ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES

SPARTANS' SQUARE SHOPPING CENTER
NWC ILLINOIS ROUTE 53 & ALEXANDER CIRCLE
(3-23 TERRACE LANE, 615-625 ACCESS DRIVE)
ROMEOVILLE, WILL COUNTY, ILLINOIS
IEPA BOL SITE NO. 1970905180

USEPA Cooperative Agreement # BF00E00881-0

PREPARED FOR:

VILLAGE OF ROMEOVILLE
MS. DAWN CALDWELL
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PREPARED BY:

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AUGUST 2013

Public Comment Period: September 3, 2013 to October 2, 2013
You may provide your written comments by email or mail.

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1.0 INTRODUCTION

This Analysis of Brownfield Cleanup Alternatives (ABCA) was prepared by V3 Companies (V3) on behalf of the Village of Romeoville (the Village), Illinois. The Remediation Site is referred to as Spartans' Square Shopping Center (Site), IEPA BOL Site No. 1970905180. This ABCA report was prepared to identify and evaluate cleanup alternatives to mitigate potential risks to human health and the environment from identified environmental impacts at a remediation area.

The specific area to be cleaned up is within the Spartans' Square Shopping Center (Remediation Site). The Site includes the former addresses 3-23 Terrace Lane and 615-625 Access Drive, located adjacent to Alexander Circle at the northwest corner of Illinois Route 53 and Alexander Circle in Romeoville, Will County, Illinois (refer to **Figure 1 – Site Location Map** and **Figure 2 – Site Vicinity Map** attached).

The purpose of the cleanup is to meet environmental regulatory requirements and to position the property for redevelopment as commercial property. The initial step in the remediation process is to prepare a list of cleanup alternatives, and evaluate these alternatives based on a number of factors, including cost. Cleanup alternatives are provided in this report, and are based on previous site assessment data and assumptions noted herein.

The Village's environmental consultant shall consider all comments received and provide responses to those comments at the end of the public comment period. Comments that may change or supplement the Remedial Action Plan will be provided to the Illinois EPA SRP Project Manager for review. All public comments will be documented / summarized and included in the Administrative Record, as well as, any responses to public comments.

2.0 BACKGROUND

2.1 Site Description

The Site was enrolled in the Site Remediation Program (SRP) in August 2008 under the name Spartans' Square Shopping Center to secure a "comprehensive" No Further Remediation (NFR) letter. The recently demolished commercial building and former parking lot are located on approximately 2.4-acres. The current use of the Site is vacant. The Village of Romeoville's ownership of the Site was acquired after having completed appropriate environmental due diligence.

2.2 Site History

Review of historical aerial photographs, topographic maps, agency records and interviews, indicated the Site contained a commercial/retail building as early as 1961. Historic activities conducted on-Site included the presence of a dry cleaner/Laundromat, grocery store, beauty salon, and various restaurants. Prior to 1961, the property was agricultural cropland.

Prior to demolition, the Site contained a commercial building. Site structures were recently demolished in 2013. A former asphalt paved parking lot was located in the northern portion of the Site, with concrete and asphalt paved access to the east and south. The Site and surrounding land use is commercial. Adjacent properties include similar commercial/retail properties. See **Figure 2** for aerial of Site and adjacent properties, and **Figure 3** for Site features.

2.3 Proposed Redevelopment

The future site use is intended to be commercial. Existing redevelopment plans include a retail building with paved parking.

3.0 SUMMARY OF SITE CHARACTERIZATION

3.1 Prior Investigations

Site investigations were completed from January 2008 through spring 2013. The site investigations consisted of Phase 1 and 2 assessments, soil borings and monitoring wells. V3 has previously investigated the Site as documented in the following:

- *Phase I Environmental Site Assessment, Spartans' Square Shopping Center, SWC Illinois Rte 53 (Independence Boulevard) and Phelps Avenue, Romeoville, IL, February 13, 2008, V3 Companies of Illinois, LTD.*
- *Comprehensive Site Investigation and Remediation Objectives Report (CSI/ROR), Spartans' Square Shopping Center, SWC Illinois Route 53 and Alexander Circle, (3-23 Terrace Lane, 615-625 Access Drive), Romeoville, IL, May 21, 2010, V3 Companies. This report includes a summary of all site investigations from Jan. 2008 to May 2010.*
- Response to IEPA review letter of CSI/ROR*, Spartans' Square Shopping Center, Romeoville, IL, V3 Companies, February 18, 2011.*
- *Supplemental Comprehensive Site Investigation, Remediation Objectives Report and Remedial Action Plan, Spartans' Square Shopping Center, Romeoville, IL, V3 Companies, June 2013.*
- *Amendment 1 to Supplemental Comprehensive Site Investigation Report, Remediation Objectives Report and Remedial Action Plan, Spartans' Square Shopping Center, Romeoville, IL, V3 Companies, August 1, 2013.*

Collected soil and groundwater samples were analyzed for one or more of the following:

- volatile organic compounds (VOCs),
- semi-volatile organic compounds (SVOCs),
- pesticides,
- polychlorinated biphenyls (PCBs),
- target analyte list (TAL) metals,
- cyanide, pH, and total organic carbon.

All analytical data was compared to 35 IAC Part 742: *Tiered Approach to Remediation Objectives* (TACO) Tier 1 industrial-commercial soil and groundwater remediation objectives (ROs) for the ingestion, inhalation and soil component of the Class I groundwater ingestion pathways, and direct ingestion Class I groundwater pathway. A summary of site analysis and exposure pathways identified at the Site are located in **Table 1.1** – Summary of Soil and Groundwater Exceedances.

Based upon site information and analytical data, the Recognized Environmental Conditions (RECs) for the Site are as follows:

- VOCs Impacts from Former Dry Cleaning Operations: This includes soil and groundwater VOC impacts that resulted from former dry cleaners operations at the Site.

- Metals in Groundwater: This includes metals groundwater impacts identified in two wells sampled on the southeast side of the Site.

The results of the previous site investigations indicate soil and groundwater contaminants are present due to chemical spills from the former dry cleaner operations at the Site. The contaminants are chlorinated solvents that resulted from the release of dry cleaning solvents that were historically used at the Site. It is not apparent that the identified metals concentrations represent a notable groundwater concern, and may be the result of relatively high suspended solids within collected samples. The area of impact remains on the south end of the former dry cleaner location in soil and groundwater that are above state remediation objectives.

3.2 Site Geology and Hydrogeology

Site soils consist of surface fill materials (asphalt, concrete, silty clay fill with bricks, sand and gravel) underlain by discontinuous areas of silty clay, clayey silt, or sand and gravel. Bedrock was encountered at depths ranging from 17-20 feet below ground surface.

Groundwater levels at the Site were measured in the wells at depths ranging between 3 and 17 feet below grade. Based on measured water levels, the groundwater flow within the near surface sediments likely trends to the southeast toward the Des Plaines River and Chicago Ship and Sanitary Canal. This is consistent with regional groundwater flow. Site geology and hydraulic conductivity testing designates the Site to be underlain by Class I Potable Groundwater.

Based upon a review of the EDR GeoCheck well search database and interviews, there are no active potable wells within a 2,400 ft radius of the Site. In conjunction with the well survey, the Village of Romeoville ordinance (Ordinance No. 06-392) prohibits the installation of wells in a limited area (that includes the Site) for potable water use which eliminates the possibility that a contaminant source area is, or will be in the future, within a potable well setback zone or within a regulated recharge area for potable water. Therefore, in accordance with 35 IAC Section 742.1015, installation of potable water supply wells will not occur within the ordinance area.

4.0 CLEANUP ALTERNATIVES ANALYSIS

Future land use at the Site is planned as commercial. Redevelopment plans include a commercial /retail building with parking. The remediation goals for the Site reflect the objective of minimizing the environmental considerations that respective end-users may need to consider during development and construction, and subsequent operation and maintenance of facilities at the Site.

4.1 Cleanup Goals

Based on the above objective and the described area of soil impacts, the proposed remedial goals for the Site are summarized as follows:

- Perform soil remediation (in-situ chemical oxidation via soil mixing) at and in the vicinity of soils with elevated VOC concentrations, to meet RCRA Alternative Land Disposal Restriction (LDR) Treatment Standards for Contaminated Soil (35 IAC Part 728.149 and 40 FDR Part 268.49), and to remove the need for additional pre-treatment of in-situ soils prior to potential future soil removals and disposal at a landfill (see **Figure 4 – Proposed**

Soil Remediation Area). Specifically, the following LDRs will be used as the remediation objectives (ROs) for the primary contaminant of concern (COC) and related degradation products:

- Tetrachloroethylene (PCE): 60 mg/kg
- Trichloroethylene (TCE): 60 mg/kg
- 1,1,1-trichloroethane or 1,1,2-trichloroethane (TCA): 60 mg/kg each
- Trans-1,2-dichloroethane (DCE): 300 mg/kg
- Vinyl chloride (VC): 60 mg/kg

With the exception of PCE, the other COCs are currently below LDRs. However, the additional LDRs are provided for reference, if needed. *Note: Based on laboratory analytical results, the site soil concentrations for TCA, DCE and VC are 'non-detect' and one sample had a TCE concentration that exceeds the Tier 1 soil component of the groundwater ingestion RO.*

The intent of these remedial measures are to reduce VOC concentrations of impacted soils that may be encountered by end users during redevelopment and have the option to dispose off-site as non-hazardous waste. Any remaining exposure route Tier 1 soil RO exceedances may be addressed through engineering and institutional controls (construction worker notification, groundwater use restriction).

4.2 Soil Cleanup Alternatives Analysis

The alternatives considered for mitigating the risks associated with the contaminated soil are discussed below.

4.2.1 No Action

A no-action alternative was considered as part of the ABCA process and would be the cheapest alternative. The Site subsurface conditions would remain as-is. A no-action alternative that could be applied at the Site is presented below to illustrate the cost that would be incurred.

Task	Unit Cost	Quantity	Unit Type	Estimated Costs
No-Action Alternative				
Grade and Seed	$700	2.4	acres	$1,680
Total Activities – Estimated Cost				**$1,680**

No-Action Alternative costs assume the site is not redeveloped. Actual costs would be based upon material bids to be obtained prior to implementation. The estimated cost assumes implementation and maintenance of the grounds would be conducted by the Village.

Although no action is the most affordable, this alternative does not meet the Village's plan to redevelop the property, create jobs and bring the property back to productive use. It also does not address potential exposure to the impacted soils. State regulations (35 IAC 742.305 b and 35 IAC 742.220) indicate that soil concentrations of any organic constituent cannot exceed the soil saturation limit. The limit is based on each specific organic constituent, and currently exceeds the limit for tetrachloroethylene at one location. Therefore, the soil must be addressed

to protect human health and the environment and the no-action alternative was eliminated from further consideration.

4.2.2 Source Removal (With Landfill Pre-Treatment)

Source removal includes the excavation, loading, transportation and off-site disposal (with landfill pre-treatment of high concentrations) of contaminated soils in the Remediation Area. This alternative is proven, and provides 100 percent certainty in its effectiveness, and allows for safe reuse of the property. In addition, the cleanup grant funding has an expiration date, so an effective treatment within the time constraints for funding is an important factor. The associated cost of implementation is provided below.

Tasks	Estimated Costs
Remediation Implementation for Source Removal Alternative (Landfill pre-treatment)	
Contractor Bidding/Selection/Contract Execution /Mobilization Activities	$13,600
Field Oversight/Verification Sampling	$24,000
Contracted Services (Soil Excavation/Disposal/Transportation/Laboratory Analysis/Landfill Pre-treatment of higher soil concentrations) (260 tons)	$ 88,500
Clean Soil Backfill (260 tons)	$5,200
Total Remediation Activities – Estimated Cost	**$131,300**

Assumes 260 tons of a limited area of impacted soil removed. Actual costs will be based upon remediation contractor bids to be obtained prior to implementation. The alternative costs do not include regulatory reporting requirements, programmatic and general project management, field contingencies and applicable IEPA review fees. Costs for removing all of the impacted soils to "clean" conditions are not included.

4.2.3 Source Removal (With In-Situ Pre-Treatment)

Source removal includes the in-situ pre-treatment of high soil concentrations, excavation, loading, transportation and off-site disposal of contaminated soils in the Remediation Area. This alternative is proven, and provides 100 percent certainty in its effectiveness, and allows for safe reuse of the property. In addition, the cleanup grant funding has an expiration date, so an effective treatment within the time constraints for funding is an important factor. In-situ pre-treatment adds at least 4-6 weeks to the schedule of just excavating the soils. The associated cost of implementation is provided below.

Tasks	Estimated Costs
Remediation Implementation for Source Removal Alternative (On-site, in-situ pre-treatment)	
Contractor Bidding/Selection/Contract Execution /Mobilization Activities	$13,600
Field Oversight/Verification Sampling	$24,000
Contracted Services (In-situ Pre-treatment of higher soil concentrations /Soil Excavation/Disposal/Transportation/Laboratory Analysis)	$ 78,500
Clean Soil Backfill (260 tons)	$5,200
Total Remediation Activities – Estimated Cost	**$121,300**

Assumes 260 tons of a limited area of impacted soil removed. Actual costs will be based upon remediation contractor bids to be obtained prior to implementation. The alternative costs do not include regulatory reporting requirements, programmatic and general project management, field contingencies and applicable IEPA review fees. Costs for removing all of the impacted soils to "clean" conditions are not included.

4.2.4 Capping

Capping of contaminated soil is often a viable remedial alternative that addresses direct contact, inhalation and ingestion risks posed by contaminated soil. Capping can be used on its own or in concert with source treatment or removal methods when residual concentrations remain. Capping materials can vary depending on site considerations, and can include asphaltic paving, layers of geotextile materials, clean fill materials consisting of clean imported soils, or concrete slab building foundations.

The placement of a cap over contaminated soil minimizes the surface exposure to the soil and prevents the vertical migration of water through contaminated soil, which minimizes the generation of contaminated leachate that may migrate to groundwater. Capping also creates a land surface that safely supports other uses. Capping acts as an engineered barrier and is often an integral component in Brownfield remedial actions.

For the Site, an area covering the approximate groundwater and soil impacts would be proposed, which is a larger area than the source removal or treatment options, to cover potential vapor migration exposure. An example of a typical capping method that could be applied at the Site is presented below to illustrate the cost that would be incurred.

Tasks	Estimated Costs
Remediation Implementation for Capping Alternative	
Contractor Bidding/Selection/Contract Execution /Mobilization Activities	$13,600
Field Oversight	$10,000
Contracted Services -Excavation of impacted surface soil to accommodate cap section, transportation and off-site disposal of impacted soil at landfill (~$40/ton, 2,400 tons)	$96,000
Contracted Services -Installation of 60-mil passive vapor barrier (on top of impacted area) (~$3/sq ft, area of 27,200 sq ft)	$81,600
Asphalt barrier ($5/sq ft, area of 27,200 sq ft)	$136,000
Total Remediation Activities – Estimated Cost	**$337,200**

Alternative cost assumes at-grade cap section is approximately 2 feet thick; there is no building ventilation system for VOCs beneath cap, just passive vapor barrier over impacted soil area beneath cap.

Actual costs would be based upon remediation contractor bids obtained prior to implementation. The alternative costs do not include regulatory reporting requirements, programmatic and general project management, field contingencies and applicable IEPA review fees.

A parking lot or building can be a cap for any impacted soils, but a building may also require a building control technology to mitigate any potential vapor intrusion. Based on the high cost of

implementation of a cap and vapor barrier above available grant funds, the capping alternative was eliminated from further consideration.

4.2.5 In-Situ Soil Remediation without Excavation

There are multiple types of in-situ soil remediation alternatives (e.g., soil vapor extraction, phytoremediation, chemical oxidation, bioremediation, electrical resistivity heating and solidification/stabilization). Out of these alternatives, the most effective and affordable option for solvent VOCs at the Site within a limited period of time is chemical oxidation. This option allows for the reduction of both soil and groundwater concentrations. Chemical oxidation uses a combination of reagents applied to the soil to release the contaminant from the soil surfaces and be accessible for treatment, then produces multiple oxidation reactions to break down and/or destroy the chemical. Due to the type of chemicals at the site and waste regulations, the soils must be mixed in place with the chemical reagents. With the reduction of concentrations and likely placement of buildings and/or parking lot during redevelopment, the treated soils could remain in place without the need for excavation.

Based on these factors, the chemical oxidation method without excavation is deemed appropriate to address contaminated soils at the Site, and is discussed further in Section 4.3 below. An example of a typical in-situ soil treatment method that could possibly be applied at the Site is presented below to illustrate the cost that would be incurred prior to redevelopment.

Tasks	Estimated Costs
Remediation Implementation for In-situ chemical oxidation	
Contractor Bidding/Selection/Contract Execution /Mobilization Activities	$13,600
Field Oversight/Verification Sampling/Laboratory Analysis	$25,000
Contracted Services (Chemical oxidation treatment, labor and equipment)– 1 event)	$ 40,000
Total Remediation Activities – Estimated Cost	**$78,600**

Assumes 375 cy of a limited area of impacted soil treated. Actual costs would be based upon remediation contractor bids obtained prior to implementation. The alternative costs do not include regulatory reporting requirements, programmatic and general project management, field contingencies and applicable IEPA review fees. Costs for treating all of the impacted soils to "clean" conditions or for soil removal are not included.

4.3 Proposed Remedial Action

On the basis of effectiveness, costs within the grant budget, time constraints, future land use goals and site plans, regulatory criteria and technical feasibility, V3 recommends in-situ remediation (soil mixing with reagents) without excavation as the most appropriate alternative to remediate impacted soils.

Under V3's direction, the remediation contractor will mix and apply reagents to the impacted soils as depicted in the general area shown in **Figure 4**. The treated soils will be left in place. Verification soil samples will be collected and analyzed along excavation sidewalls and bottom.

The specific areas of soil to be remediated are at and in the vicinity of soil borings with the

highest known concentrations and along adjoining underground utility lines. The general treatment area of 60 feet x 45 feet encompassing these locations and features is shown on **Figure 4**.

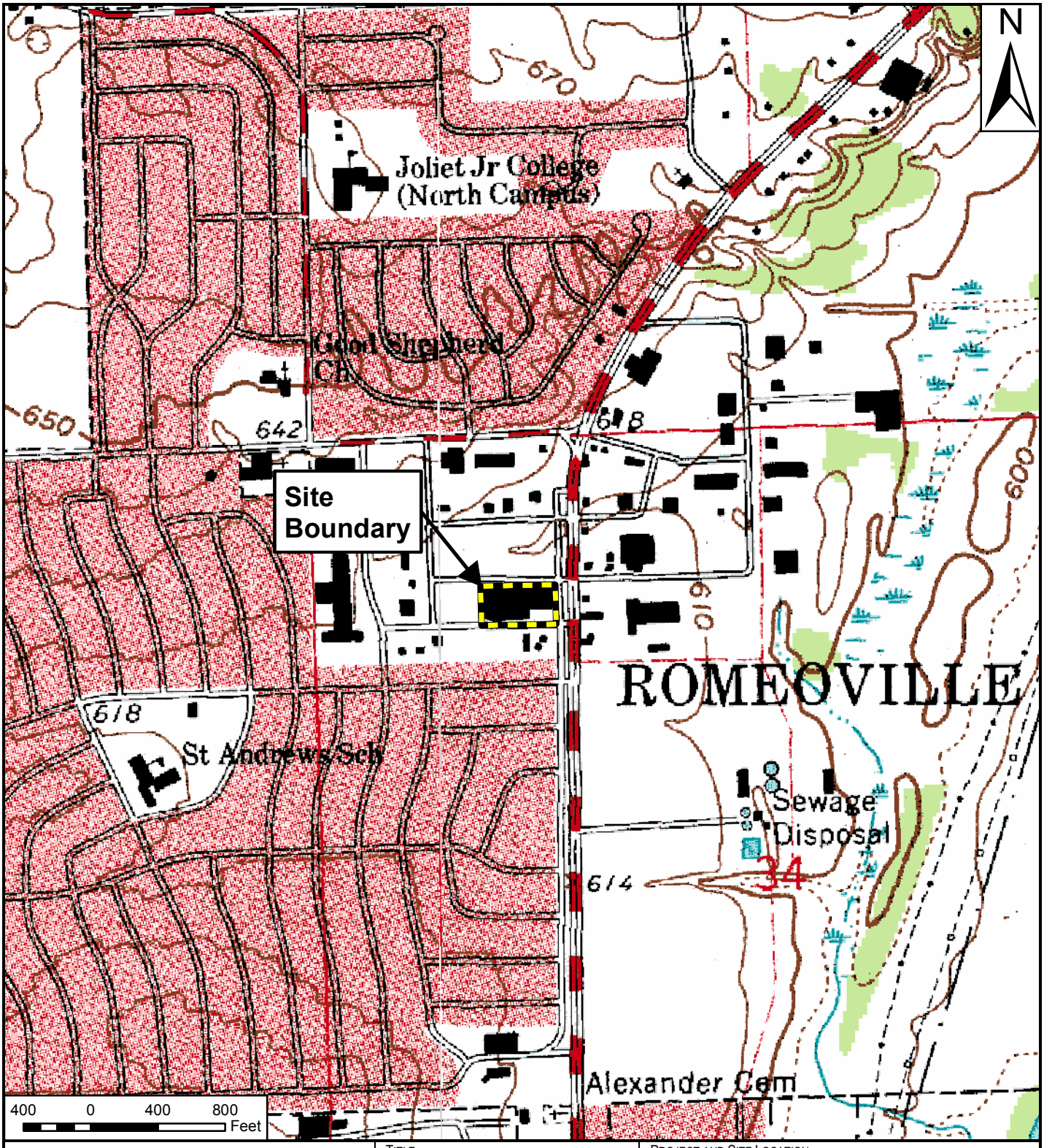
Groundwater was encountered between 3 and 17 feet below ground surface in previous soil borings, and may be encountered during remediation activities. If groundwater is encountered in the remediation excavation in contact with contaminated soils, a vacuum truck that is a licensed special waste hauler will be used to pump out and transport the water to a licensed disposal facility.

A Remedial Action Plan was provided to Illinois EPA for approval, contains further information and is also available for public review. Refer to the June 2013 report called *Supplemental Comprehensive Site Investigation, Remediation Objectives Report and Remedial Action Plan*, under Section 4.0. Also refer to August 1, 2013 letter, *Amendment 1 to Supplemental CSI/ROR/RAP*.

See **Section 4.2.5** for associated estimated costs.

4.4 Cleanup Schedule

Pending final IEPA, USEPA and public approval, V3 and the Village tentatively plan on conducting the remediation in October-November 2013. During the USEPA 30-day public review process, the Village will request bids from multiple remediation contractors. Once selected, contract negotiations will commence and a contract will be finalized. The USEPA Grant Project Manager will be contacted once a remediation contractor has been selected. It is anticipated remediation will begin within two to three weeks following the finalized contract and all approvals are received.



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TITLE: **Site Location Map**	PROJECT AND SITE LOCATION: **Spartans' Square Shopping Center NWC Illinois Route 53 and Alexander Circle Romeoville, Illinois 60446**		
BASE LAYER: USGS Topographic Map (1993)	PROJECT NO. 07292	FIGURE: 1	SHEET: 1 OF: 1
CLIENT: **Village of Romeoville 13 Montrose Drive Romeoville, Illinois 60446**	QUADRANGLE: Romeoville, IL	DATE: 12/04/09	SCALE: See Scale Bar

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TITLE: **Site Vicinity Map**	PROJECT AND SITE LOCATION: **Spartans' Square Shopping Center NWC Illinois Route 53 and Alexander Circle Romeoville, Illinois 60446**		
BASE LAYER: DigitalGlobe (2011)	PROJECT NO. 07292	FIGURE: 2	SHEET: 1 OF: 1
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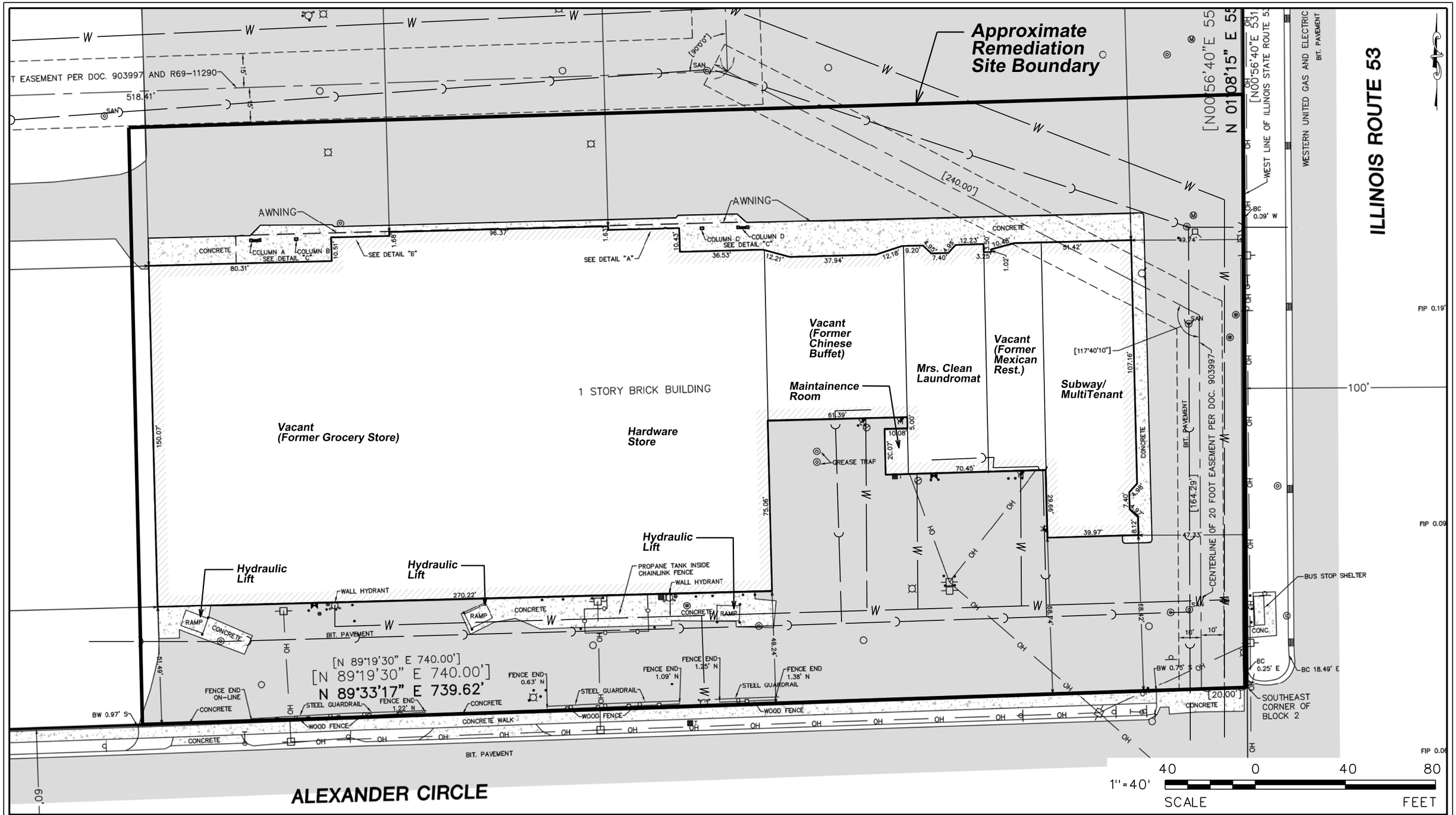

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REVISIONS

NO.	DATE	DESCRIPTION

PROJECT NO.: 07292	DESIGNED BY: JP
FILE NAME: FIGbase072925	DRAWN BY: JP
DATE: 01/13/09	CHECKED BY: RB
SCALE: 1"=40'	PROJECT MANAGER: CM

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

SITE BASE MAP

DRAWING NO. 3

07292 - SITE BASE MAP

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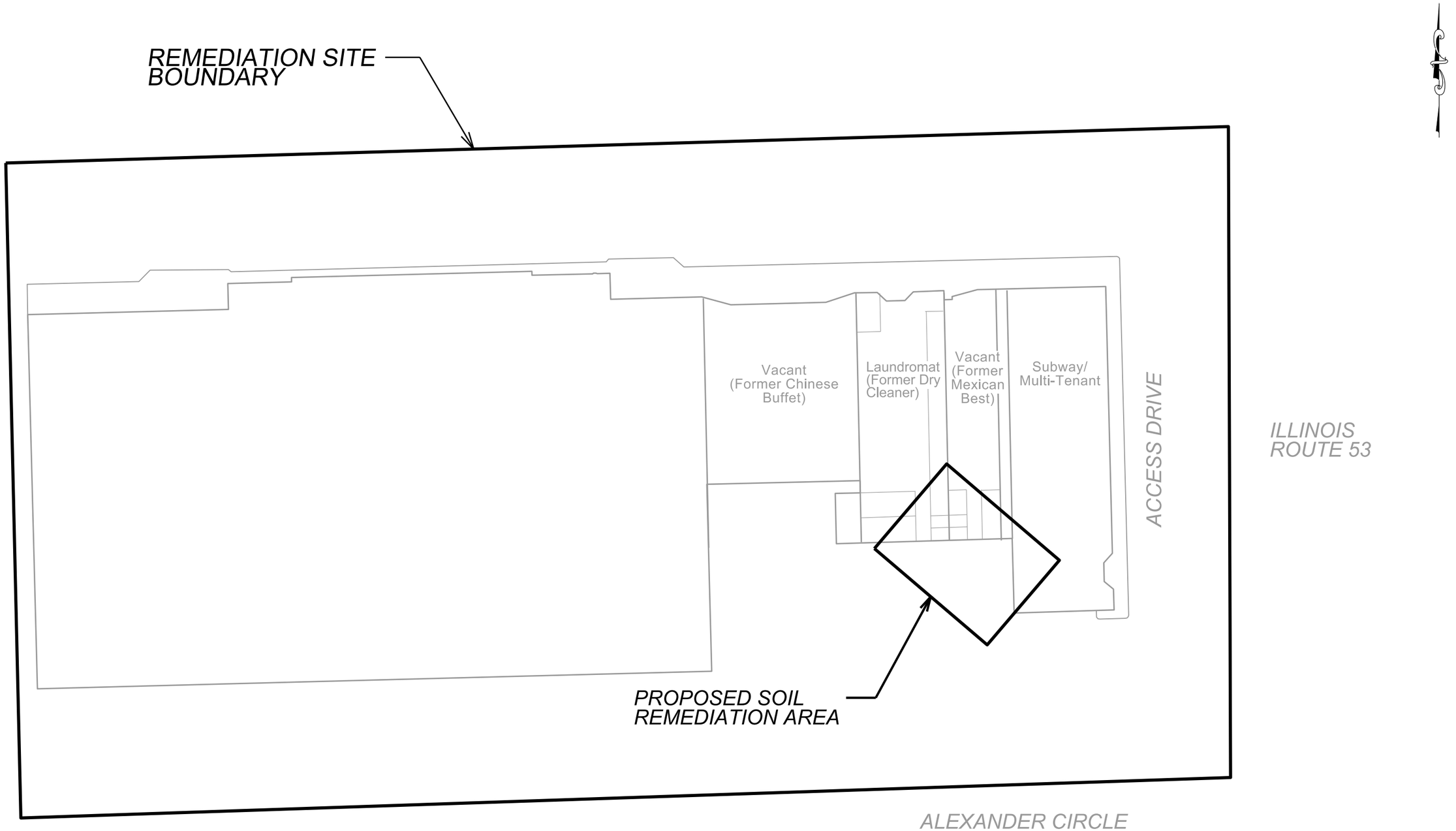

1"= 40' SCALE 20 0 20 40 FEET

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NO.	DATE	DESCRIPTION

PROJECT NO.: 07292	DESIGNED BY: KJW
FILE NAME: FIGpsoil_rem07292	DRAWN BY: RKB
DATE: 02/28/13	CHECKED BY: CAM
SCALE: 1"=40'	PROJECT MANAGER: CAM

SPARTANS' SQUARE SHOPPING CENTER

ROMEOVILLE ILLINOIS

PROPOSED SOIL REMEDIATION AREA

DRAWING NO. 4

07292 - PROPOSED SOIL REMEDIATION AREAS

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Table 1.1
Summary of Soil and Groundwater Samples Above TACO Tier 1 ROs
Spartans Square Shopping Center, Romeoville, IL

SAMPLE I.D.	Soil Sample Depth	Soil Sample	Groundwater Sample	Soil Gas Sample	ANALYSES PERFORMED: VOCs	BTEX+MTBE	SVOCs	PNAs	TAL Metals	Pesticides/PCBs	Exceedances of TACO Tier 1 Remediation Objectives	TIER 1 REMEDIATION OBJECTIVES EXCEEDANCES: Industrial-Commercial Ingestion	Industrial-Commercial Inhalation	Construction Worker Ingestion	Construction Worker Inhalation	Residential Ingestion	Residential Inhalation	Soil Component of the Groundwater Ingestion Exposure Route	Groundwater
												Ingestion	Inhalation	Ingestion	Inhalation	Ingestion	Inhalation	Class I	Class I
ERS Monitoring Wells																			
MW-9 (Sampled by ERS 10/11/06)			X			X		X			**5 PNAs**								**BAA, BBF, BKF, BAP, IP**
MW-10 (Sampled by ERS 10/11/06)			X			X		X			**4 PNAs**								**BAA, BBF, BKF, BAP (see updated V3 sample)**
MW-10 (Sampled by V3 11/19/08)			X		X			X											
V3 Investigation January 2008																			
SM-GP-01	0-2	X			X														
SM-GP-02	2-4	X			X														
SM-GP-03	0-2	X			X						**1 VOC**							**PCE**	
	6-7	X			X														
SM-GP-04	0-2	X			X														
SM-GP-05	0-2	X			X														
	2-4	X			X														
SM-GP-07	10-12	X			X						**1 VOC**					**PCE**	**PCE**	**PCE**	
SM-GP-07-GW (Temp Well) SM-GP-07			X		X						**1 VOC**								**PCE**
SM-GP-08	8-10	X			X						**1 VOC**		**PCE**		**PCE**	**PCE**	**PCE**	**PCE**	
SM-GP-08-GW (Temp Well) SM-GP-08			X		X						**1 VOC**								**PCE**
SM-GP-09	0-2	X			X														
V3 Supplemental Investigation April 2008																			
Soil																			
SM-GP-10	4-6	X						X											
SM-GP-11	6-8	X						X											
SM-GP-12	4-6	X						X											
SM-GP-13 (GW) (Temp Well) SM-GP-13			X		X														
SM-GP-14 (GW) (Temp Well) SM-GP-14 [off-Site]			X			X													
SM-GP-15	0-2	X			X														
SM-GP-15 (GW) (Temp Well) SM-GP-15			X		X														
SM-GP-16 (GW) (Temp Well) SM-GP-16			X		X														
SM-GP-17 (GW) (Temp Well) SM-GP-17			X		X														
SM-GP-18 (GW) (Temp Well) SM-GP-18			X		X														
V3/OSE Supplemental Investigation November 2008																			
Soil																			
X101 SM-GP-101	10-12	X			X		X		X										
X102 SM-GP-102	14-16	X			X		X	X	X	X									
X103 SM-GP-103	10-11	X			X						**1 VOC**							**PCE**	
X104 SM-GP-104	10-11	X			X		X				**1 VOC**							**PCE**	
X105A SM-GP-105	2-3	X			X														
X105B SM-GP-105	10-11	X			X														
G105 (Temp Well) SM-GP-105			X		X														
X106 SM-GP-106	10-11	X			X														
G106 (Temp Well) SM-GP-106			X		X														
X107A SM-GP-107 MS/MSD	2-3	X			X						**1 VOC**							**PCE**	
X107B SM-GP-107 MS/MSD	7-9	X			X						**1 VOC**							**PCE**	
X108A SM-GP-108	2-3	X			X														
X108B SM-GP-108 MS/MSD	10-11	X			X			X			**2 VOCs, Exceeds Soil Sat. for PCE**	**PCE**	**PCE**		**PCE**	**PCE**	**PCE**	**PCE, TCE**	
G108 (Temp Well) SM-GP-108			X		X		X		X	X	**1 VOC**								**PCE**
X110A SM-GP-110	2-3	X			X														
X110B SM-GP-110	10-11	X			X						**1 VOC**							**PCE**	
G110 (Temp Well) SM-GP-110			X		X														
X111A SM-GP-111	2-3	X			X		X		X	X									
X111B SM-GP-111	8-9	X			X			X	X	X	**1 VOC**							**PCE**	
X112A SM-GP-112	2-3	X			X														
X112B SM-GP-112	8-9	X			X														
X113A SM-GP-113	5-6	X			X														
X113B SM-GP-113	7-8	X			X														
X114A SM-GP-114	2-3	X			X		X		X	X									
X114B SM-GP-114	8-9	X			X			X			**1 VOC**							**PCE**	
X115 SM-GP-115	7.5-8.5	X			X			X			**1 VOC**							**PCE**	

Table 1.1
Summary of Soil and Groundwater Samples Above TACO Tier 1 ROs
Spartans Square Shopping Center, Romeoville, IL

SAMPLE I.D.	Soil Sample Depth	Soil Sample	Groundwater Sample	Soil Gas Sample	ANALYSES PERFORMED: VOCs	BTEX+MTBE	SVOCs	PNAs	TAL Metals	Pesticides/PCBs	Exceedances of TACO Tier 1 Remediation Objectives	TIER 1 REMEDIATION OBJECTIVES EXCEEDANCES: Industrial-Commercial Ingestion	Industrial-Commercial Inhalation	Construction Worker Ingestion	Construction Worker Inhalation	Residential Ingestion	Residential Inhalation	Soil Component of the Groundwater Ingestion Exposure Route	Groundwater
												Ingestion	Inhalation	Ingestion	Inhalation	Ingestion	Inhalation	Class I	Class I
X116 SM-GP-116	7.5-8.5	X			X			X			1 VOC							PCE	
X11 7 SM-GP-117	10-11	X			X		X		X	X	1 VOC							PCE	
G117 (Temp Well) SM-GP-117			X		X		X	X	X	X	1 VOC								PCE
X118A SM-GP-118	2-3	X			X														
X118B SM-GP-118	9-10	X			X														
V3/OSE Well Installation May 2009																			
G101 SM-MW-01 G101 MS/MSD			X		X		X		X	X	1 VOC, 3 Metals								PCE, Al, Fe, Pb, Mn
G102 SM-MW-02			X		X		X		X	X	4 VOCs								PCE, BDM, Bromoform, Chloroform
G103 SM-MW-03			X		X		X		X	X	3 VOCs								BDM, Chloroform, PCE
G104 SM-MW-04			X		X		X		X	X	4 Metals								Al, Fe, Pb, Mn
V3 Soil Gas Survey February 2013																			
SM-SG-01				X	X														
SM-SG-02				X	X														
SM-SG-03				X	X														
SM-SG-04				X	X														
SM-SG-05				X	X														
SM-SG-06				X	X														

BAA =Benzo(a)anthracene, BBF= Benzo(b)fluoranthene, BAP=Benzo(a)pyrene, BKF=benzo(k)flouranthene, IP=Indeno(1,2,3, cd)pyrene
PCE= Tetrachloroethene, BDM= Bromodichloromethane
Al=Aluminum, Fe=Iron, Pb=Lead, Mn=Manganese
X112 = OSE Sample/Boring Location
MS/MSD = Matrix Spike/Matrix Spike Duplicate
G105 = OSE Sample/Well Location
Chemicals with laboratory reporting limits > Remediation Objectives are not indicated on this table.
SM-GP-101 = V3 Geoprobe (GP) Location
SM-MW-01 = V3 Monitoring Well (MW) Location