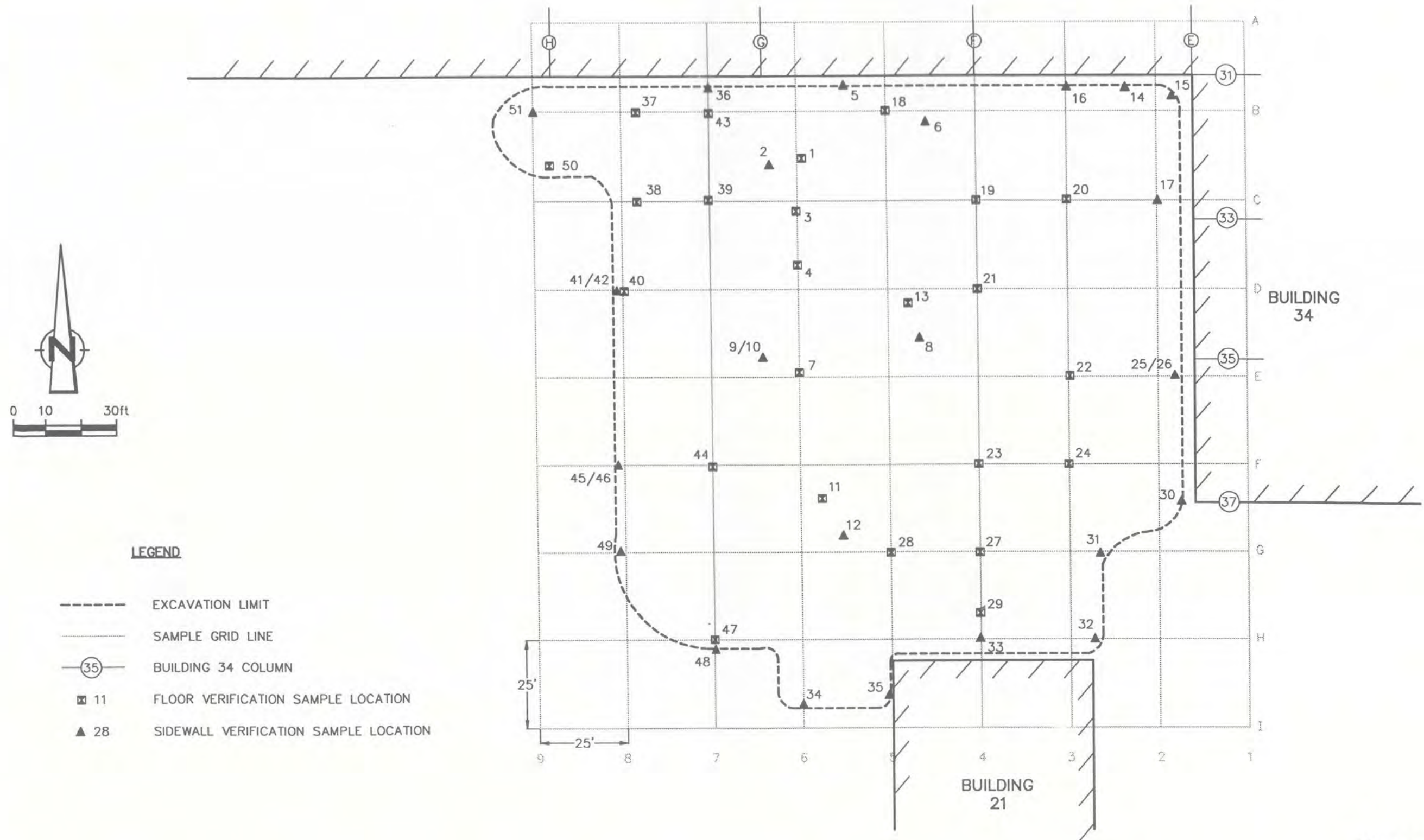
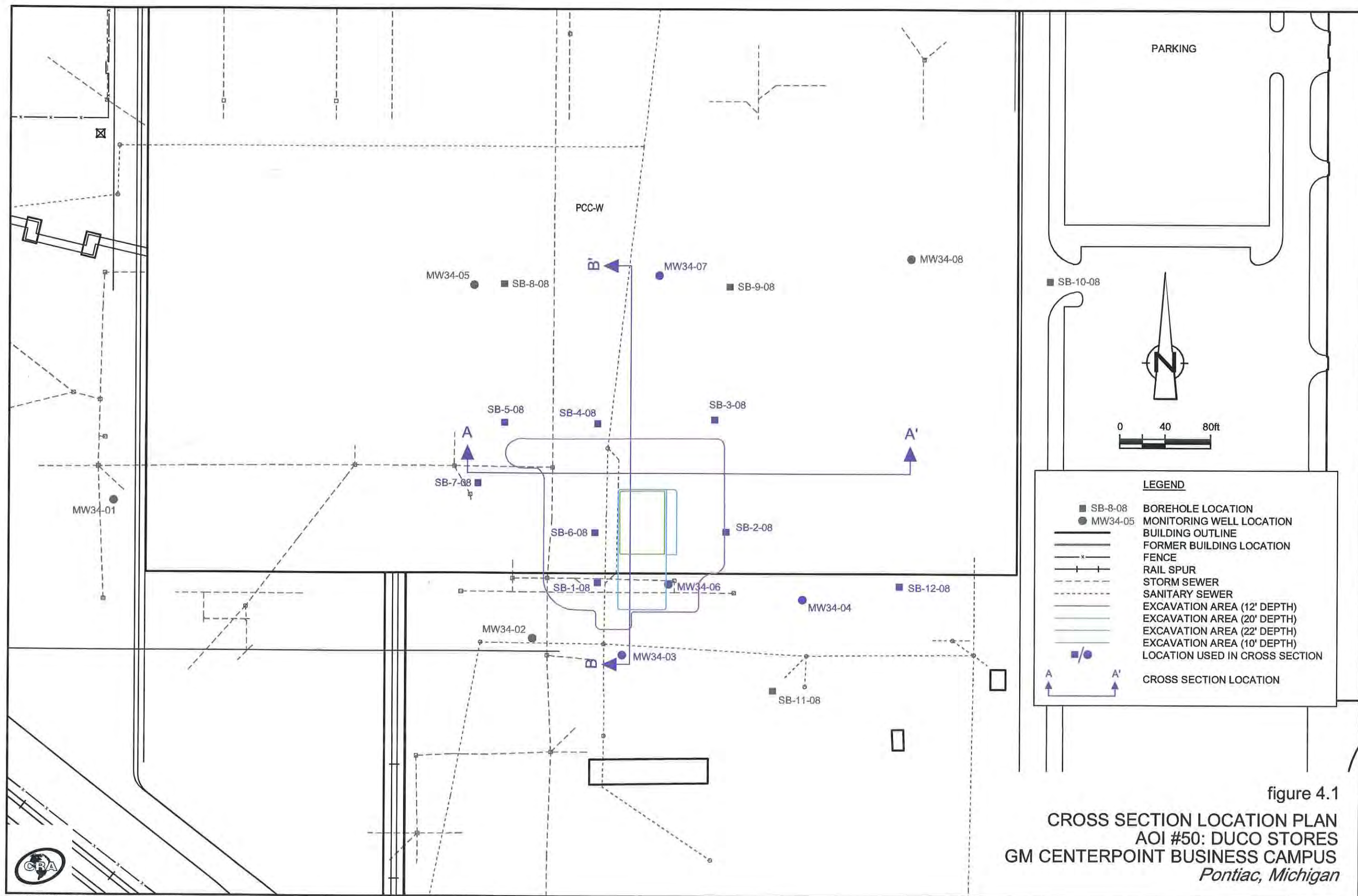
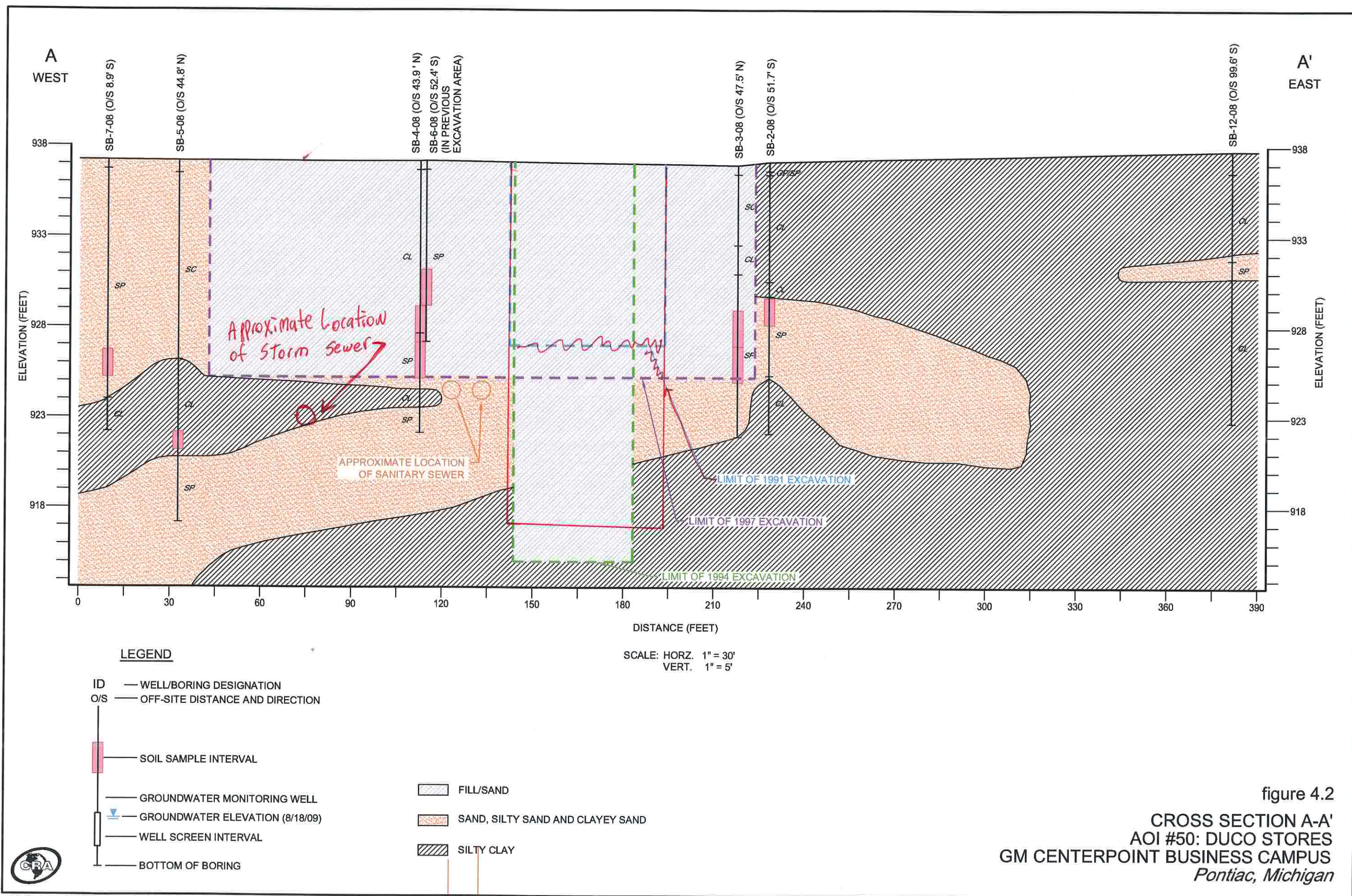


figure 3.2  
 VERIFICATION SAMPLE LOCATION PLAN  
 TRUCK PRODUCT CENTER WEST - BUILDING 34 EXCAVATION AREA  
 GM TRUCK GROUP  
 Pontiac, Michigan





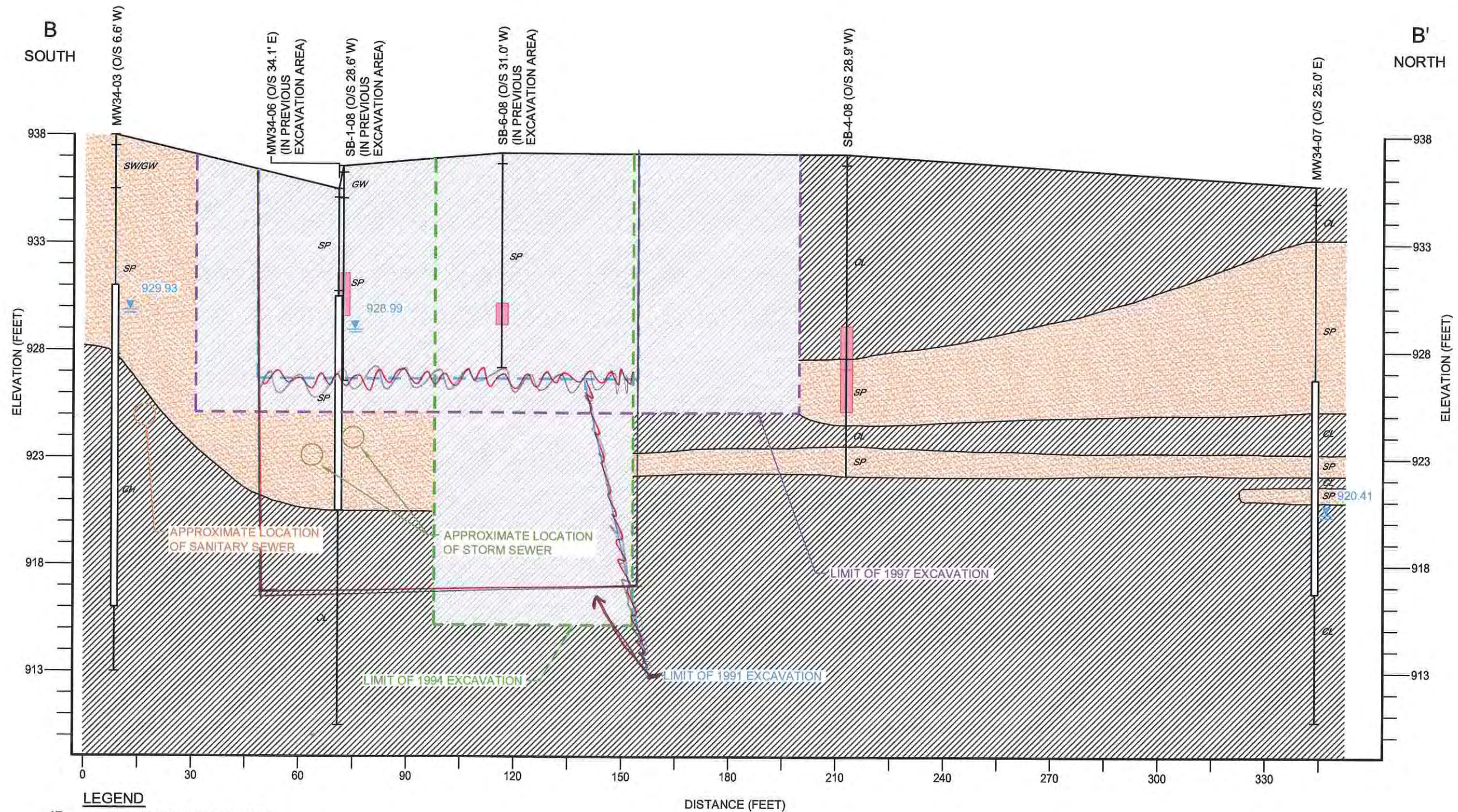
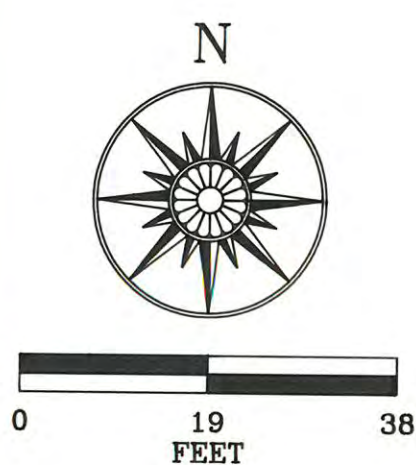
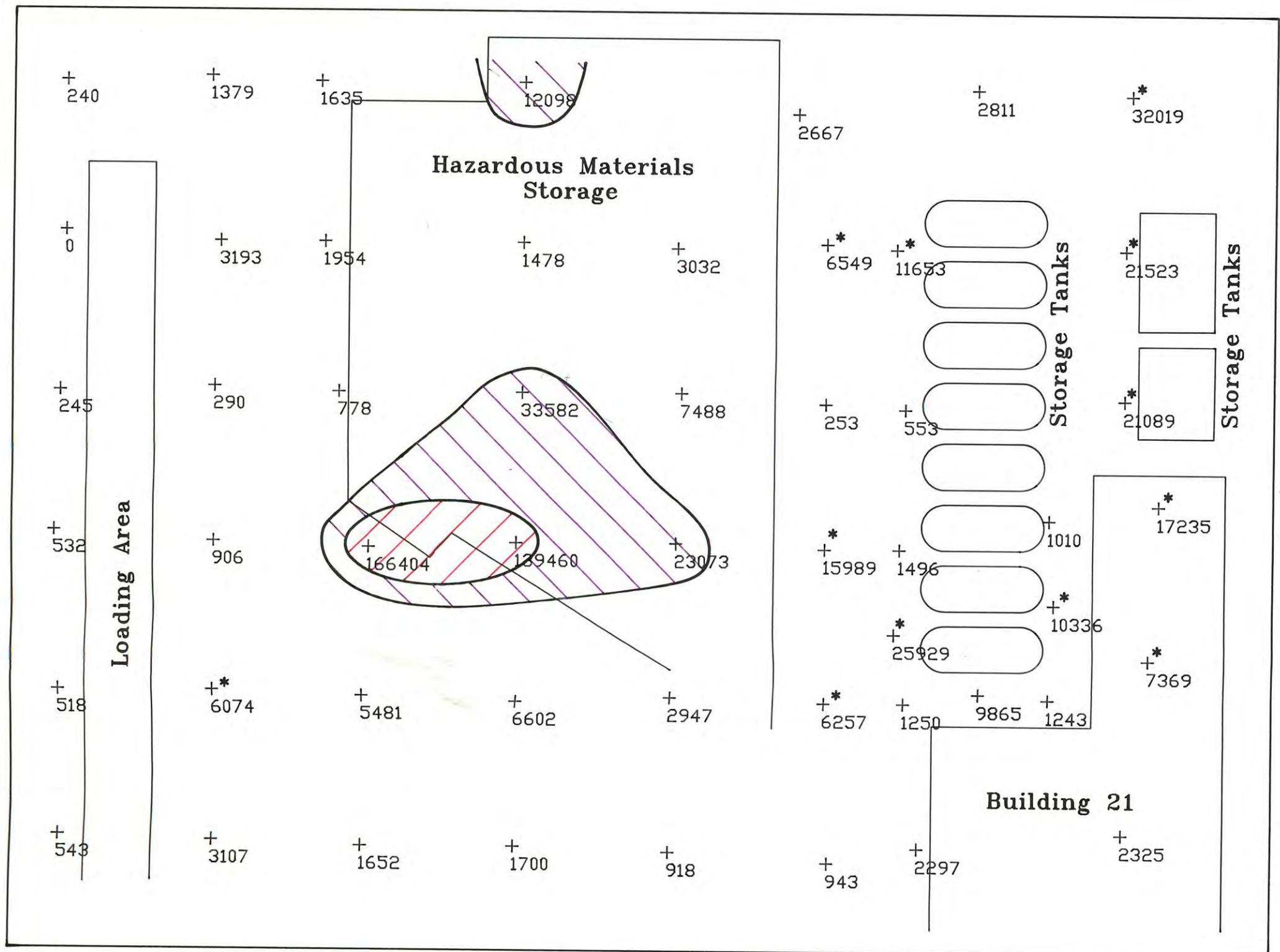


figure 4.3

**CROSS SECTION B-B'**  
**AOI #50: DUCO STORES**  
**GM CENTERPOINT BUSINESS CAMPUS**  
*Pontiac, Michigan*



605 Parfet Street  
Suite 100  
Lakewood Colorado 80215  
(303) 238-0090  
1079E



**Legend**  
**Ion Counts**

$\geq 100,000$

10,000 - 99,999

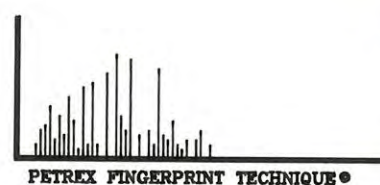
\* Positive identification not possible due to interference from other compounds

## GM Truck & Bus Group

Relative Flux  
Tetrachloroethylene

Duco Stores Tank Farm  
Pontiac, Michigan

Plate 5



August 2, 1990