Brownfield Cleanup Program

Remedial Investigation Work Plan

Hope On Main Site
954 and 1000 Main Street
City of Buffalo, Erie County, New York

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APPENDICES

ACRONYM LIST

AAR	Alternatives Analysis Report
ACM	Asbestos-containing Material
ASP	Analytical Services Protocol
BGS	Below Ground Surface
BSA	Buffalo Sewer Authority
CAMP	Community Air Monitoring Plan
CPP	Citizen Participation Plan
DER	Department of Environmental Remediation
DUSR	Data Usability and Summary Report
EDD	Electronic Data Deliverable
ELAP	Environmental Laboratory Accreditation Program
HASP	Health and Safety Plan
IRM	Interim Remedial Measures
MS/MSD	Matrix Spike / Matrix Spike Duplicate
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PAH	Polycyclic Aromatic Hydrocarbons
PID	Photo-ionization Detector
RI	Remedial Investigation
RI/AAR/RWP	Remedial Investigation / Alternative Analysis Report/ Remedial Work Plan
SCO	Soil Cleanup Objectives
Site	954 and 1000 Main Street, Buffalo, New York
SVOC	Semi-volatile Organic Compounds
U.S. EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compounds

EXECUTIVE SUMMARY

This document presents the Remedial Investigation and Interim Remedial Measures Work Plan for 954 and 1000 Main Street in Buffalo, New York (the Site). The project details are summarized below:

Contaminant Source and Constituents

Contamination in excess of end use soil cleanup objectives associated with petroleum-related compounds and historic fill material is located on the Site. Constituents in the fill requiring remediation include semi-volatile organic compounds (SVOCs) and metals. Groundwater at the site has not been evaluated.

Extent of Contamination

Analytical results indicate that contaminants are located within the fill material and, in specific locations, underlying native material. Contaminant concentrations varied significantly both vertically and horizontally across the Site due to the heterogeneous nature of the material. Based on investigations conducted to date, the highest contaminant concentrations tend to be located from surface to approximately two feet below surface.

The historic fill material generally extends from below the asphalt surface to an average depth of two feet below grade (maximum of four feet) and is present across the Site.

Proposed Site Redevelopment

The project will include replacement of the existing emergency shelter, as well as construction of low-income and affordable apartments and townhouses, a courtyard, parking and related improvements.

Remedial Investigation

To characterize site conditions and identify the appropriate remedy for the Site, a Remedial Investigation (RI) will be implemented. The RI will include the collection and analysis of contaminated material, native soil, and groundwater samples.

1 INTRODUCTION

This Remedial Investigation (RI) Work Plan provides a description of the procedures that will be implemented to characterize the nature and extent of contamination of soil at the 954 and 1000 Main Street (the Site) and the proposed methods to address that contamination. This RI Work Plan has been prepared in accordance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation "Technical Guidance for Site Investigation and Remediation" (DER-10). To effectively characterize the environmental conditions, this RI Work Plan discusses the following:

- Current and historic site conditions
- Contaminants of concern and the extent of the contamination
- Extent of RI activities
- Quality controls and protocols for analytical sampling
- Health and safety procedures to protect site workers and the local community
- Community participation activities

On December 20, 2022, SAB Hope, LLC, (Applicant) acting as BCP Volunteer, submitted a BCP Application to remediate and develop 954 and 1000 Main Street in the City of Buffalo, New York. Investigative actions covered under this RI Work Plan will include the entire 2.88-acre BCP Site.

The Salvation Army (TSA) owns and operates two parcels that contain five existing buildings - 954 Main Street, 960 Main Street, 972 Main Street, 984 Main Street and 1000 Main Street in the City of Buffalo (City). TSA exists to offer hope for a better life by meeting basic human needs without regard to age, religion, ethnicity or educational level. TSA has operated at its Main Street campus in the City since the late 1950s to serve its mission of helping others through more than a dozen programs, including Emergency Family Assistance, Supervised Visitation, Emergency Shelter, Employment Services, Conflict Resolution/Anger Management, Corps Community Centers, Emergency Disaster and Canteen Services. While the needs of the City have shifted dramatically over the last sixty years, with an urgent need for affordable housing and additional family shelter capacity, TSA's focus has also shifted from providing mostly community activities to providing vital community services, housing in particular.

Phase I of TSA's redevelopment plans includes the replacement of its existing emergency shelter. TSA currently operates the largest family emergency shelter in the City, which is one of only two in the entire county. During this phase, the building identified as 954 Main Street would be vacated (currently office and programming space) and demolished. The remainder of the campus would continue to be used and occupied as it is now (chapel, assembly hall space, administrative offices, programming space, after-school programs, social services programs, and an emergency shelter). A new three-story

emergency shelter for families would be constructed on the site of the former 954 Main Street building and occupied prior to full completion of the BCP. Once completed, the ground floor of the new shelter will house program space to support shelter residents, and the two stories above will include 32 units with 80 beds.

Once the new emergency shelter is constructed and occupied, Phase 2 can begin. During this Phase, the existing emergency shelter at 984 Main Street will be demolished (the old shelter cannot be demolished until the new shelter is constructed and occupied). In addition, TSA will demolish 972 Main Street and 1000 Main Street, which, along with the 984 Main Street, will make way for low-income and affordable apartments and townhouses, off-street parking spaces, a front plaza on Main Street, an interior courtyard for residents and staff, interconnecting walkways for movement across the Property, and related improvements. A new seven-story 147-unit apartment building will front on Main Street and is comprised of studio, one-bedroom, two-bedroom and three-bedroom units, with the ground floor consisting of apartments, common areas and amenities for residents, as well as program and administrative space for TSA. Five new two-story townhouse buildings totaling 17 units will front on North Pearl Street. 960 Main Street will be also renovated during this phase and while some programs will be moved off-site as needed, it will continue in operation to provide programming, administrative offices and worship services. Once Phase 2 is complete 960 Main Street will generally continue to operate the same, although some of the programs will move from 960 Main (or from off-site locations) to the first floor of the new apartment building.

An RI will be implemented to further evaluate the extent of the contaminated fill material and to aid in the preparation of an Alternatives Analysis Report (AAR). **Section 4 Remedial Investigation** describes the scope of the investigation during remediation.

1.1 Site Description

The Site is comprised of two parcels: 954 Main Street (SBL: 100.78-6-1.1) and 1000 Main Street (SBL: 100.71-6-6.1) are approximately 2.88 acres.

The Site is located between the City's Allentown Neighborhood, a residential and commercial neighborhood, and the Buffalo Niagara Medical Campus. The Site is approximately 2.88-acres and is owned by The Salvation Army. North Street is located to the north, Main Street to the east, North Pearl Street to the west, and Allen Street to the south. Land uses immediately adjacent to the BCP Site include commercial, residential uses, and health care (Buffalo Medical Campus).

The majority of Main Street is underlain by the Niagara Frontier Transportation Authority (NFTA) Light Rail Tunnel. The NFTA rail system has three sections:

- The surface tracks that run from the Inner Harbor to West Tupper Street;
- The shallow tunnels (constructed by digging through the overburden) which run from West Tupper Street to W/E Ferry Streets; and

- The deep bored tunnels (bored through the bedrock) which runs from Ferry Street to the end of the line at the University at Buffalo Station.

The Site is located in the shallow tunnel section; the tracks are over 20 feet bgs. The underground rail tunnel and associated drain system may act as a sink for groundwater

Figure 1 shows the location of the Site and **Figure 2** shows the Project Area and Site Boundaries.

1.2 Site History

According to historical records, the Site was initially occupied by residential homes. The property at 978 Main Street contained a gas station from the 1930s to the 1960s. The property at 988 Main Street contained an auto repair shop from 1946 to the 1950s. After 1960, the gas station at 978 Main Street was demolished for a hotel that operated from 1964 to 1998. The auto repair shop was demolished after 1951. The office and day care building at 1000 Main Street was constructed in 2001.

Contamination at the Site appears to be from the placement of historic fill material throughout the years as property uses changed along Main Street and buildings were built and/or demolished.

1.3 Site Geography, Geology, and Hydrogeology

Fill material identified on-site consisted of any one or mixture of the following materials:

Crushed Rock	Lumber
Sand	Ash/Cinders
Silt	Ceramics
Clay	Bricks
Plastics	Metal
Construction Debris	

Fill material was generally observed across the Site from beneath the asphalt surface to approximately one feet to four feet below ground surface (bgs). The fill material consists of a mixture of soil types (sand, silt and or clay), ash, coal, gravel and construction demolition debris.

Due to the tight fine-grained nature of the site soils, the drill rig could not reach groundwater. Temporary monitoring well TMW-01 was installed at 24 feet bgs to collect groundwater; however, after allowing the temporary monitoring well to sit for over 24 hours no water was collected.

C&S was involved with the investigation and remediation of the 1001 Main Street BCP site, located east across Main Street. The following is known about the hydrology at

the 1001 Main Street BCP site and should be considered similar to the Salvation Army Site.

Based on our understanding of conditions at a nearby property, the principal groundwater-bearing zone is likely located within the coarse sand and gravel layer that is generally present between 32 and 35 feet bgs. This layer is of variable thickness (generally six inches to three feet) but is horizontally discontinuous and is confined by the dense fine sands and silt above and below the groundwater bearing zone.

Groundwater flows from the west to the northeast, following the depositional area of the confined groundwater bearing zone.

2 SUMMARY OF ENVIRONMENTAL CONDITIONS

2.1 Environmental Reports

Site characterization efforts were recently conducted to assess contaminant concentrations at the Site and the results are summarized on **Figure 3**. This site characterization was conducted as a 2013 and 2022 Phase I and 2021 Limited Investigation (ESA). **Appendix A** contains these previous environmental reports.

Analytical results from the investigations are summarized in **Section 2.2** below.

2.2 Nature and Extent of Contamination

According to historical records, the Site was initially occupied by residential homes. The property at 988 Main Street contained an auto repair shop from 1951 to 1981. The property at 978 Main Street contained a gas station and lubrication building from 1951 to 1981. After the gas station was demolished, a hotel was built on the property which was later converted into a shelter for the Salvation Army.

The approximate location of the former gas station is shown the attached figures**.**

Contamination may be related to the placement of urban fill material throughout the years as property uses changed along Main Street and buildings were built and/or demolished.

Subsurface Soil

Based upon investigations conducted to date, the primary contaminants of concern in the surface and subsurface soil include SVOCs/PAHs and metals. These contaminants are found in surface soils and the fill material to depths of four feet. SVOCs and metals with the highest exceedances in surface soil were detected in the sample taken adjacent to the Salvation Army building. SVOC and metals in subsurface soil were widespread, with the highest exceedances in the one to two-foot depths.

The highest SVOC exceedances marginally exceed Residential Use, Restricted Residential Use, Commercial Use, and Industrial Use SCOs. Metals are also widespread throughout the Site. Lead, mercury and zinc were found to exceed Unrestricted Use SCOs. One location in the parking lot behind the office and day care building contained manganese above Industrial Use SCOs.

The fill material appears to be a mixture of soil types (sand, silt and or clay), ash, coal, gravel and construction demolition debris. The native soil is a silt and clay.

Groundwater

At this time, groundwater at this Site have not been characterized.

All potable water used in the City of Buffalo is provided by a publicly-owned treatment facility. Use of groundwater for potable purposes is prohibited throughout the City of Buffalo.

2.3 Fish and Wildlife Resources Impact Analysis (FWRIA)

As outlined in DER-10 Section 3.10, the purpose of the FWRIA is to identify actual or potential impacts to fish and wildlife resources from site contaminants of ecological concern.

If the following apply at a site, it is assumed no FWRIA is needed.

- The remediation is directed toward a specific discharge or spill event that does not adversely impact fish and wildlife resources.
- The areas of concerns at the site consist solely of an underground storage tank(s) or an underground tank system, with no significant impact on surrounding groundwater or surface water.
- The site is a point source of contamination to the groundwater (i.e. dry cleaner or gas station) which will be prevented from discharging to surface water, and there is no widespread soil contamination or habitat of an endangered, threatened or special concern species present.
- There are no ecological resources present on or in the vicinity of the site.

The Site and surrounding area consist of densely developed urban land in the City of Buffalo. There are no ecological resources present on the Site and, consequently, no fish and wildlife resource impacts have been identified; therefore, no FWRIA is needed.

3 OBJECTIVES, SCOPE AND RATIONALE

The objectives of the scope of work described in this Work Plan are to evaluate contaminant impacts to soil and identify and evaluate appropriate remedial actions necessary to redevelop the Site. The investigation work will include evaluating the magnitude and extent of contaminant impacts, conducting a qualitative exposure assessment for actual or potential exposures to contaminants at the Site and/or emanating from the Site, and producing data that will support the development of an acceptable RI Report and subsequent Alternatives Analysis Report (AAR).

The RI is based on information previously gathered regarding historical operations conducted at the Site, the results of the limited site characterization, and the project objectives. The RI will include the following:

- Surface Soil Evaluation - samples will be spatially distributed across the Site in areas not "capped" by asphalt or buildings. Samples will be collected from 0 to 2 inches below grade using a decontaminated, stainless steel spoon or spatula.

- Soil Evaluation – This task will consist of two primary elements: evaluation of fill material and underlying native soils.

    - The fill material will be characterized to identify the extent and magnitude of contamination. This material will also be the subject of waste characterization sampling because subsequent remedial activities would likely include the excavation and off-site disposal of the historic fill.

    - The underlying native soils will be characterized to determine the depth of impacts from the overlying contaminant sources and the depths at which remedial efforts may be terminated.

- Groundwater Evaluation – Subsequent to completing soil investigation tasks, groundwater monitoring wells will be installed. Although proposed well locations are shown on **Figure 5**, their final locations will be based on the results of the soil evaluation task and approved by NYSDEC.

- Soil Vapor Evaluation - Sub-slab and indoor air sampling at the 960 Main Street building (will not be demolished) may be performed contingent on finding VOC contamination adjacent to or under the building.

The RI activities will be completed in general accordance with NYSDEC Division of Environmental Remediation: Technical Guidance for Site Investigation and Remediation dated May 2010 (DER-10).

4 REMEDIAL INVESTIGATION

Previous soil investigations encountered historic fill material at the Site that is impacted by SVOCs and metals at concentrations above NYSDEC SCOs. This part of the RI Work Plan describes the scope of investigative work necessary to collect sufficient data to determine the extent of contaminated fill material which will support subsequent remedial actions in achieving **Unrestricted Use SCOs**. This section of the RI Work Plan includes:

- Field Investigation
- Sampling Program
- Laboratory Analysis

4.1 Field Investigation

The RI intends to supplement the previous site characterization information by the advancement of soil borings, installation of monitoring wells, and collecting and analyzing soil and groundwater samples. All sample locations described in the sections below are presented on **Figure 7**.

4.1.1 Surface Soil Program

Surface soil samples will be collected from the top two inches below the vegetative layer. In four locations, one surface sample will be collected and analyzed for the following:

- Total Compound List (TCL) SVOCs
- TCL pesticides
- Total polychlorinated biphenyls (PCBs)
- Target Analyte List (TAL) metals
- Total mercury
- Total cyanide
- Hexavalent chromium
- Silvex
- Per- and Polyfluoroalkl Substances (PFAS)
- 1,4-dioxane

4.1.2 Subsurface Soil Program

Soil Boring Program

A direct-push soil boring study will be implemented at the Site. Each soil boring should be advanced into the fill material, up to 15 feet (ft) below the ground surface (bgs), or at the discretion of the environmental engineer/scientist. Exploration locations will be mapped with a global positioning system or tape measured from existing site features.

Soils from the borings will be continuously assessed for visible or olfactory indications of impairment, and/or indication of detectable volatile organic compounds (VOCs) with a photoionization detector (PID). Positive indications from any of these screening methods are collectively referred to as "evidence of impairment." Soil boring logs will be completed and include soil description, PID readings, etc. The boring logs will be included in the RI Report.

The proposed soil boring locations are shown in **Figure 4A** and **Figure 4B.**

Fill Sampling

Fill samples will be collected from the borings based on evidence of impairment and to provide characterization across the Site. In 11 locations, one urban fill sample will be collected and analyzed for the following:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- Total polychlorinated biphenyls (PCBs)
- Target Analyte List (TAL) metals
- Total mercury
- Total cyanide
- Hexavalent chromium
- Silvex
- Per- and Polyfluoroalkl Substances (PFAS)
- 1,4-dioxane

Additionally, up to 22 samples will be collected from the urban fill for waste disposal characteristics (approximately half the potential volume to be removed). The waste characterization analysis will include:

- Toxicity Characteristic Leaching Procedure (TCLP) VOCs
- TCLP SVOCs
- TCLP Pesticides
- TCLP Herbicides
- TCLP RCRA metals
- PCBs
- Reactivity
- Corrosivity
- Ignitability
- pH
- Percent Solids

Test Pits

Test pits will be excavated with a conventional track-mounted excavator. Test pits will be excavated to a maximum depth of ten feet bgs or to native material and extend to a maximum of ten feet in length.

Soils from the test pits will be continuously assessed for visible or olfactory indications of impairment, and/or indication of detectable VOCs with a PID. Positive indications from any of these screening methods are collectively referred to as "evidence of impairment." Test pit logs will be completed and include soil description, PID readings, etc. The boring logs will be included in the RI Report.

A total of five test pits will be excavated across the Site. From each test pit, five near surface soil samples will be collected from one to two feet bgs. Near surface soil samples will be collected and analyzed for the following:

- TCL VOCs
- TCL SVOCs
- Total PCBs
- TAL metals
- Total mercury
- Total cyanide

The proposed test pit locations are shown in **Figure 4A** and **Figure 4B**.

Native Soil Sampling

Native soil will be visually assessed and sampled in each of the 55 grid locations. In order to assess the impact of fill on the underlying native soil, a soil sample will be collected from the top two feet of native material in each grid location. The 55 native soil samples will be collected and analyzed for:

- TCL VOCs
- TCL SVOCs
- TCL pesticides (from 11 of 55 samples only)
- Total PCBs (from 11 of 55 samples only)
- TAL metals
- Total mercury
- Total cyanide
- Hexavalent chromium (from 11 of 55 samples only)
- Silvex (from 11 of 55 samples only)
- Per- and Polyfluoroalkl Substances (PFAS)
- 1,4-dioxane

Based on the results, the **55 native soil samples will also serve as the final confirmatory samples** during the subsequent remedial activities. If requested by the NYSDEC, additional confirmatory samples may need to be collected based on RI data.

In addition to collecting samples at the top of the native material, two additional samples will be collected at one-foot intervals below the first native soil sample. These deeper samples will be submitted to the laboratory but held until the uppermost native soil sample is analyzed. If any analytes exceed the respective SCOs, the next deeper sample will be analyzed for only those compounds that exceed the SCO. If the concentrations in that sample also exceeds the SCOs, the next lower sample will be analyzed and the results will be compared to the SCOs. The process will be repeated for the third sample, if necessary. The intent of this sampling scheme is to identify the depth of remedial investigation and use the sampling results as the confirmatory sample results for the RAWP.

Deep Native Soil Sampling

Additionally, up to five samples, one sample per location, will be collected from deeper native soils below the last confirmatory interval, outlined above, to a maximum depth of 15 feet below ground surface. The deep native soil characterization analysis will include:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- Total PCBs
- TAL metals
- Total mercury
- Total cyanide
- Hexavalent chromium
- Silvex
- Per- and Polyfluoroalkl Substances (PFAS)
- 1,4-dioxane

Groundwater Monitoring Wells

Five samples, one sample per monitoring well location, will be collected from center of the screened interval. The soil samples collected from monitoring wells analysis will include:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- Total PCBs
- TAL metals
- Total mercury

- Total cyanide
- Hexavalent chromium
- Silvex
- Per- and Polyfluoroalkl Substances (PFAS)
- 1,4-dioxane

4.1.3 Groundwater Monitoring

To characterize groundwater conditions at the Site, five new monitoring wells will be installed. The proposed new wells are located throughout the Site, as shown in **Figure 5**.

New overburden wells will be constructed to intersect the top of the water table. Each well will be completed with 5 to 10 feet of 2-inch Schedule 40 0.010-slot well screen connected to an appropriate length of schedule 40 PVC well riser to complete the well. The annulus will be sand packed with quartz sand to approximately one to two feet above the screened section, and one to two feet of bentonite chips or pellets above the sand. The remaining annulus will be grouted to ground surface. Each well will be completed with protective casing.

The development process will continue until removal of a minimum of 110% of the water lost during drilling, three well volumes; whichever is greater (or as specified in the Work Plan), and when water quality monitoring demonstrates stabilization of the effluent. The water quality meter will be calibrated prior to each sampling event (and more often as required by the manufacturer's data), using calibration fluids. Stabilization criteria is shown in the table below. In the event that limited recharge does not allow for the recovery of all drilling water lost in the well or three well volumes, the well will be allowed to stabilize to conditions deemed representative of groundwater conditions. Stabilization periods will vary by project but will be confirmed with the NYSDEC prior to sampling.

Well Development Stabilization Criteria

Parameter	Stabilization Criteria
pH	Difference of ±0.2
specific electric conductance	Difference of ± 3%
temperature	Difference of ± 0.5 ºC
turbidity	±10% (when turbidity is greater than 10 NTUs)
oxidation -reduction potential (ORP)	± 20 millivolts
dissolved oxygen (DO)	10% or ±0.2 mg/L, whichever is greater

Sampling will be completed one week after well development to allow natural groundwater conditions to be re-established.

Groundwater sampling will be conducted using low-flow purging and sampling techniques. Before purging the well, water levels will be measured using an electric water

level sounder capable of measuring to the 0.01 foot accuracy. Peristaltic or bladder pumps using manufacturer-specified tubing will be used for purging and sampling groundwater. Calibration, purging and sampling procedures will be performed as specified by the USEPA1 for low-flow sampling. Decontamination will be conducted after each well is sampled to reduce the likelihood of cross contamination. Calibration times, purging volumes, water levels and field measurements will be recorded in a field log and will be provided in the RI Report.

The groundwater samples will be analyzed for the following analyte list:

- TCL VOCs
- TCL SVOCs
- TCL pesticides
- Total PCBs
- TAL metals
- Total mercury
- Total cyanide

Historic uses and sampling performed to date does not indicate the Site will contain per- and poly-fluoroalkyl substances (PFOA / PFOS) and 1,4-dioxane. As a prerequisite screening of the Site, the NYSDEC requested the collection of one round of groundwater samples for the analysis of PFOA / PFOS and 1,4-dioxane on five groundwater monitoring wells. PFAS sampling will follow the NYSDEC's current guidance in the April 2023 version of Sampling, Analysis, and Assessment of Per-and Polyfluoroalkyl Substances.

A second round of groundwater sampling will be performed approximately four weeks after the first round. The second round of groundwater samples will be analyzed for the same analytes as in the first round (excluding PFOA / PFOS and 1,4-dioxane if the initial results are under NYSDEC guidance values).

4.1.4 Soil Vapor Intrusion

Prior to sampling, the sampling areas will be screened for volatile organic vapors (VOVs) utilizing a PID with a 10.6 eV lamp and an inventory of petroleum or chemical storage in the vicinity of the sampling areas, that could affect sampling results.

Sampling protocol will follow New York State Department of Health (NYSDOH) Guidance on Evaluating Soil Vapor Intrusion in the State of New York (2006), with updates (SVI Guidance).

Two sub-slab air samples will be collected per the following:

[1] U.S. EPA Region 1 Low Stress (low-flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, January 19, 2010.

- A hammer drill will be used to create a ½ inch hole through the concrete floor. Polyethylene tubing will be inserted one to two inches into each hole and the floor penetration around the tubing will be sealed at each location using soft, pliable, VOC-free clay.

- An enclosure will be constructed around the sub-slab sampling point (e.g., plastic bag, plastic bucket, etc.) and sealed to the sample point tubing in order to perform a tracer gas evaluation. The enclosure will be enriched with helium as a tracer gas.

- The sub-slab sampling point will be purged 1 to 3 tubing volumes at a rate not to exceed 0.2 L/m to ensure that a representative sample of soil vapor will be obtained. During purging, the purged soil gas will be tested for the tracer gas by an appropriate meter (i.e., a meter capable of measuring the concentration of the tracer gas in at least percentage increments). In the event that the tracer gas is detected at a concentration of 10% or greater, the sample point will be resealed and retested prior to sampling.

- Subsequent to purging and tracer gas testing, a certified clean summa canister equipped with a laboratory calibrated regulator will be connected to the tubing to collect the sample over a 24-hour period.

- At the end of sampling, at least one inch of vacuum will be left in the summa canister to meet data quality objectives.

- After removing the tubing from holes in the floor, the floor will be repaired with a quick drying cement mixture.

The indoor air samples will be co-located with the sub-slab vapor samples. The sampling devices will be placed approximately three to five feet off the ground for sample collection purposes and samples will be collected using a Summa canister equipped with a laboratory calibrated regulator over a 24-hour period.

One outdoor air sample to characterize background air quality in the vicinity of the building as a means to evaluate the sub-slab and indoor air results. The sampling device will be located downwind of the structure and will be placed approximately three to five feet off the ground for sample collection purposes. The outdoor air sample will be collected using a Summa canister equipped with a laboratory calibrated regulator over a 24-hour period.

The samples will be sent to a certified laboratory and analyzed for VOCs by USEPA Method TO-15. Detection limits are 1 µg/m3.

The proposed soil vapor sampling locations are shown in **Figure 6**.

4.2 Sampling Plan and Laboratory Analysis

Table 1 summarizes the sampling program described in the sections above. Additionally, Quality Assurance/Quality Control (QA/QC) samples will be collected, and the following describes the minimum number of samples per media type.

- Soil samples (excluding waste characteristic samples)
    - Blind duplicate – 5%
    - Matrix Spike/Matrix Spike Duplicate (MS/MSD) – 5%
- Groundwater samples
    - Trip blank – 1 per shipment
    - Blind Duplicate – 5%
    - Matrix Spike/Matrix Spike Duplicate (MS/MSD) – 5%

C&S will utilize the services of an NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory for analytical testing. The laboratory results for the samples will be reported in a Category B deliverables package to facilitate validation of the data, and a third party validator will review the laboratory data and prepare a Data Usability Summary Report (DUSR). The validator will evaluate the analytical results for the field samples and quality assurance/quality control samples and compare the findings to USEPA guidance to determine the accuracy and validity of the results.

Summaries of the RI activities will be submitted to the NYSDEC as monthly progress reports and will be included in the RI Report. All data submitted to the NYSDEC will be in approved electronic data deliverable (EDD) format.

4.3 Management of Investigation-Derived Waste

Investigation-derived wastes (IDW) (i.e., grossly-contaminated soil cuttings and purge water) will be containerized or stockpiled and staged on-site, pending proper disposal at an offsite facility. Soil cuttings with no apparent staining, odors, or elevated PID readings will be used to backfill boring holes. Soil to be disposed off-site will be placed in steel 55-gallon drums. Decontamination fluids, if necessary, will be placed in steel 55-gallon drums with closed tops. Drums will be properly labeled, sealed, and characterized as necessary. If RI analytical data is insufficient to gain disposal facility acceptance, waste characterization samples will be analyzed for parameters that are typically required by disposal facilities. Additional sampling and analyses may be required based on the selected disposal facility.

Discarded personal protective equipment (PPE) (i.e., latex gloves, Tyvek, paper towels, etc.) and disposable sampling equipment (i.e., bailers or stainless-steel spoons) will be placed in sealed plastic garbage bags and disposed of as municipal solid waste.

5 QUALITY ASSURANCE AND QUALITY CONTROL PROTOCOLS

To ensure that suitable and verifiable data results are obtained from the information collected at the Site, quality assurance procedures are detailed in this section.

5.1 Sampling Methods, Analytical Procedures and Documentation

5.1.1 Sampling Methods

Sampling procedures will be conducted in accordance with the NYSDEC *Sampling Guidelines and Protocols Manual*. Collection of representative samples will include the following procedures:

- Ensuring that the sample taken is representative of the material being sampled;
- Using proper sampling, handling and preservation techniques;
- Properly identifying the collected samples and documenting their collection in field records;
- Maintaining chain-of-custody; and
- Properly preserving samples after collection.

Soil Sampling

Soil sampling will be performed using two methods: (1) field screening using a PID; and (2) grab samples. Whether soil samples are collected from the excavator bucket, direct-push rig sleeves, or split-spoons, they will be collected as grab samples that are split and placed into jars supplied by the laboratory as well as into individual zip-lock bags for screening. Screening soil samples will be allowed to sit in sealed zip-lock bag for a short period of time (minimum of five minutes). Head space measurements will then be taken from each zip-lock bag. To prevent cross contamination, zip-lock bags will not be reused and will be properly disposed. Calibration of all electronic field screening equipment will be completed daily and will be done to manufacturer's specifications.

As detailed in the *Sampling Guidelines and Protocols Manual*, grab samples will be placed in 4-ounce and 8-ounce, wide-mouth, glass jars. Sample jars will immediately be placed on ice in a cooler.

Water Sampling

Groundwater sampling will be conducted in accordance with USEPA guidance for low-flow purging and sampling, as described in **Section 4**.

Water samples will be collected in 40 ml and 1-liter glass jars and immediately placed on ice. The water will be analyzed for VOC, SVOC, PCBs, pesticides and metals on a standard turnaround time.

Air Sampling

Sampling protocol will follow New York State Department of Health (NYSDOH) Guidance on Evaluating Soil Vapor Intrusion in the State of New York (2006), with updates (SVI Guidance).

Indoor air samples are collected using a SummaTM canister (1-Liter capacity) equipped with a critical orifice flow regulation device sized to allow an air sample to be collected over a 24-hour sampling period. Care is taken to deploy the canisters away from the direct influence of any forced air emanating from air conditioning units, central air conditioning vents, furnaces or heaters. The indoor air sampling procedure is as follows:

- Prior to initiating sampling, C&S conducts a background review, building assessment, and preliminary screening in order to select appropriate sampling locations that will not be affected by building operations, construction, or features such as occupants, sumps / basements, windows / doors, heating / cooling systems, material storage, etc. In addition, an inventory of products utilized in or near the sampling areas was prepared.

- Air sample canisters are labeled with a unique sample designation number. The sample number and location are recorded in the field log book.

- The canister vacuum is measured using an integrated vacuum gauge immediately prior to canister deployment and recorded in the field log book. The critical orifice flow controller is installed, as supplied by the laboratory, on the canister; the canister is opened fully at the beginning of sample collection period; and the start time is recorded.

- The canister valve is closed fully at the end of the sample period by disconnecting the regulator from the canister (after 24-hours) and the end time recorded. Any evidence of canister disturbance during the sample collection is recorded.

- The canister vacuum is measured and recorded immediately after canister retrieval at the end of the sample period. Once the vacuum is measured, the canisters are returned to their sampling boxes for safe storage and shipping. Field data is verified as correctly entered into field books prior to shipment and the canisters are shipped to the laboratory under a chain-of-custody.

Sub-slab sampling points are installed to collect soil gas immediately below the slab. Sub-slab gas samples are collected using a 1-Liter Summa™ canister fitted with a flow orifice pre-calibrated to collect a 1-Liter sample over a 24-hour period. The sub-slab vapor points are installed by first drilling a small diameter hole (approximately 3/8-inches in diameter) through the floor slab to determine thickness. The hole extends through the slab and terminates at the interface with underlying material (i.e. gravel base or soil).

A sample point consisting of a length of tubing is placed into the hole through the slab until the tubing sits directing above the soil material below the slab. The remaining cored slab annulus is then filled with clay around the tubing to create an air-tight seal. Prior to sub-slab soil gas sample collection, the tubing is purged at a rate not exceeding 200 ml/min. The total volume purged prior to sample collection equals three volumes of air in the tubing.

Helium is used as a field tracer prior to sampling to confirm that sub-slab airspace and indoor air space are not connected. The helium is introduced into a dome positioned above the sampling point. The tubing and indoor air are isolated prior to introducing helium into the dome. The helium concentration is read using a helium meter that is capable to read down to 1-2%. If helium is detected by the meter, the clay seal is replaced and the tracer test is re-performed.

At the end of the sampling event, a pressure gauge reading is recorded so that the laboratory can compare the starting and ending pressures. Once the 24-hour sampling period has been completed, the canister is disconnected from the flow orifice, boxed, and delivered / shipped to the laboratory for analysis. Field documentation are maintained in a field notebook and on field data forms.

Ambient air samples are collected in the same manner as the indoor air samples

QA/QC Sampling

Duplicate samples will be collected from a minimum of 5% of the locations, and will be selected randomly.

Quality Assurance/Quality Control samples will not be collected and analyzed for the waste characterization sampling.

Table 6-1: Summary of Estimated QA/QC Sampling

Sample Type	***Estimated No. Locations***	***Purpose***
Soil		
Surface	4	Characterization
Field Duplicate	0	QA/QC
Matrix Spike	0	QA/QC
Matrix Spike Duplicate	0	QA/QC
Fill / Impacted Material	11	Characterization
Field Duplicate	1	QA/QC
Matrix Spike	1	QA/QC
Matrix Spike Duplicate	1	QA/QC
Test Pits / Impacted Material	5	Characterization

Field Duplicate	0	QA/QC
Matrix Spike	0	QA/QC
Matrix Spike Duplicate	0	QA/QC
Native Soil	55	Characterization
Field Duplicate	3	QA/QC
Matrix Spike	3	QA/QC
Matrix Spike Duplicate	3	QA/QC
Deep Native Soil	5	Characterization
Field Duplicate	0	QA/QC
Matrix Spike	0	QA/QC
Matrix Spike Duplicate	0	QA/QC
Monitoring Wells Soil	5	Characterization
Field Duplicate	0	QA/QC
Matrix Spike	0	QA/QC
Matrix Spike Duplicate	0	QA/QC
Waste Characterization	22	Characterization
Groundwater		
Groundwater	10	Characterization
Field Duplicate	2	QA/QC
Matrix Spike	2	QA/QC
Matrix Spike Duplicate	2	QA/QC
Air		
Soil Vapor	5	Characterization
Field Duplicate	0	QA/QC
Matrix Spike	0	QA/QC
Matrix Spike Duplicate	0	QA/QC

5.1.2 Analytical Procedures

Laboratory Analysis

Laboratory analysis will be conducted by a third-party laboratory that is accredited by the NYSDOH Environmental Laboratory Accreditation Program (ELAP). Laboratory analytical methods will include the most current NYSDEC Analytical Services Protocol (ASP).

Soil, groundwater and air samples sent to a certified laboratory will be analyzed in accordance with EPA SW-846 methodology for the following contaminants:

- VOCs (EPA Method 8260);
- VOCs (EPA Method TO-15A);
- SVOCs (EPA Method 8270C);
- Pesticides (USEPA 8081A);

- Herbicides (USEPA 8151A);
- PCBs (USEPA 8082);
- Cyanide (USEPA Method 9010B);
- Mercury (USEPA Method 7471A);
- Hexavalent Chromium (USEPA Method 7196A); and
- Metals (EPA Method 6010B).
- 1,4 dioxane (EPA Method 8270SIM); and
- Per- and Poly-fluoroalkyl substances (EPA Method 537).

Category B deliverable will be requested to be used in a third-party data validation.

Data Usability

Data Usability Summary Report (DUSR) will be performed by a third-party data consultant using the most recent methods and criteria from the U.S. EPA. The DUSR will assess all sample analytical data, blanks, duplicates and laboratory control samples and evaluate the completeness of the data package. The waste characterization samples will not be validated.

5.1.3 Documentation

Custody Procedures

As outlined in NYSDEC *Sampling Guidelines and Protocols,* a sample is in custody under the following conditions:

- It is in your actual possession;
- It is in your view after being in your physical possession;
- It was in your possession and then you locked or sealed it up to prevent tampering; or
- It is in a secure area.

The environmental professional will maintain all chain-of-custody documents that will be completed for all samples that will leave the Site to be tested in the laboratory.

Air Monitoring

Air monitoring will be conducted to verify no impacts to ambient air. Air monitoring will be conducted during the subsurface soil program. The monitoring will include periodic screening for VOCs. All records will be kept on-site during the investigation and will be made available for regulatory inspection. A daily air monitoring log will be maintained through the end of remedial investigation field activities. Field activities will be reported daily including: date/weather, description/photos of work, Community Air Monitoring station data, and a figure indicating work location. Additionally, exceedances should be reported to the NYSDEC promptly and highlighted on the daily reports.

A CAMP is not generally required for investigation or delineation of site conditions, which are not considered intrusive. These activities include the collection of:

- Surface soil;
- Groundwater;
- Surface Water;
- Sediment;
- Ambient or indoor air; and/or
- Soil gas and sub-slab soil vapor (after the sampling ports have been installed).

6 HEALTH AND SAFETY

To verify the safety of the workers and the local community during the performance of the work, monitoring practices of the work environment will be in place during all phases of RI activities. A Health and Safety Plan (HASP) was prepared that details procedures for maintaining safe working conditions and minimizing the potential for exposure to contaminated material. The HASP is provided in **Appendix D**.

Air monitoring during RI activities will be conducted using PID. Details on air monitoring are provided in the Community Air Monitoring Plan (CAMP). The CAMP is provided in **Appendix C**.

For soil borings inside the buildings, the Salvation Army will close off the building to employees and tenants during soil boring advancement.

7 REPORTING

Based on the results of the work described above, one report will be prepared to describe the methodologies and results of the RI. The report will also identify and evaluate additional remedial activities for the Site, if any. The RI portions of the Report will describe:

- Investigative methods;
- Observations and findings;
- Inspection/monitoring observations of the remedial measures;
- Results of the community air monitoring program; and
- Analytical results.

The Alternatives Analysis Report (AAR) portion of the Report will include the following elements:

- Description of remaining contamination, if any
- Identification of potential, additional remedial measures
- Evaluation of potential, additional remedial measures, including no action following the remediation
- Identification of recommended additional remedy

The documents will be submitted to the NYSDEC for review and approval.

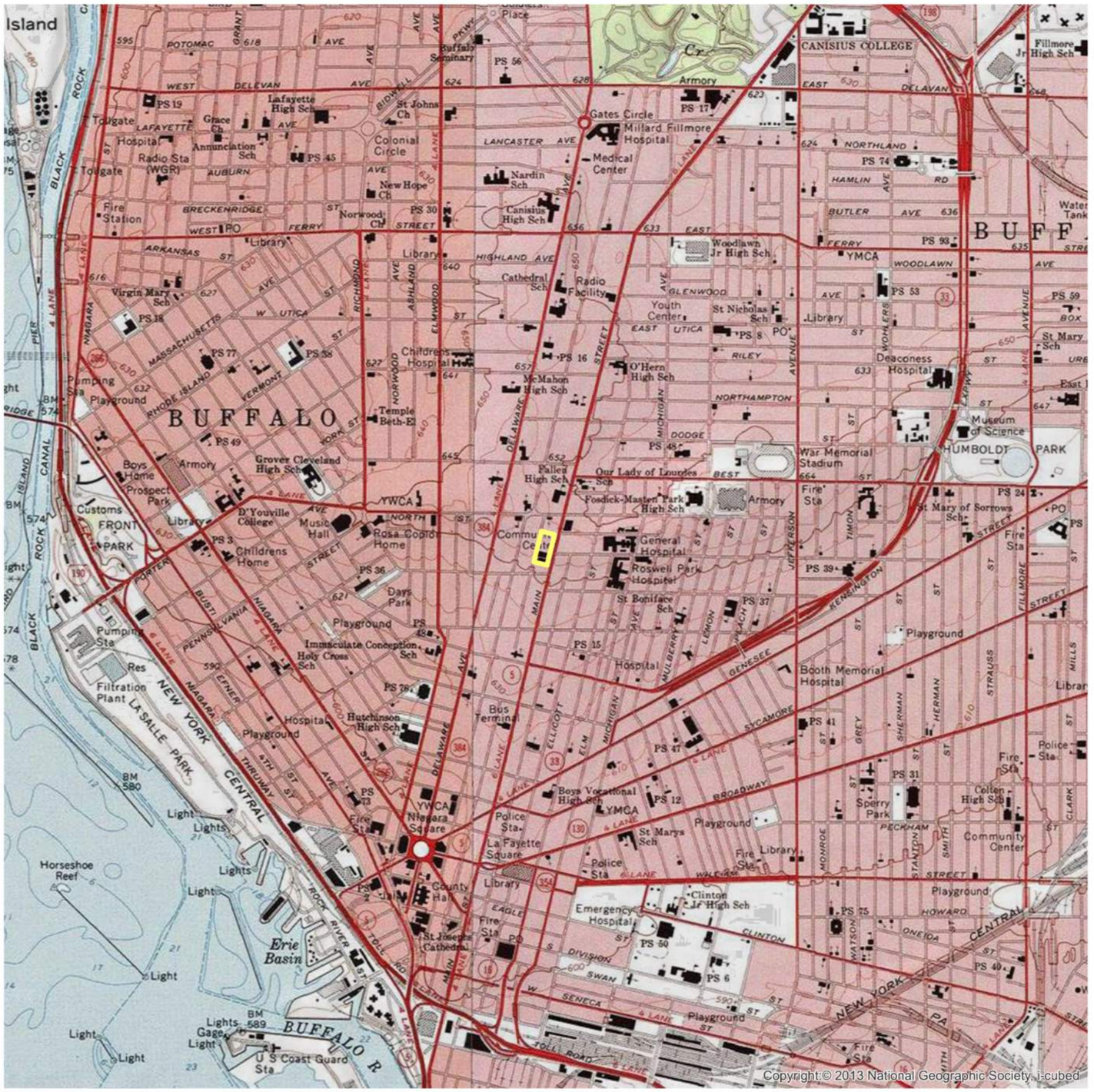
8 SCHEDULE

It is assumed that NYSDEC will promptly review this RI Work Plan followed by a 45-day comment period. Below is an anticipated schedule of milestones for the remediation of the Site.

Anticipated Date	Milestone
Early December 2022	Brownfield Cleanup Program ("BCP") Application Submission (Completed)
Early December 2022	Remedial Investigation Work Plan ("RIWP") Submission (Completed)
Late June 2023	Brownfield Cleanup Agreement ("BCA") Executed
Mid July 2023	RIWP Approved
Late July 2023	Remedial Investigation Begins
Early September 2023	Remedial Investigation Ends
Late October 2023	Remedial Investigation Report Submission
Early December 2023	Remedial Investigation Report Approval
Late October 2023	Remedial Action Work Plan ("RAWP") Submission
Early December 2023	Remedial Action WP Approved
Mid-February 2024	Decision Document
Phase 1	
October 2023	Interim Remedial Measure Work Plan for Demolition
November 2023	954 Main St. Demolition and Abatement
March 2024	Remedial Work Begins
April 2024	Remedial Work Ends
April 2025	Construction Ends
Phase 2	
May 2025	970 and 1000 Main St. Demolition and Abatement
June 2025	Remedial Work Begins
August 2025	Remedial Work Ends
May 2027	Construction Ends
June 2027	Final Engineering Report ("FER") Submission

August 2027	FER Approved
October 2027	Certificate of Completion Issued

FIGURES



Legend

BROWNFIELD CLEANUP PROGRAM (BCP) SITE

0 1,000 2,000 4,000 Feet

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HOPE ON MAIN
954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM
BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION

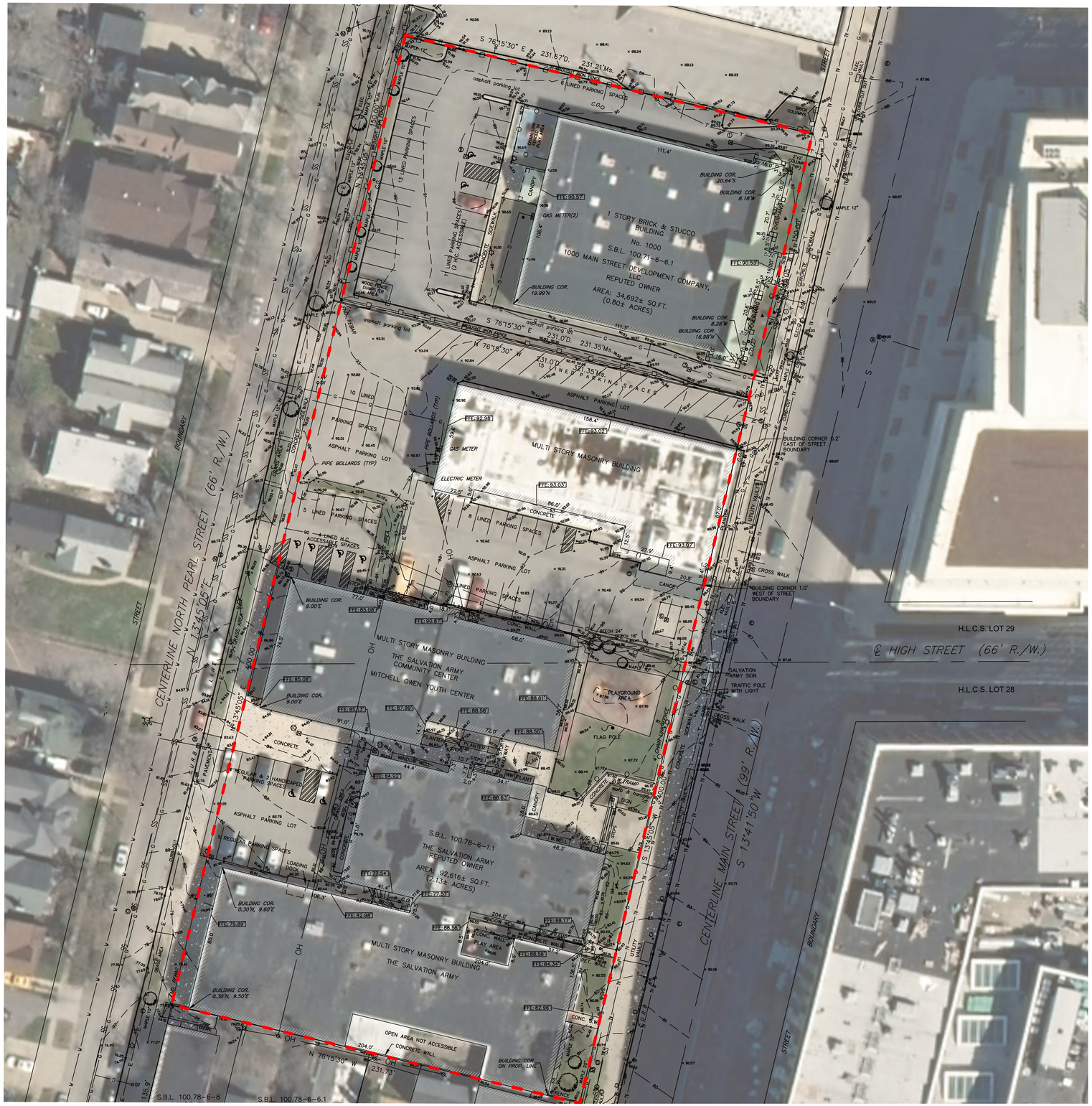
REVISIONS

PROJECT NO:	X97.001.001
DATE:	DECEMBER 2021
DRAWN BY:	
DESIGNED BY:	
CHECKED BY:	

SITE LOCATION

FIGURE 1

Oct 31, 2022 – 2:19pm
F:\Project\X97 – The Salvation Army\X97001001 – Buffalo Salvation Army BCP\Planning–Study\CADD\Sheets\A–1 USGS.dwg



LEGEND

BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY

SURVEY LEGEND

- CATCH BASIN
- C.O. CLEAN OUT
- COMMUNICATIONS MANHOLE
- ELECTRIC MANHOLE
- FLOOD LIGHT
- GVS GAS SERVICE VALVE
- GV GAS VALVE
- GUY WIRE
- HYDRANT
- LIGHT POLE, STANDARD
- PARKING METER
- SANITARY MANHOLE
- SANITARY VENT
- SIGN, ONE POST
- SIGN, TWO POST
- TRAFFIC MANHOLE
- UTILITY POLE
- WSV WATER SERVICE VALVE
- WV WATER VALVE

NOTES

1. SURVEY INFORMATION WAS PROVIDED BY GPI ENGINEERING, LANDSCAPE, ARCHITECTURE & SURVEYING, LLP DATED 12/10/2021. C&S ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

2. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND UTILITY LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTACT THE ENGINEER WITH ANY DISCREPANCIES FOUND IN THE FIELD.

3. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND LAYOUT.

0 30 60 120 FEET

SCALE: 1" = 30'

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THE SALVATION ARMY

HOPE ON MAIN
954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM

CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	X97.001.001
DATE:	OCTOBER 2022
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

SITE DETAIL

FIGURE 2

October 31, 2022 - 2:49PM
P:\Project\X97 - The Salvation Army\X97001001 - Buffalo Salvation Army BCP\Planning-Study\CADD\Sheets\DETAIL.dwg

Field Sample ID	EB-04-1-2FT
Sample Depth (feet)	1-2'
Date Sampled	07/02/2021
Units	mg/kg
Benzo[a]anthracene	1900
Benzo[a]pyrene	1600
Benzo[b]fluoranthene	2500
Benzo[k]fluoranthene	950
Chrysene	1800
Indeno[1,2,3-	930
Cadmium	2.6
Mercury	0.35
Copper	50.1
Lead	352
Manganese	15200
Zinc	421

Field Sample ID	EB-03-4-5FT
Sample Depth (feet)	4-5'
Date Sampled	07/01/2021
Units	mg/kg
Lead	113
Zinc	118

Field Sample ID	EB-02-4FT
Sample Depth (feet)	4'
Date Sampled	07/01/2021
Units	mg/kg
Benzo[a]anthracene	2200
Benzo[a]pyrene	2100
Benzo[b]fluoranthene	3600
Benzo[k]fluoranthene	1500
Chrysene	3200
Dibenz(a,h)anthrace	340
Indeno[1,2,3-	1300
Mercury	0.64
Lead	158
Zinc	211

Field Sample ID	SS-02
Sample Depth (inch)	0-2
Date Sampled	07/01/2021
Units	mg/kg
Benzo[a]anthracene	19000
Benzo[a]pyrene	19000
Benzo[b]fluoranthene	28000
Benzo[k]fluoranthene	12000
Chrysene	25000
Dibenz(a,h)anthrace	3600
Indeno[1,2,3-	13000
Mercury	0.9
Lead	186
Zinc	226

Field Sample ID	EB-05-1-2FT
Sample Depth (feet)	1-2'
Date Sampled	07/02/2021
Units	mg/kg
Benzo[a]anthracene	3200
Benzo[a]pyrene	2900
Benzo[b]fluoranthene	3900
Benzo[k]fluoranthene	1500
Chrysene	3400
Dibenz(a,h)anthrace	440
Indeno[1,2,3-	1400
Mercury	0.52
Lead	253
Zinc	205

Field Sample ID	SS-01
Sample Depth (inch)	0-2
Date Sampled	07/01/2021
Units	mg/kg
Benzo[a]anthracene	1400
Benzo[a]pyrene	1600
Benzo[b]fluoranthene	2700
Benzo[k]fluoranthene	960
Chrysene	2000
Indeno[1,2,3-	1100
Zinc	152

Field Sample ID	SS-03
Sample Depth (inch)	0-2
Date Sampled	07/01/2021
Units	mg/kg
Benzo[a]anthracene	1400
Benzo[a]pyrene	1600
Benzo[b]fluoranthene	2500
Benzo[k]fluoranthene	990
Chrysene	1700
Indeno[1,2,3-	990
Lead	142
Zinc	432

Field Sample ID	EB-07-1FT
Sample Depth (feet)	1'
Date Sampled	07/02/2021
Units	mg/kg
Mercury	0.25
Lead	146
Zinc	124

Field Sample ID	SS-04
Sample Depth (inch)	0-2
Date Sampled	07/01/2021
Units	mg/kg
Benzo[a]anthracene	1100
Benzo[a]pyrene	1100
Benzo[b]fluoranthene	1600
Chrysene	1100
Indeno[1,2,3-	650
Lead	92.5
Zinc	130

Field Sample ID	EB-06-1FT
Sample Depth (feet)	1'
Date Sampled	07/02/2021
Units	mg/kg
Lead	144

Field Sample ID	
Sample Depth (feet)	
Date Sampled	
Units	
ANALYTE CONCENTRATION EXCEED PART 375 SOIL CLEANUP OBJECTIVES	Unrestricted Use
	Residential Use
	Restricted Residential Use
	Commercial Use
	Industrial Use

LEGEND

- BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY
- SOIL BORING/SUBSURFACE SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION

SITE PLAN SHEET KEYNOTES

1. 4" TOPSOIL & SEED IF NO PLANTINGS-SEE LANDSCAPING PLAN
2. MATCH EXISTING CURB OR RUN OUT IN 2'-0" (6' @ CURB RAMP)
3. 4" WIDE PAINTED YELLOW PAVEMENT STRIPES

SITE PLAN DETAIL LEGEND

1. ASPHALT PAVEMENT SECTION - SEE DETAIL E1/C-501
2. CONCRETE CURB - SEE DETAIL D1/C-501
3. CONCRETE SIDEWALK - SEE DETAIL C1/C-501
4. EXTERIOR CONCRETE SLAB-ON-GRADE - SEE DETAIL B1/C-501
5. ACCESSIBLE CURB RAMP - SEE DETAIL A1/C-501
6. ACCESSIBLE SIGNS & MARKINGS - C2/C-501
7. SIGN POST - SEE DETAIL D2/C-501
8. LIGHT POLE FOUNDATION - SEE DETAIL C3/C-501
9. DUMPSTER ENCLOSURE - SEE DETAIL XX/XXXX
10. RETAINING WALL DETAIL - SEE DETAIL XX/XXXX
11. FLAGPOLE DETAIL - SEE DETAIL A3/C-501

SITE PLAN NOTES

1. SURVEY INFORMATION WAS PROVIDED BY GPI ENGINEERING, LANDSCAPE, ARCHITECTURE & SURVEYING, LLP DATED 12/10/2021. C&S ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.
2. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND UTILITY LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTACT THE ENGINEER WITH ANY DISCREPANCIES FOUND IN THE FIELD.
3. ALL DIMENSIONS FROM PROPERTY LINES ARE 90° FROM PROPERTY LINE UNLESS OTHERWISE NOTED.
4. ALL DIMENSIONS ARE FROM FACE OF CURB UNLESS OTHERWISE NOTED.
5. COORDINATE EXACT LOCATION OF SIDEWALKS AT DOORWAYS WITH ARCHITECTURAL PLANS.
6. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND LAYOUT.

SITE PLAN PROPOSED LEGEND

- PROPERTY LINE
- PROPOSED SIGN
- PROPOSED CONCRETE PAVEMENT/SIDEWALK
- PROPOSED CURB
- NUMBER OF PARKING SPACES
- DOOR LOCATION
- E.P. EDGE OF PAVEMENT
- LIGHTING FIXTURES
- SAW CUT LINE
- DETECTABLE WARNING SURFACE

0 30 60 120 FEET

SCALE: 1" = 30'

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THE SALVATION ARMY

HOPE ON MAIN
954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM

CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	X97.001.001
DATE:	OCTOBER 2022
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

2021 SITE CHARACTERIZATION

FIGURE 3

October 31, 2022 - 2:02PM
F:\Projects\X97 - The Salvation Army\X97001001 - Buffalo Salvation Army BCP\Planning-Study\CAD\Sheets\REC.dwg

LEGEND

BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY

APPROXIMATE EXTENTS OF HISTORIC BUILDINGS

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

SURFACE SAMPLE LOCATION

TEST PIT (SUBSURFACE) SAMPLE LOCATION

SOIL BORING (SUBSURFACE) SAMPLE LOCATION

SHEET KEYNOTES

1. SURFACE SOIL SAMPLES WILL BE COLLECTED FROM THE TOP TWO INCHES BELOW THE VEGETATIVE LAYER.
2. TEST PITS WILL BE EXCAVATED WITH A CONVENTIONAL TRACK-MOUNTED EXCAVATOR. TEST PITS WILL BE EXCAVATED TO A MAXIMUM DEPTH OF TEN FEET BGS AND EXTEND TO TEN FEET IN LENGTH OR TO NATIVE MATERIAL. FROM EACH TEST PIT, FIVE NEAR SURFACE SOIL SAMPLES WILL BE COLLECTED FROM ONE TO TWO FEET BGS.
3. EACH SOIL BORING SHOULD BE ADVANCED INTO THE FILL MATERIAL, UP TO 15 FEET (FT) BELOW THE GROUND SURFACE (BGS), OR AT THE DISCRETION OF THE ENVIRONMENTAL ENGINEER/SCIENTIST.
   - FILL SAMPLES WILL BE COLLECTED FROM THE BORINGS BASED ON EVIDENCE OF IMPAIRMENT AND TO PROVIDE CHARACTERIZATION ACROSS THE SITE. IN 11 LOCATIONS, ONE URBAN FILL SAMPLE WILL BE COLLECTED
   - UP TO 22 SAMPLES WILL BE COLLECTED FROM THE URBAN FILL FOR WASTE DISPOSAL CHARACTERISTICS.
   - NATIVE SOIL WILL BE VISUALLY ASSESSED AND SAMPLED IN EACH OF THE 55 GRID LOCATIONS. IN ORDER TO ASSESS THE IMPACT OF FILL ON THE UNDERLYING NATIVE SOIL, A SOIL SAMPLE WILL BE COLLECTED FROM THE TOP TWO FEET OF NATIVE MATERIAL IN EACH GRID LOCATION. IN ADDITION TO COLLECTING SAMPLES AT THE TOP OF THE NATIVE MATERIAL, TWO ADDITIONAL SAMPLES WILL BE COLLECTED AT ONE-FOOT INTERVALS BELOW THE FIRST NATIVE SOIL SAMPLE.
   - UP TO FIVE SAMPLES, ONE SAMPLE PER LOCATION, WILL BE COLLECTED FROM DEEPER NATIVE SOILS BELOW THE LAST CONFIRMATORY INTERVAL, OUTLINED ABOVE, TO A MAXIMUM DEPTH OF 15 FEET BELOW GROUND SURFACE.

NOTES

1. SURVEY INFORMATION WAS PROVIDED BY GPI ENGINEERING, LANDSCAPE, ARCHITECTURE & SURVEYING, LLP DATED 12/10/2021. C&S ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

2. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND UTILITY LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTACT THE ENGINEER WITH ANY DISCREPANCIES FOUND IN THE FIELD.

3. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND LAYOUT.

SURVEY LEGEND

CATCH BASIN	PARKING METER
C.O. CLEAN OUT	SANITARY MANHOLE
COMMUNICATIONS MANHOLE	SANITARY VENT
ELECTRIC MANHOLE	SIGN, ONE POST
FLOOD LIGHT	SIGN, TWO POST
GVS GAS SERVICE VALVE	TRAFFIC MANHOLE
GV GAS VALVE	UTILITY POLE
GUY WIRE	WSV WATER SERVICE VALVE
HYDRANT	WV WATER VALVE
LIGHT POLE, STANDARD	

0 30 60 120 FEET

SCALE: 1" = 30'

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BROWNFIELD CLEANUP PROGRAM

CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	X97.001.001
DATE:	JUNE 2023
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

PROPOSED SOIL SAMPLE LOCATIONS

FIGURE 4A

June 13, 2023 – 12:56PM
F:\Project\X97 – The Salvation Army\X97001001 – Buffalo Salvation Army BCP\Planning-Study\CADD\Sheets\SAMPLE PLAN.dwg

LEGEND

- BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY
- APPROXIMATE EXTENTS OF HISTORIC BUILDINGS

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- SURFACE SAMPLE LOCATION
- TEST PIT (SUBSURFACE) SAMPLE LOCATION
- SOIL BORING (SUBSURFACE) SAMPLE LOCATION

SHEET KEYNOTES

1. SURFACE SOIL SAMPLES WILL BE COLLECTED FROM THE TOP TWO INCHES BELOW THE VEGETATIVE LAYER.

2. TEST PITS WILL BE EXCAVATED WITH A CONVENTIONAL TRACK-MOUNTED EXCAVATOR. TEST PITS WILL BE EXCAVATED TO TEN FEET BGS OR NATIVE SOIL AND EXTEND TO A MAXIMUM OF TEN FEET IN LENGTH. FROM EACH TEST PIT, FIVE NEAR SURFACE SOIL SAMPLES WILL BE COLLECTED FROM ONE TO TWO FEET BGS.

3. EACH SOIL BORING SHOULD BE ADVANCED INTO THE FILL MATERIAL, UP TO 15 FEET (FT) BELOW THE GROUND SURFACE (BGS), OR AT THE DISCRETION OF THE ENVIRONMENTAL ENGINEER/SCIENTIST.

   - FILL SAMPLES WILL BE COLLECTED FROM THE BORINGS BASED ON EVIDENCE OF IMPAIRMENT AND TO PROVIDE CHARACTERIZATION ACROSS THE SITE. IN 11 LOCATIONS, ONE URBAN FILL SAMPLE WILL BE COLLECTED
   - UP TO 22 SAMPLES WILL BE COLLECTED FROM THE URBAN FILL FOR WASTE DISPOSAL CHARACTERISTICS.
   - NATIVE SOIL WILL BE VISUALLY ASSESSED AND SAMPLED IN EACH OF THE 55 GRID LOCATIONS. IN ORDER TO ASSESS THE IMPACT OF FILL ON THE UNDERLYING NATIVE SOIL, A SOIL SAMPLE WILL BE COLLECTED FROM THE TOP TWO FEET OF NATIVE MATERIAL IN EACH GRID LOCATION. IN ADDITION TO COLLECTING SAMPLES AT THE TOP OF THE NATIVE MATERIAL, TWO ADDITIONAL SAMPLES WILL BE COLLECTED AT ONE-FOOT INTERVALS BELOW THE FIRST NATIVE SOIL SAMPLE.
   - UP TO FIVE SAMPLES, ONE SAMPLE PER LOCATION, WILL BE COLLECTED FROM DEEPER NATIVE SOILS BELOW THE LAST CONFIRMATORY INTERVAL, OUTLINED ABOVE, TO A MAXIMUM DEPTH OF 15 FEET BELOW GROUND SURFACE.

NOTES

1. SURVEY INFORMATION WAS PROVIDED BY GPI ENGINEERING, LANDSCAPE, ARCHITECTURE & SURVEYING, LLP DATED 12/10/2021. C&S ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

2. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND UTILITY LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTACT THE ENGINEER WITH ANY DISCREPANCIES FOUND IN THE FIELD.

3. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND LAYOUT.

0 30 60 120 FEET

SCALE: 1" = 30'

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Fax: 716-847-1454
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THE SALVATION ARMY

HOPE ON MAIN
954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM

CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		

PROJECT NO:	X97.001.001
DATE:	JUNE 2023
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

PROPOSED SOIL SAMPLE LOCATIONS

FIGURE 4B

December 5, 2022 – 2:19PM
F:\Projects\X97 – The Salvation Army\X97001001 – Buffalo Salvation Army BCP\Planning–Study\CADD\Sheets\SAMPLE PLAN–NO TOPO.dwg

LEGEND

- BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY
- APPROXIMATE EXTENTS OF HISTORIC BUILDINGS

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- GROUNDWATER SAMPLE LOCATION

SHEET KEYNOTES

1. FIVE NEW MONITORING WELLS WILL BE INSTALLED. THE PROPOSED NEW WELLS ARE LOCATED THROUGHOUT THE SITE. NEW OVERBURDEN WELLS WILL BE CONSTRUCTED TO INTERSECT THE TOP OF THE WATER TABLE. EACH WELL WILL BE COMPLETED WITH 5 TO 10 FEET OF 2-INCH SCHEDULE 40 0.010-SLOT WELL SCREEN CONNECTED TO AN APPROPRIATE LENGTH OF SCHEDULE 40 PVC WELL RISER TO COMPLETE THE WELL. THE ANNULUS WILL BE SAND PACKED WITH QUARTZ SAND TO APPROXIMATELY ONE TO TWO FEET ABOVE THE SCREENED SECTION, AND ONE TO TWO FEET OF BENTONITE CHIPS OR PELLETS ABOVE THE SAND. THE REMAINING ANNULUS WILL BE GROUTED TO GROUND SURFACE.

NOTES

1. SURVEY INFORMATION WAS PROVIDED BY GPI ENGINEERING, LANDSCAPE, ARCHITECTURE & SURVEYING, LLP DATED 12/10/2021. C&S ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

2. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND UTILITY LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTACT THE ENGINEER WITH ANY DISCREPANCIES FOUND IN THE FIELD.

3. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND LAYOUT.

SURVEY LEGEND

- CATCH BASIN
- C.O. CLEAN OUT
- COMMUNICATIONS MANHOLE
- ELECTRIC MANHOLE
- FLOOD LIGHT
- GVS GAS SERVICE VALVE
- GV GAS VALVE
- GUY WIRE
- HYDRANT
- LIGHT POLE, STANDARD
- PARKING METER
- SANITARY MANHOLE
- SANITARY VENT
- SIGN, ONE POST
- SIGN, TWO POST
- TRAFFIC MANHOLE
- UTILITY POLE
- WSV WATER SERVICE VALVE
- WV WATER VALVE

0 30 60 120 FEET

SCALE: 1" = 30'

C&S COMPANIES
C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
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PROPOSED GROUNDWATER MONITORING LOCATIONS

FIGURE 5

October 31, 2022 - 11:54AM
F:\Project\X97 The Salvation Army\X97001001 - Buffalo Salvation Army BCP\Planning~Study\CADD\Sheets\SAMPLE PLAN GW.dwg

SHEET KEYNOTES

1. C&S WILL COLLECT TWO SUB-SLAB AIR SAMPLES PER THE FOLLOWING:
   - A HAMMER DRILL WILL BE USED TO CREATE A ½ INCH HOLE THROUGH THE CONCRETE FLOOR. POLYETHYLENE TUBING WILL BE INSERTED ONE TO TWO INCHES INTO EACH HOLE AND THE FLOOR PENETRATION AROUND THE TUBING WILL BE SEALED AT EACH LOCATION USING SOFT, PLIABLE, VOC-FREE CLAY.
   - AN ENCLOSURE WILL BE CONSTRUCTED AROUND THE SUB-SLAB SAMPLING POINT (E.G., PLASTIC BAG, PLASTIC BUCKET, ETC.) AND SEALED TO THE SAMPLE POINT TUBING IN ORDER TO PERFORM A TRACER GAS EVALUATION. THE ENCLOSURE WILL BE ENRICHED WITH HELIUM AS A TRACER GAS.
   - THE SUB-SLAB SAMPLING POINT WILL BE PURGED 1 TO 3 TUBING VOLUMES AT A RATE NOT TO EXCEED 0.2 L/M TO ENSURE THAT A REPRESENTATIVE SAMPLE OF SOIL VAPOR WILL BE OBTAINED. DURING PURGING, THE PURGED SOIL GAS WILL BE TESTED FOR THE TRACER GAS BY AN APPROPRIATE METER (I.E., A METER CAPABLE OF MEASURING THE CONCENTRATION OF THE TRACER GAS IN AT LEAST PERCENTAGE INCREMENTS). IN THE EVENT THAT THE TRACER GAS IS DETECTED AT A CONCENTRATION OF 10% OR GREATER, THE SAMPLE POINT WILL BE RESEALED AND RETESTED PRIOR TO SAMPLING.
   - SUBSEQUENT TO PURGING AND TRACER GAS TESTING, A CERTIFIED CLEAN SUMMA CANISTER EQUIPPED WITH A LABORATORY CALIBRATED REGULATOR WILL BE CONNECTED TO THE TUBING TO COLLECT THE SAMPLE OVER A 24-HOUR PERIOD.
   - AT THE END OF SAMPLING, AT LEAST ONE INCH OF VACUUM WILL BE LEFT IN THE SUMMA CANISTER TO MEET DATA QUALITY OBJECTIVES.
   - AFTER REMOVING THE TUBING FROM HOLES IN THE FLOOR, THE FLOOR WILL BE REPAIRED WITH A QUICK DRYING CEMENT MIXTURE.

C&S WILL COLLECT AIR SAMPLES TO EVALUATE INDOOR AIR QUALITY. THE INDOOR AIR SAMPLES WILL BE CO-LOCATED WITH THE SUB-SLAB VAPOR SAMPLES. THE SAMPLING DEVICES WILL BE PLACED APPROXIMATELY THREE TO FIVE FEET OFF THE GROUND FOR SAMPLE COLLECTION PURPOSES AND SAMPLES WILL BE COLLECTED USING A SUMMA CANISTER EQUIPPED WITH A LABORATORY CALIBRATED REGULATOR OVER A 24-HOUR PERIOD.

C&S WILL COLLECT ONE OUTDOOR AIR SAMPLE TO CHARACTERIZE BACKGROUND AIR QUALITY IN THE VICINITY OF THE BUILDING AS A MEANS TO EVALUATE THE SUB-SLAB AND INDOOR AIR RESULTS. THE SAMPLING DEVICE WILL BE LOCATED DOWNWIND OF THE STRUCTURE AND WILL BE PLACED APPROXIMATELY THREE TO FIVE FEET OFF THE GROUND FOR SAMPLE COLLECTION PURPOSES. THE OUTDOOR AIR SAMPLE WILL BE COLLECTED USING A SUMMA CANISTER EQUIPPED WITH A LABORATORY CALIBRATED REGULATOR OVER A 24-HOUR PERIOD.

LEGEND

- BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY
- APPROXIMATE EXTENTS OF HISTORIC BUILDINGS

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- SUB-SLAB AND INDOOR AIR SAMPLE LOCATION

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3. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND LAYOUT.

SURVEY LEGEND

- CATCH BASIN
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- COMMUNICATIONS MANHOLE
- ELECTRIC MANHOLE
- FLOOD LIGHT
- GVS GAS SERVICE VALVE
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0 30 60 120 FEET
SCALE: 1" = 30'

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954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM
CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
		REVISIONS
PROJECT NO:		X97.001.001
DATE:		OCTOBER 2022
DRAWN BY:		C. MARTIN
DESIGNED BY:		C. MARTIN
CHECKED BY:		D. RIKER

PROPOSED SOIL VAPOR INTRUSION LOVATIONS

FIGURE 6

October 31, 2022 – 12:48PM
F:\Projects\X97 - The Salvation Army\X97001001 – Buffalo Salvation Army BCP\Planning–Study\CADD\Sheets\SAMPLE PLAN SVI.dwg

LEGEND

BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- SURFACE SAMPLE LOCATION
- TEST PIT (SUBSURFACE) SAMPLE LOCATION
- SOIL BORING (SUBSURFACE) SAMPLE LOCATION
- GROUNDWATER SAMPLE LOCATION
- SUB-SLAB AND INDOOR AIR SAMPLE LOCATION

SURVEY LEGEND

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0 30 60 120 FEET

SCALE: 1" = 30'

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THE SALVATION ARMY

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954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM

CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
		REVISIONS
PROJECT NO:		X97.001.001
DATE:		JUNE 2023
DRAWN BY:		C. MARTIN
DESIGNED BY:		C. MARTIN
CHECKED BY:		D. RIKER

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

FIGURE 7

June 13, 2023 - 2:56PM
P:\Project\X97 - The Salvation Army\X97001001 - Buffalo Salvation Army BCP\Planning-Study\CADD\Sheets\SAMPLE PLAN ALL.dwg

TABLES

Table 1
Proposed Remedial Investigation Sampling Program

Matrix	Sample Type	Lab Analysis	No. Samples	Field Duplicates	Matrix Spike	Matrix Spike Duplicate	Trip Blank	Total
Soil	Surface	TCL VOC	4	0	0	0	--	4
		TCL SVOC	4	0	0	0	--	4
		TCL Pesticides	4	0	0	0	--	4
		Total PCB	4	0	0	0	--	4
		TAL Metals	4	0	0	0	--	4
		Cyanide	4	0	0	0	--	4
		Hexavalent Chromium	4	0	0	0	--	4
		Silvex	4	0	0	0	--	4
		PFAS	4	0	0	0	--	4
		1,4-Dioxane	4	0	0	0	--	4
	Fill Material	TCL VOC	11	1	1	1	--	14
		TCL SVOC	11	1	1	1	--	14
		TCL Pesticides	11	1	1	1	--	14
		Total PCB	11	1	1	1	--	14
		TAL Metals	11	1	1	1	--	14
		Cyanide	11	1	1	1	--	14
		Hexavalent Chromium	11	1	1	1	--	14
		Silvex	11	1	1	1	--	14
		PFAS	11	1	1	1	--	14
		1,4-Dioxane	11	1	1	1	--	14
	Test Pits	TCL VOC	5	0	0	0	--	5
		TCL SVOC	5	0	0	0	--	5
		TCL Pesticides	5	0	0	0	--	5
		Total PCB	5	0	0	0	--	5
		TAL Metals	5	0	0	0	--	5
		Cyanide	5	0	0	0	--	5
		Hexavalent Chromium	5	0	0	0	--	5
		Silvex	5	0	0	0	--	5
		PFAS	5	0	0	0	--	5
		1,4-Dioxane	5	0	0	0	--	5
	Native Soil	TCL VOC	55	3	3	3	--	64
		TCL SVOC	55	3	3	3	--	64
		TCL Pesticides	11	1	1	1	--	14
		Total PCB	11	1	1	1	--	14
		TAL Metals	55	3	3	3	--	64
		Cyanide	55	3	3	3	--	64
		Hexavalent Chromium	11	1	1	1	--	14
		Silvex	11	1	1	1	--	14
		PFAS	55	3	3	3	--	64
		1,4-Dioxane	55	3	3	3	--	64
	Deep Native Soil	TCL VOC	5	0	0	0	--	5
		TCL SVOC	5	0	0	0	--	5
		TCL Pesticides	5	0	0	0	--	5
		Total PCB	5	0	0	0	--	5
		TAL Metals	5	0	0	0	--	5
		Cyanide	5	0	0	0	--	5
		Hexavalent Chromium	5	0	0	0	--	5
		Silvex	5	0	0	0	--	5
		PFAS	5	0	0	0	--	5
		1,4-Dioxane	5	0	0	0	--	5
	Monitoring Wells	TCL VOC	5	0	0	0	--	5
		TCL SVOC	5	0	0	0	--	5
		TCL Pesticides	5	0	0	0	--	5
		Total PCB	5	0	0	0	--	5
		TAL Metals	5	0	0	0	--	5
		Cyanide	5	0	0	0	--	5
		Hexavalent Chromium	5	0	0	0	--	5
		Silvex	5	0	0	0	--	5
		PFAS	5	0	0	0	--	5
		1,4-Dioxane	5	0	0	0	--	5
	Waste Characterization	TCLP VOC	22	--	--	--	--	22
		TCLP SVOC	22	--	--	--	--	22
		PCB	22	--	--	--	--	22
		TCLP Metal	22	--	--	--	--	22
		Reactivity	22	--	--	--	--	22
		Corrosivity	22	--	--	--	--	22
		Ignitability	22	--	--	--	--	22
		pH	22	--	--	--	--	22
		Percent Solids	22	--	--	--	--	22
Water	Groundwater	TCL VOC	10	2	2	2	2	18
		TCL SVOC	10	2	2	2	0	16
		TCL Pesticides	10	2	2	2	0	16
		Total PCB	10	2	2	2	0	16
		TAL Metals	10	2	2	2	0	16
		Cyanide	10	2	2	2	0	16
		Hexavalent Chromium	5	1	1	1	0	8
		Silvex	5	1	1	1	0	8
		1,4 Dioxane	5	1	1	1	0	8
		PFOA/PFOS	5	1	1	1	0	8
Air	Soil Vapor	TO-15	5	0	0	0	--	5

APPENDICES

APPENDIX A

PREVIOUSLY COMPLETED ENVIRONMENTAL INVESTIGATIONS

APPENDIX B

CITIZEN PARTICIPATION PLAN

NEW YORK STATE OF OPPORTUNITY. Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan
for
Hope On Main

June 2023

954 and 1000 Main Street
City of Buffalo
Erie County, New York

Contents

* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **SAB Hope, LLC ("Applicant")**
Site Name: **Hope On Main Site ("Site")**
Site Address: **954 and 1000 Main Street**
Site County: **Erie**
Site Number: **C915393**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: http://www.dec.ny.gov/chemical/8450.html .

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment

- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process

- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process

- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community

- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.
The site contact list includes, at a minimum:

- chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See http://www.dec.ny.gov/chemical/61092.html .

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the

investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at http://www.dec.ny.gov/regulations/2590.html

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation **Note:** Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. **Note:** The two fact sheets are combined when possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

The Site consists of four multiple story buildings owned and operated by the Salvation Army and one single story building owned by the Salvation Army and operated by a day care. The Subject Property fronts Main Street to the east and North Pearl Street to the west.

Based upon investigations conducted to date, the primary contaminants of concern in the surface and subsurface soil include SVOCs/PAHs and metals. These contaminants are found in surface soils and the fill material to depths of four feet. SVOCs and metals with the highest exceedances in surface soil were detected in the sample taken adjacent to the Salvation Army building. SVOC and metals in subsurface soil were widespread, with the highest exceedances in the one to two-foot depths.

The highest SVOC exceedances marginally exceed Residential Use, Restricted Residential Use, Commercial Use, and Industrial Use SCOs. Metals are also widespread throughout the Site. Lead, mercury and zinc were found to exceed Unrestricted Use SCOs. One location in the parking lot behind the office and day care building contained manganese above Industrial Use SCOs.

The fill material appears to be a mixture of soil types (sand, silt and or clay), ash, coal, gravel and construction demolition debris. The native soil is a silt and clay.

At this time, groundwater at this Site have not been characterized.

The presence of the contamination is limiting the future use and re-investment opportunities on the Site.

Stakeholders in the remediation of the Site include the City of Buffalo, local residents and users of adjacent buildings.

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

The Site is located between the City's Allentown Neighborhood, a residential and commercial neighborhood, and the Buffalo Niagara Medical Campus. The Site is

approximately 2.88-acres and is owned by The Salvation Army. North Street is located to the north, Main Street to the east, North Pearl Street to the west, and Allen Street to the south. Land uses immediately adjacent to the BCP Site include commercial, residential uses, and health care (Buffalo Medical Campus).

History of Site Use, Investigation, and Cleanup

According to historical records, the Site was initially occupied by residential homes. The property at 978 Main Street contained a gas station from the 1930s to the 1960s. The property at 988 Main Street contained an auto repair shop from 1946 to the 1950s. After 1960, the gas station at 978 Main Street was demolished for a hotel that operated from 1964 to 1998. The auto repair shop was demolished after 1951. The office and day care building at 1000 Main Street was constructed in 2001.

Surrounding historical property uses consisted of commercial use and residential development mainly along Pearl and Main Streets. This development included gas stations, automobile repair stations, storefronts, restaurants, apartments and warehousing.

Contamination at the Site appears to be from the placement of historic fill material throughout the years as property uses changed along Main Street and buildings were built and/or demolished.

Based on a review of NYSDEC data, the Site is not underlain by any mapped principal or primary aquifers. Groundwater at and in the vicinity of the Site is not used for public drinking water supply.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a Volunteer. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for unrestricted purposes.

To achieve this goal, the Applicant will conduct choose investigation and cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

Investigation

The Applicant will conduct an investigation of the site officially called a "remedial investigation" (RI). This investigation will be performed with NYSDEC oversight. The Applicant must develop a remedial investigation workplan, which is subject to public comment.

The site investigation has several goals:

1) define the nature and extent of contamination in soil, surface water, groundwater and any other parts of the environment that may be affected;
2) identify the source(s) of the contamination;
3) assess the impact of the contamination on public health and the environment; and
4) provide information to support the development of a proposed remedy to address the contamination or the determination that cleanup is not necessary.

The Applicant submits a draft "Remedial Investigation Work Plan" to NYSDEC for review and approval. NYSDEC makes the draft plan available to the public review during a 30-day public comment period.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

Remedy Selection

When the investigation of the site has been determined to be complete, the project likely would proceed in one of two directions:

1. The Applicant may recommend in its investigation report that no action is necessary at the site. In this case, NYSDEC would make the investigation report available for public comment for 45 days. NYSDEC then would complete its review, make any necessary revisions, and, if appropriate, approve the investigation report. NYSDEC would then issue a "Certificate of Completion" (described below) to the Applicant.

or

2. The Applicant may recommend in its investigation report that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a “Remedial Work Plan”. The Remedial Work Plan describes the Applicant’s proposed remedy for addressing contamination related to the site.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period.

Cleanup Action

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved, and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for

the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A

Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Veronica Kreutzer
Project Manager
NYSDEC Region 9
Division of Environmental Remediation
700 Delaware Avenue
Buffalo, NY 14209
716.851.7220

New York State Department of Health (NYSDOH):
Charlotte Bethoney
Project Manager
NYSDOH
Corning Tower
Empire State Plaza,
Albany, NY 12237
518.402.7880

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents
:

Isaias Gonzalez-Soto Branch Library
280 Porter Avenue
Buffalo, NY 14201
Attn: Carol Batt
Phone: 716.858.7180
Hours:

Sunday	12:00 PM - 05:00 PM
Monday	08:00 AM - 07:00 PM
Tuesday	08:00 AM - 07:00 PM
Wednesday	08:00 AM - 07:00 PM
Thursday	08:00 AM - 07:00 PM
Friday	09:00 AM - 05:00 PM
Saturday	09:00 AM - 05:00 PM

NYSDEC Region 9
700 Delaware Avenue
Buffalo, NY 14209
716.851.7220
Attn: Veronica KreutzerPhone: 716.851.7220
Hours: (call for appointment)

Appendix B

Site Contact List

Local Government – City of Buffalo
Byron W. Brown
City of Buffalo Mayor
201 City Hall, 65 Niagara Square
Buffalo, NY 14202

James Morrell
City of Buffalo Planning Board Chair
901 City Hall, 65 Niagara Square
Buffalo, NY 14202

Mark Poloncarz
Erie County Executive
95 Franklin Street
Buffalo, NY 14202

Thomas R. Hersey, Jr.
Erie County Commissioner of Environment and Planning
95 Franklin Street, 10th Floor
Buffalo, NY 14202

Residents, Owners and Occupants of Property and Property Adjacent to Site:

James Pellnat
180 North Pearl Street
Buffalo, NY 14202

3959 Main Street Inc.
3975 Main Street
Buffalo, NY 14226

Samuel Strassman
176 North Pearl Street
Buffalo, NY 14202

Daryl Nazareth
174 North Pearl Street
Buffalo, NY 14202

Patricia Justen
2176 East River Road
Grand Island NY 14072

Santa Maria Towers
c / o Delta Development of Western New York Inc.
525 Washington Street
Buffalo NY 14203

JDLA LLC
625 Delaware Avenue
Buffalo NY 14202

Pearl Equity Growth LLC
154 North Pearl Street
Buffalo NY 14202

David and Kristin Gilmet
150 North Pearl Street
Buffalo NY 14202

Erich Hager
146 North Pearl Street
Buffalo NY 14202

Kimberly Trent
142 North Pearl Street
Buffalo NY 14202

134 North Pearl LLC
32 Allen Street
Buffalo NY 14203

Local Media:

Local Newspaper:

Buffalo News
1 News Plaza
Buffalo NY 14240
(716) 849-3434
http://www.buffalonews.com/classifieds/

Local Television:

WGRZ – TV Channel 2
259 Delaware Avenue
Buffalo, NY 14202
(716) 849-2200
http://www.wgrz.com/news/default.aspx

WIVB – TV Channel 4
2077 Elmwood Avenue
Buffalo, NY 14207
(716) 874-4410

http://www.wivb.com/subindex/news

WKBW – TV Channel 7
7 Broadcast Plaza
Buffalo, NY 14202
(716) 840-7777
http://www.wkbw.com/

Radio:

WBEN 930 AM Radio
500 Corporate Parkway
Amherst, NY 14226
(716) 843-0600
http://www.wben.com

WBFO 88.7 FM Radio
3435 Main Street
Buffalo, NY 14214
(716) 829-6000
http://www.wbfo.org/

Local Water Supplier:

City of Buffalo Water Board/Division of Water
281 Exchange Street
Buffalo, NY 14204

Persons Requesting to be Placed on Contact List:

To Be Completed as Necessary

School and Day Care Facilities:

There are twelve schools or day care facilities located on or in the vicinity (1 mile) of the proposed BCP Site.

Health Sciences Charter School
1140 Ellicott Street
Buffalo, NY 14209
Administrator: Jaime Venning

PS 99 Stanley Makowski Early Childhood Center
1095 Jefferson Avenue
Buffalo NY 14208
Administrator: Dawn DiNatale

PS 195 City Honors
186 East North Street
Buffalo NY 14204
Administrator: William A. Kresse

PS 48@MLK
487 High Street
Buffalo NY 14211
Administrator: Miguel Medina

PS 37 Futures Academy
295 Carlton Street
Buffalo NY 14204
Administrator: Serena Restivo

Buffalo Academy of Science Charter School
190 Franklin Street
Buffalo NY 14202
Administrator: Unknown

Hutchinson Central Technical High School
256 South Elmwood Avenue
Buffalo, NY 14201
Administrator: Dr. Gabrielle Morquecho

PS 76 Herman Badillo Bilingual Academy
315 Carolina Street
Buffalo NY 14201
Administrator: Miguel A. Medina

Elmwood Village Charter School
40 Days Park
Buffalo NY 14201
Administrator: Danielle Bruno

PS 198 International Preparatory School
110 14th Street
Buffalo, NY 14213
Administrator: Ella Dunne

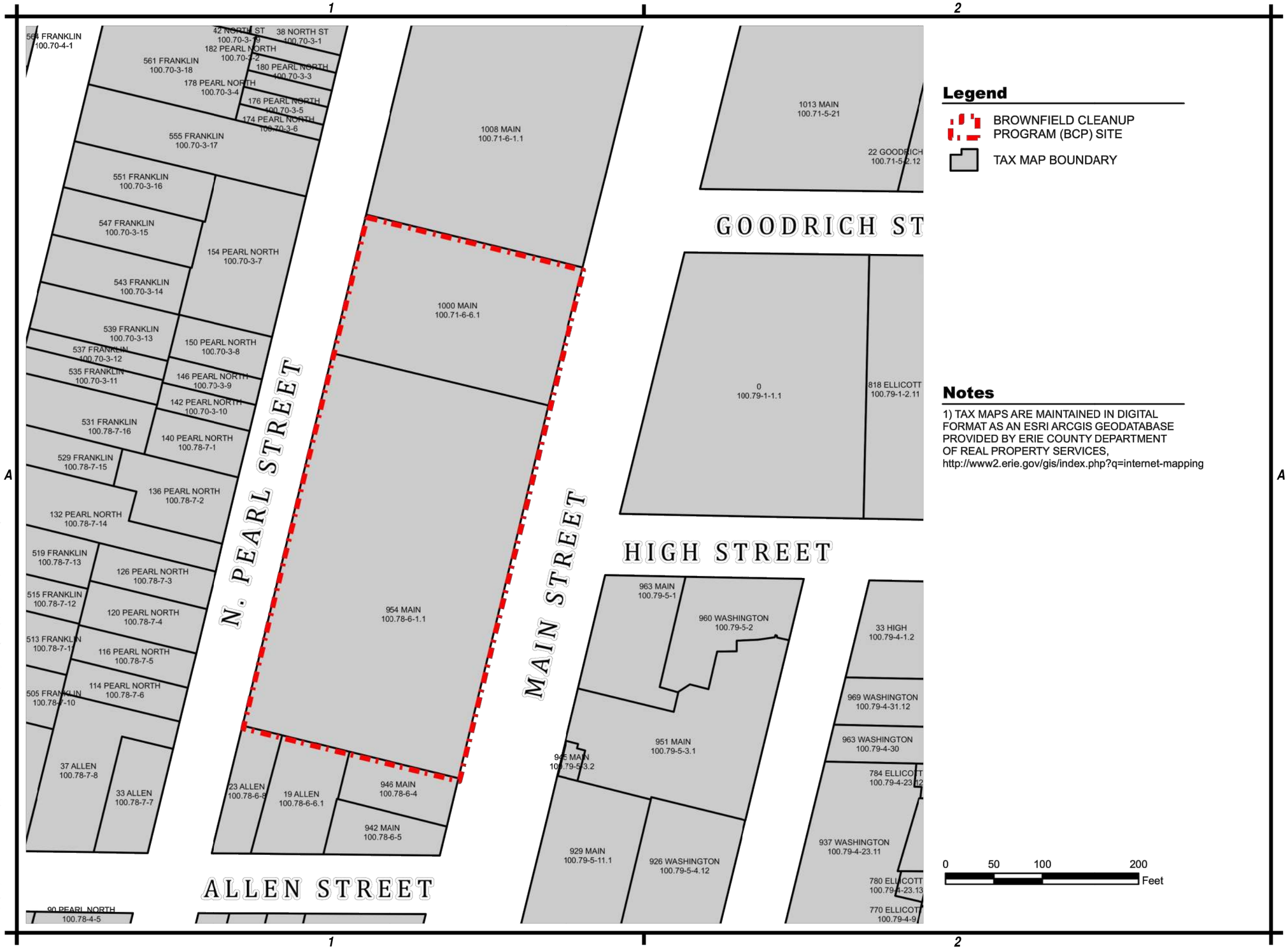
Toot-Toot Day Care

43 Northampton Street
Buffalo, NY 14209
Administrator: Unknown
Rainbow K
388 Franklin Street
Buffalo NY 14202
Administrator: Unknown

Westminster Early Childhood Program
724 Delaware Avenue
Buffalo NY 14209
Administrator: Unknown

Appendix C

Site Location Map



Legend

- BROWNFIELD CLEANUP PROGRAM (BCP) SITE
- TAX MAP BOUNDARY

Notes

1) TAX MAPS ARE MAINTAINED IN DIGITAL FORMAT AS AN ESRI ARCGIS GEODATABASE PROVIDED BY ERIE COUNTY DEPARTMENT OF REAL PROPERTY SERVICES, http://www2.erie.gov/gis/index.php?q=internet-mapping

C&S COMPANIES®

C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

N

HOPE ON MAIN
954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM
BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
REVISIONS		

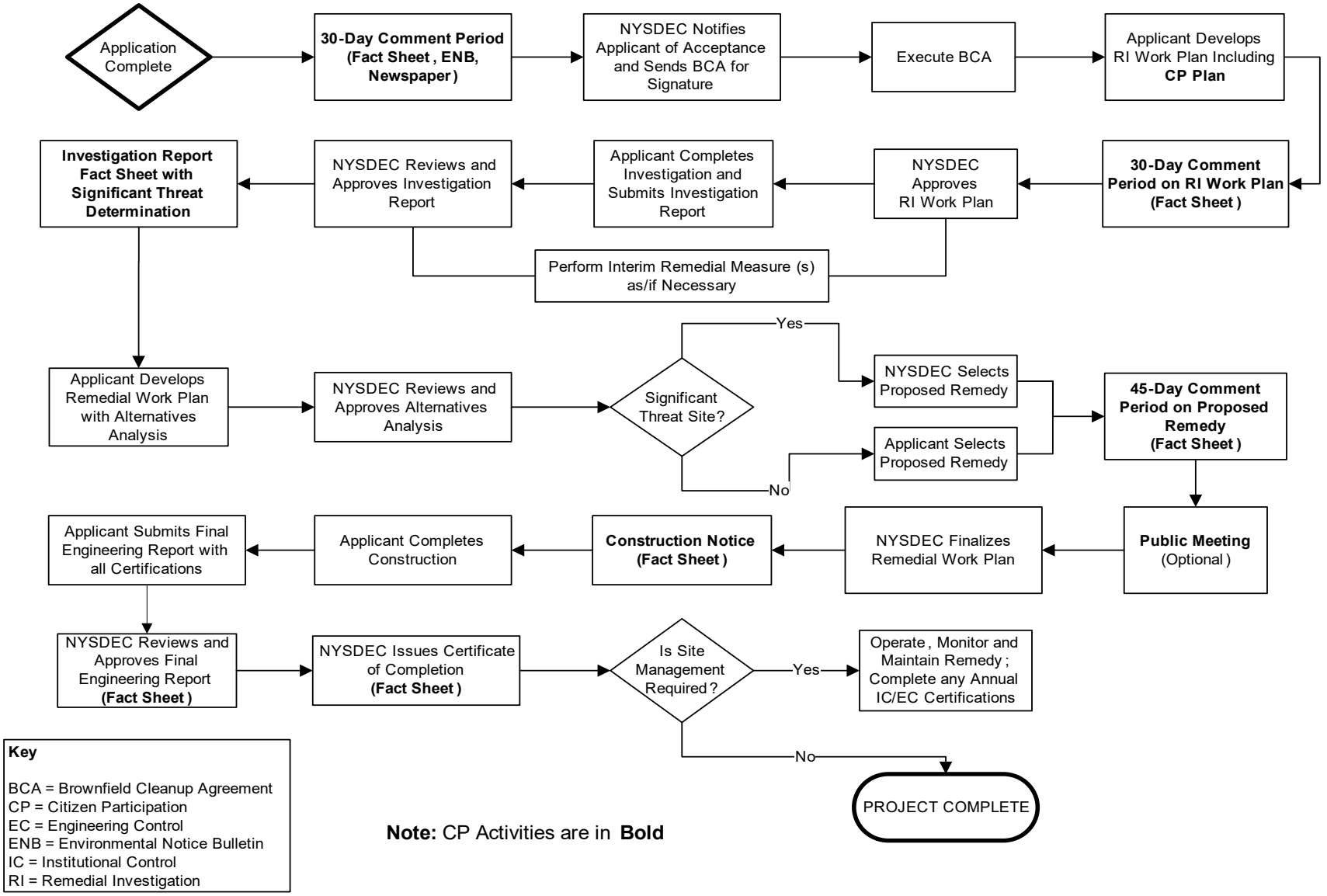
PROJECT NO:	X97.001.001
DATE:	DECEMBER 2021
DRAWN BY:	
DESIGNED BY:	
CHECKED BY:	

NO ALTERATION PERMITTED HEREON EXCEPT AS PROVIDED UNDER SECTION 7209 SUBDIVISION 2 OF THE NEW YORK EDUCATION LAW

TAX MAP BOUNDARIES

Dec 16, 2021 - 2:22pm
F:\Project\X97 - The Salvation Army\X97001001 - Buffalo Salvation Army BCP\Planning-Study\CADD\Sheets\V-2 TAX MAP.dwg

Appendix D– Brownfield Cleanup Program Process



Key

BCA = Brownfield Cleanup Agreement
CP = Citizen Participation
EC = Engineering Control
ENB = Environmental Notice Bulletin
IC = Institutional Control
RI = Remedial Investigation

Note: CP Activities are in **Bold**

APPENDIX C

COMMUNITY AIR MONITORING PLAN

Community Air Monitoring Plan

for

Hope On Main Site
954 and 1000 Main Street
Buffalo, Erie County, New York

June 2023

Community Air Monitoring Plan

Overview

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

<u>VOC Monitoring, Response Levels and Actions</u>

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate, such as isobutylene. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored continuously at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time

monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

Fugitive Dust and Particulate Monitoring

A program for suppressing fugitive dust and particulate matter monitoring at hazardous waste sites is a responsibility on the remedial party performing the work. These procedures must be incorporated into appropriate intrusive work plans. The following fugitive dust suppression and particulate monitoring program should be employed at sites during construction and other intrusive activities which warrant its use:

1. Reasonable fugitive dust suppression techniques must be employed during all site activities which may generate fugitive dust.

2. Particulate monitoring must be employed during the handling of waste or contaminated soil or when activities on site may generate fugitive dust from exposed waste or contaminated soil. Remedial activities may also include the

excavation, grading, or placement of clean fill. These control measures should not be considered necessary for these activities.

3. Particulate monitoring must be performed using real-time particulate monitors and shall monitor particulate matter less than ten microns (PM10) with the following minimum performance standards:

(a) Objects to be measured: Dust, mists or aerosols;
(b) Measurement Ranges: 0.001 to 400 mg/m3 (1 to 400,000 :ug/m3);
(c) Precision (2-sigma) at constant temperature: +/- 10 :g/m3 for one second averaging; and +/- 1.5 g/m3 for sixty second averaging;
(d) Accuracy: +/- 5% of reading +/- precision (Referred to gravimetric calibration with SAE fine test dust (mmd= 2 to 3 :m, g= 2.5, as aerosolized);
(e) Resolution: 0.1% of reading or 1g/m3, whichever is larger;
(f) Particle Size Range of Maximum Response: 0.1-10;
(g) Total Number of Data Points in Memory: 10,000;
(h) Logged Data: Each data point with average concentration, time/date and data point number;
(i) Run Summary: overall average, maximum concentrations, time/date of maximum, total number of logged points, start time/date, total elapsed time (run duration), STEL concentration and time/date occurrence, averaging (logging) period, calibration factor, and tag number;
(j) Alarm Averaging Time (user selectable): real-time (1-60 seconds) or STEL (15 minutes), alarms required;
(k) Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
(l) Operating Temperature: -10 to 50$_{o}$ C (14 to 122$_{o}$ F); and
(m) Particulate levels will be monitored upwind and immediately downwind at the working site and integrated over a period not to exceed 15 minutes.

4. In order to ensure the validity of the fugitive dust measurements performed, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to adequately supplement QA/QC Plans to include the following critical features: periodic instrument calibration, operator training, daily instrument performance (span) checks, and a record-keeping plan.

5. The action level will be established at 150 ug/m3 (15 minutes average). While conservative, this short-term interval will provide a real-time assessment of on-site air quality to assure both health and safety. If particulate levels are detected in excess of 150 ug/m3, the upwind background level must be confirmed immediately. If the working site particulate measurement is greater than 100 ug/m3 above the background level, additional dust suppression techniques must be implemented to reduce the generation of fugitive dust and corrective action taken to protect site personnel and reduce the potential for contaminant migration. Corrective measures may include increasing the level of personal protection for on-site personnel and implementing additional dust suppression techniques (see paragraph 7). Should the action level of 150 ug/m3 continue to be exceeded work must stop and DER must be notified as provided in the site design or remedial work plan. The notification shall include a description of the control measures implemented to prevent further exceedances.

6. It must be recognized that the generation of dust from waste or contaminated soil that migrates off-site, has the potential for transporting contaminants off-site. There may be situations when dust is being generated and leaving the site and the monitoring equipment does not measure PM-10 at or above the action level. Since this situation has the potential to allow for the migration of contaminants off-site, it is unacceptable. While it is not practical to quantify total suspended particulates on a real-time basis, it is appropriate to rely on visual observation. If dust is observed leaving the working site, additional dust suppression techniques must be employed.

7. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction activities:

(a) Applying water on haul roads;
(b) Wetting equipment and excavation faces;
(c) Spraying water on buckets during excavation and dumping;
(d) Hauling materials in properly tarped or watertight containers;
(e) Restricting vehicle speeds to 10 mph;
(f) Covering excavated areas and material after excavation activity ceases; and
(g) Reducing the excavation size and/or number of excavations.

Experience has shown that the chance of exceeding the 150ug/m3 action level is remote when the above-mentioned techniques are used. When techniques involving water application are used, care must be taken not to use excess water, which can result in unacceptably wet conditions. Using atomizing sprays will

prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust.

8. The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort remedial actions may need to be suspended. There may be situations that require fugitive dust suppression and particulate monitoring requirements with action levels more stringent than those provided above. Under some circumstances, the contaminant concentration and/or toxicity may require additional monitoring to protect site personnel and the public. Additional integrated sampling and chemical analysis of the dust may also be in order. This must be evaluated when a health and safety plan is developed and when appropriate suppression and monitoring requirements are established for protection of health and the environment.

Field activities will be reported daily including: date/weather, description/photos of work, Community Air Monitoring station data, and a figure indicating work location. Additionally, exceedances should be reported to the State promptly and highlighted on the daily reports.

APPENDIX D

HEALTH AND SAFETY PLAN

Health and Safety Plan for Brownfield Site Investigation And Interim Remedial Measures

Hope On Main Site
954 and 1000 Main Street
Buffalo, NY 14203

Prepared by

C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203

November 2022

DISCLAIMER

This document will address health and safety considerations for all those activities that personnel employed by C&S Engineers, Inc., may be engaged in during site investigation and remediation work. Every contractor is expected to prepare and implement their own site-specific health and safety plan. This document may be used as a general outline to inform the creation of other health and safety plans for this NYSDEC Brownfield site.

TABLE OF CONTENTS

FIGURES

ATTACHMENTS

APPENDICES

SECTION 1 – GENERAL INFORMATION

The Health and Safety Plan (HASP) described in this document will address health and safety considerations for all those activities that personnel employed by C&S Engineers, Inc., may be engaged in during site investigation and remediation work at the 301 Connecticut Street Site located in Buffalo, Erie County, New York (Site). Figure 1 shows the approximate location of the Site. This HASP will be implemented by the Health and Safety Officer (HSO) during site work.

Compliance with this HASP is required of all C&S personnel who enter this Site. The content of the HASP may change or undergo revision based upon additional information made available to the health, safety, and training (H&S) committee, monitoring results or changes in the technical scope of work. Any changes proposed must be reviewed by the H&S committee.

Responsibilities

Project Manager……..	Daniel Riker Phone: (716) 847-163 Cell: (716) 572-5312
Site Health and Safety Officer……....	Cody Martin Phone: (716) 847-163 Cell: (716) 864-3752
Emergency Coordinator……..	Cody Martin Phone: (716) 847-163 Cell: (716) 864-3752
Health and Safety Manager……	Cody Martin Phone: (716) 847-163 Cell: (716) 864-3752

Emergency Phone Numbers

Emergency Medical Service.....911

Police: Buffalo Police Department (NYPD).....911

Hospital: Buffalo General Hospital .....(716) 859-5600
Fire: Buffalo Fire Department 911
National Response Center .....(800) 424-8802
Poison Control Center .....(800) 222-1222
Center for Disease Control .....(800) 311-3435
NYSDEC Region 9 (Buffalo, New York) .....(716) 851-7220
C&S Engineers .....(716) 847-1630
Site Superintendent ..... TBD
Project Field Office Trailer .....(716) 847-1630

SECTION 2 - HEALTH AND SAFETY PERSONNEL

2.0 Health and Safety Personnel Designations

The following information briefly describes the health and safety designations and general responsibilities for this Site.

2.1 Project Manager (PM)

The PM is responsible for the overall project including the implementation of the HASP. Specifically, this includes allocating adequate manpower, equipment, and time resources to conduct Site activities safely.

2.2 Health and Safety Manager

- Has the overall responsibility for coordinating and reporting all health and safety activities and the health and safety of Site Workers.
- Must have completed, at a minimum, the OSHA 30-Hour Construction Safety Training, and either the 24-Hour training course for the Occasional Hazardous Waste Site Worker or the 40-Hour training course for the Hazardous Waste Operations Worker that meets OHSA 29 CFR 1910.

- Must have completed the 8-Hour Site supervisor/manager's course for supervisors and managers having responsibilities for hazardous waste Site operations and management.
- Directs and coordinates health and safety monitoring activities.
- Ensures that field teams utilize proper personal protective equipment (PPE).
- Conducts initial on-site specific training prior to Site Workers commencing work.
- Conducts and documents daily and periodic safety briefings.
- Ensures that field team members comply with this HASP.
- Immediately notifies the Construction Manager (CM) Project Manager and Superintendent of all accident/incidents.
- Determines upgrading or downgrading of PPE based on Site conditions and/or real time monitoring results.
- Ensures that monitoring instruments are calibrated daily or as the manufacturer's instructions determine.
- Reports to the CM Project Manager and Superintendent to provide summaries of field operations and progress.
- Submits and maintains all documentation required in this HASP and any other pertinent health and safety documentation.

2.3 Health and Safety Officer (HSO)

- Must be designated to the Health and Safety Manager by each Subcontractor as a Competent Person having, at a minimum, the OSHA 30-Hour Construction Safety Training

- Must schedule and attend a Pre-Construction Safety Meeting with the Health and Safety Manager to discuss the Subcontractor Safety Requirements and must attend the Weekly Subcontractor Coordination Meeting.

- Responsible for ensuring that their lower tier contractors comply with project safety requirements.

- Must make frequent and regular inspections of their work areas and activities and ensure hazards that are under their control are corrected immediately and all other hazards are reported to the Construction Manager's Project Manager and Health and Safety Manager.

- Must report all work related injuries, regardless of severity, to the Construction Manager's Project Manager and the Health and Safety Manager within 24 hours after they occur.

2.4 Emergency Coordinator

- The Emergency Coordinator or his on-site designee will, in coordination with 201 Ellicott, LLC., implement the emergency response procedures whenever conditions at the Site warrant such action.

- The Emergency Coordinator or his on-site designee will be responsible for assuring the evacuation, emergency treatment, emergency transport of C&S personnel as necessary, and notification of emergency response units (refer to phone listing in the beginning of this HASP) and the appropriate management staff.

2.5 Site Workers

- Report any unsafe or potentially hazardous conditions to the Health and Safety Manager.

- Maintain knowledge of the information, instructions, and emergency response actions contained in the HASP.
- Comply with rules, regulations, and procedures as set forth in this HASP, including any revisions that are instituted.
- Prevent unauthorized personnel from entering work Site.

SECTION 3 - PERTINENT SITE INFORMATION

3.1 Site Location and General History

The Site is comprised of two parcels: 954 Main Street (SBL: 100.78-6-1.1) and 1000 Main Street (SBL: 100.71-6-6.1) are approximately 2.88 acres.

Site History and Suspect Recognized Environmental Conditions

According to historical records, the Site was initially occupied by residential homes. The property at 978 Main Street contained a gas station from the 1930s to the 1960s. The property at 988 Main Street contained an auto repair shop from 1946 to the 1950s. After 1960, the gas station at 978 Main Street was demolished for a hotel that operated from 1964 to 1998. The auto repair shop was demolished after 1951. The office and day care building at 1000 Main Street was constructed in 2001.

Contamination at the Site appears to be from the placement of historic fill material throughout the years as property uses changed along Main Street and buildings were built and/or demolished.

Based upon investigations conducted to date, the primary contaminants of concern in the surface and subsurface soil include SVOCs/PAHs and metals. These contaminants are found in surface soils and the fill material to depths of four feet. SVOCs and metals with the highest exceedances in surface soil were detected in the sample taken adjacent to the Salvation Army building. SVOC and metals in subsurface soil were widespread, with the highest exceedances in the one to two-foot depths.

The highest SVOC exceedances marginally exceed Residential Use, Restricted Residential Use, Commercial Use, and Industrial Use SCOs. Metals are also widespread throughout the Site. Lead, mercury and zinc were found to exceed Unrestricted Use SCOs. One location in the parking lot behind the office and day care building contained manganese above Industrial Use SCOs.

The fill material appears to be a mixture of soil types (sand, silt and or clay), ash, coal, gravel and construction demolition debris. The native soil is a silt and clay.

Surface Soil

- SVOCs were detected at concentrations greater than laboratory detection limits in all four of the samples.
    - There were two benzo(k)fluoranthene concentrations that were greater than Unrestricted Use SCOs in SS-01 and SS-03.
    - There were three chrysene concentrations that were greater than Residential Use SCOs in SS-01 and SS-03.
    - The number of contaminant concentrations that were greater than Restricted-Residential Use SCOs included three in SS-01, two in SS-02, three in SS-03, and three in SS-04. Contaminants included benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene and indeno(1,2,3-cd)pyrene.
    - The number of contaminant concentrations that were greater than Industrial Use SCOs included one in SS-01, five in SS-02, one in SS-03, and one in SS-04. Contaminants included benzo[a]anthracene, benzo(a)pyrene, benzo(b)fluoranthene, di-n-butyl phthalate and indeno(1,2,3-cd)pyrene.
- PCBs were not detected at concentrations greater than laboratory limits in all the samples.
- Metals were detected at concentrations greater than laboratory detection limits in all the samples.
    - The number of contaminant concentrations that were greater than Unrestricted Use SCOs included one in SS-01, two in SS-02, two in SS-03, and two in SS-04. Contaminants included lead and zinc.
    - Mercury concentration exceeded the Restricted Residential Use SCO in SS-02.

Subsurface Soil

- VOCs were detected at concentrations greater than laboratory detection limits all of the six samples. However, none of the concentrations exceeded a SCO.
- SVOCs were detected at concentrations greater than laboratory detection limits in three of the six samples.

- There was benzo(k)fluoranthene concentrations that were greater than Unrestricted Use SCOs in EB-04 at 1-2 feet.
- There were three benzo(k)fluoranthene and chrysene concentrations that were greater than Residential Use SCOs in EB-02, EB-04 and EB-05.
- The number of contaminant concentrations that were greater than Restricted-Residential Use SCOs included four in EB-02, three in EB-04, and four in EB-05. Contaminants included benzo(a)anthracene, benzo(b)fluoranthene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene.
- There was benzo(a)pyrene concentrations that were greater than Industrial Use SCOs in EB-02, EB-04 and EB-05 at one to four feet.

- PCBs were not detected at concentrations greater than laboratory limits in all the samples.
- Metals were detected at concentrations greater than laboratory detection limits and greater than at least one SCO in all of the six samples.
  - The number of contaminant concentrations that were greater than Unrestricted Use SCOs included two in EB-03, three in EB-02, three in EB-04, three in EB-05, three in EB-07 and one in EB-06. Contaminants included mercury, copper, lead and zinc.
  - Cadmium was detected at concentrations greater than the Residential Use SCO in EB-04 at one to two feet bgs.
  - Manganese was detected at concentrations greater than the Industrial Use SCO in EB-04 at one to two feet bgs.

Groundwater

At this time, groundwater at this Site have not been characterized.

SECTION 5 - TRAINING

5.1 Site-specific Training

Training will be provided that specifically addresses the activities, procedures, monitoring, and equipment for the Site operations prior to going on site. Training will include familiarization with Site and facility layout, known and potential hazards, and emergency services at the Site, and details all provisions contained within this HASP. This training will

also allow Site Workers to clarify anything they do not understand and to reinforce their responsibilities regarding safety and operations for their particular activity.

5.2 Safety Briefings

C&S project personnel will be given briefings by the HSO on a daily or as needed basis to further assist Site Workers in conducting their activities safely. Pertinent information will be provided when new operations are to be conducted. Changes in work practices must be implemented due to new information made available, or if Site or environmental conditions change. Briefings will also be given to facilitate conformance with prescribed safety practices. When conformance with these practices is not occurring or if deficiencies are identified during safety audits, the project manager will be notified.

SECTION 6 - PERSONAL PROTECTIVE EQUIPMENT

6.1 General

The level of protection to be worn by field personnel will be defined and controlled by the HSO. Depending upon the type and levels of material present or anticipated at the site, varying degrees of protective equipment will be needed. If the possible hazards are unknown, a reasonable level of protection will be taken until sampling and monitoring results can ascertain potential risks. The levels of protection listed below are based on USEPA Guidelines. A list of the appropriate clothing for each level is also provided.

Level A protection must be worn when a reasonable determination has been made that the highest available level of respiratory, skin, eye, and mucous membrane protection is needed. It should be noted that while Level A provides maximum available protection, it does not protect against all possible hazards. Consideration of the heat stress that can arise from wearing Level A protection should also enter into the decision making process. Level A protection includes:

- Open circuit, pressure-demand self-contained breathing apparatus (SCBA)
- Totally encapsulated chemical resistant suit

- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level B protection must be used when the highest level of respiratory protection is needed, but hazardous material exposure to the few unprotected areas of the body (e.g., the back of the neck) is unlikely. Level B protection includes:

- Open circuit, pressure-demand SCBA or pressure airline with escape air bottle
- Chemical protective clothing: Overalls and long sleeved jacket; disposal chemical resistant coveralls; coveralls; one or two piece chemical splash suit with hood
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level C must be used when the required level of respiratory protection is known, or reasonably assumed to be, not greater than the level of protection afforded by air purifying respirators; and hazardous materials exposure to the few unprotected areas of the body (e.g.., the back of the neck) is unlikely. Level C protection includes:

- Full or half face air-purifying respirator
- Chemical protective clothing: Overalls and long-sleeve jacket; disposable chemical resistant coveralls; coveralls; one or two piece chemical splash suit
- Gloves, inner (surgical type)
- Gloves, outer, chemical protective
- Boots, chemical protective

Level D is the basic work uniform. It cannot be worn on any site where respiratory or skin hazards exist. Level D protection includes:

- Safety boots/shoes
- Safety glasses
- Hard hat with optional face shield

Note that the use of SCBA and airline equipment is contingent upon the user receiving special training in the proper use and maintenance of such equipment.

6.2 Personal Protective Equipment – Site Specific

Level D with some modification will be required when working in the work zone on this Site. In addition to the basic work uniform specified by Level D protection, Nitrile gloves will be required when contact with soil or ground water is likely. Hearing protection will be worn when power equipment is used to perform subsurface investigation work. An upgrade to a higher level (Level C) of protection may occur if determined necessary by the HSO.

SECTION 7 - MONITORING PROCEDURES

7.1 Monitoring During Site Operations

All Site environmental monitoring should be accompanied by periodic meteorological monitoring of appropriate climatic conditions.

7.1.1 Drilling Operations (Monitoring Well Installation and Subsurface Borings) and Test Pit Excavations

Monitoring will be performed by the HSO or drilling observer during the conduct of work. A photoionization detector (PID) equipped with a 10.0 eV lamp will be utilized to monitor for the presence of volatile organic vapors within the breathing zone, the borehole, and subsurface samples upon their retrieval. Drill cuttings and excavation spoils will also be monitored by use of the PID. The PID will be field checked for calibration accuracy three times per day (morning, lunch, and end of day. If subsurface conditions warrant, a combustible gas indicator (CGI) with oxygen alarm may also be used to monitor the borehole for the presence of combustible gases. Similar monitoring of fluids produced during well development will also be conducted.

7.1.2 Interim Remedial Measures

If future Interim Remedial Measures (IRM) occurs, monitoring will be performed during excavation and sampling operations when C&S personnel are within the work zone. Although historical information previously obtained at the Site indicates low level of volatile organic vapors and compounds, a photoionization detector (PID) will be used during subsurface activities. If an IRM is performed, the, the remedial contractor will be required to employ dust control practices during work.

7.2 Action Levels

If readings on the PID exceed 10 ppm for more than fifteen minutes consecutively, then personal protective equipment should be upgraded to Level C. The air purifying respirator used with Level C protective equipment must be equipped with organic vapor cartridges. If readings on the explosive gas meter are within a range of 10%-25% of the LEL then continuous monitoring will be implemented. Readings above 25% of the LEL indicate the potential for an explosive condition. Sources of ignition should be removed and the Site should be evacuated.

7.3 Personal Monitoring Procedures

Personal monitoring shall be performed as a contingency measure in the event that VOC concentrations are consistently above the 10 ppm action level as detected by the PID. If the concentration of VOCs is above this action level, then amendments to the HASP must be made before work can continue at the Site.

SECTION 8 - COMMUNICATIONS

A phone will be located on Site to be utilized by personnel conducting investigation and IRM efforts. Cell phones will be the primary means of communicating with emergency support services/facilities.

SECTION 9 - SAFETY CONSIDERATIONS FOR SITE OPERATIONS

9.1 General

Standard safe work practices that will be followed include:

- Do not climb over/under drums, or other obstacles.
- Do not enter the work zone alone.
- Practice contamination avoidance, on and off-site.
- Plan activities ahead of time, use caution when conducting concurrently running activities.
- No eating, drinking, chewing or smoking is permitted in work zones.
- Due to the unknown nature of waste placement at the Site, extreme caution should be practiced during excavation activities.
- Apply immediate first aid to any and all cuts, scratches, abrasions, etc.
- Be alert to your own physical condition. Watch your buddy for signs of fatigue, exposure, etc.
- A work/rest regimen will be initiated when ambient temperatures and protective clothing create a potential heat stress situation.
- No work will be conducted without adequate natural light or without appropriate supervision.
- Task safety briefings will be held prior to onset of task work.
- Ignition of flammable liquids within or through improvised heating devices (barrels, etc.) or space heaters is forbidden.
- Entry into areas of spaces where toxic or explosive concentrations of gases or dust may exist without proper equipment is prohibited.
- Any injury or unusual health effect must be reported to the Site health and safety officer.
- Prevent splashing or spilling of potentially contaminated materials.
- Use of contact lenses is prohibited while on site.
- Beards and other facial hair that would impair the effectiveness of respiratory protection are prohibited if respiratory protection is necessary.
- Field crew members should be familiar with the physical characteristics of investigations, including:

- Wind direction in relation to potential sources
- Accessibility to co-workers, equipment, and vehicles
- Communication
- Hot zones (areas of known or suspected contamination)
- Site access
- Nearest water sources

- The number of personnel and equipment in potentially contaminated areas should be minimized consistent with site operations.

9.2 Field Operations

9.2.1 Intrusive Operations

The HSO or designee will be present on-site during all intrusive work, e.g., drilling operations, excavations, trenching, and will provide monitoring to oversee that appropriate levels of protection and safety procedures are utilized by C&S Engineers, Inc., personnel. The use of salamanders or other equipment with an open flame is prohibited and the use of protective clothing, especially hard hats and boots, will be required during drilling or other heavy equipment operations.

9.2.2 Excavations and Excavation Trenching

Guidance relating to safe work practices for C&S employees regarding excavations and excavating/trenching operation is presented in Appendix A of this HASP.

SECTION 10 - DECONTAMINATION PROCEDURES

Decontamination involves physically removing contaminants and/or converting them chemically into innocuous substances. Only general guidance can be given on methods and techniques for decontamination. Decontamination procedures are designed to:

- Remove contaminant(s).
- Avoid spreading the contamination from the work zone.
- Avoid exposing unprotected personnel outside of the work zone to contaminants.

Contamination avoidance is the first and best method for preventing spread of contamination from a hazardous site. Each person involved in site operations must practice the basic methods of contamination avoidance listed below. Additional precautions may be required in the HASP.

- Know the limitations of all protective equipment being used.
- Do not enter a contaminated area unless it is necessary to carry out a specific objective.
- When in a contaminated area, avoid touching anything unnecessarily.
- Walk around pools of liquids, discolored areas, or any area that shows evidence of possible contamination.
- Walk upwind of contamination, if possible.
- Do not sit or lean against anything in a contaminated area. If you must kneel (e.g., to take samples), use a plastic ground sheet.
- If at all possible, do not set sampling equipment directly on contaminated areas. Place equipment on a protective cover such as a ground cloth.
- Use the proper tools necessary to safely conduct the work.

Specific methods that may reduce the chance of contamination are:

- Use of remote sampling techniques.
- Opening containers by non-manual means.
- Bagging monitoring instruments.
- Use of drum grapplers.
- Watering down dusty areas.

Equipment which will need to be decontaminated includes tools, monitoring equipment, and personal protective equipment. Items to be decontaminated will be brushed off, rinsed, and dropped into a plastic container supplied for that purpose. They will then be washed with a detergent solution and rinsed with clean water. Monitoring instruments may be wrapped in plastic bags prior to entering the field in order to reduce the potential for contamination. Instrumentation that is contaminated during field operations will be carefully wiped down.

Heavy equipment, if utilized for operations where it may be contaminated, will have prescribed decontamination procedures to prevent contaminant materials from potentially leaving the Site. On-site contractors, such as drillers or backhoe operators, will be responsible for decontaminating all construction equipment prior to demobilization.

SECTION 11 – DISPOSAL PROCEDURES

All discarded materials, waste materials, or other objects shall be handled in such a way as to reduce or eliminate the potential for spreading contamination, creating a sanitary hazard, or causing litter to be left on-site. All potentially contaminated materials, e.g., clothing, gloves, etc., will be bagged or drummed as necessary and segregated for proper disposal. All contaminated waste materials shall be disposed of as required by the provisions included in the contract and consistent with regulatory provisions. All non-contaminated materials shall be collected and bagged for appropriate disposal. Investigation derived waste will be managed consistent with the work plan for this Site and DER-10 Technical Guidance for Site Investigation and Remediation dated May 2010.

SECTION 12 - EMERGENCY RESPONSE PROCEDURES

As a result of the hazards at the Site, and the conditions under which operations are conducted, there is the possibility of emergency situations. This section establishes procedures for the implementation of an emergency plan.

12.1 Emergency Coordinator

Emergency Coordinator:..... Cody Martin.....Work Phone: (716) 847-1630

The Emergency Coordinator or his on-site designee will, in concert with Campus Square LLC, implement the emergency response procedures whenever conditions at the Site warrant such action. The Emergency Coordinator or his on-site designee will be responsible for assuring the evacuation, emergency treatment, emergency transport of C&S personnel as

necessary, and notification of emergency response units (refer to phone listing in the beginning of this HASP) and the appropriate management staff.

12.2 Evacuation

In the event of an emergency situation, such as fire, explosion, significant release of toxic gases, etc., all personnel will evacuate and assemble in a designated assembly area. The Emergency Coordinator or his on-site designee will have authority to contact outside services as required. Under no circumstances will incoming personnel or visitors be allowed to proceed into the area once the emergency signal has been given. The Emergency Coordinator or his on-site designee must see that access for emergency equipment is provided and that all ignition sources have been shut down once the emergency situation is established. Once the safety of all personnel is established, the Fire Department and other emergency response groups will be notified by telephone of the emergency.

12.3 Potential or Actual Fire or Explosion

Immediately evacuate the Site and notify local fire and police departments, and other appropriate emergency response groups, if LEL values are above 25% in the work zone or if an actual fire or explosion has taken place.

12.4 Environmental Incident (spread or release of contamination)

Control or stop the spread of contamination if possible. Notify the Emergency Coordinator and the Project Manager. Other appropriate response groups will be notified as appropriate.

12.5 Personnel Injury

Emergency first aid shall be applied on-site as necessary. Then, decontaminate (en route if necessary) and transport the individual to nearest medical facility if needed. The ambulance/rescue squad shall be contacted for transport as necessary in an emergency. The directions to the hospital are shown in Section 1 of this HASP and a map is shown in Attachment A.

12.6 Personnel Exposure

- *Skin Contact*: Use copious amounts of soap and water. Wash/rinse affected area thoroughly, and then provide appropriate medical attention. Eyes should be thoroughly rinsed with water for at least 15 minutes.
- *Inhalation*: Move to fresh air and/or, if necessary, decontaminate and transport to emergency medical facility.
- *Ingestion*: Decontaminate and transport to emergency medical facility.
- *Puncture Wound/Laceration*: Decontaminate, if possible, and transport to emergency medical facility.

12.7 Adverse Weather Conditions

In the event of adverse weather conditions, the HSO will determine if work can continue without sacrificing the health and safety of field workers.

12.8 Incident Investigation and Reporting

In the event of an incident, procedures discussed in the Medical Emergency/Incident Response Protocol, presented in Appendix B of this HASP, shall be followed.

SECTION 13 - COMMUNITY RELATIONS

13.1 Community Health and Safety Plan

13.1.1 Community Health and Safety Monitoring

As part of the site work, three general types of efforts are scheduled, including, non-intrusive reconnaissance tasks, sampling or monitoring tasks (monitoring point sampling), and intrusive tasks (test trenching, subsurface borings, monitoring well installation). During completion of general reconnaissance and sampling or monitoring tasks, potential for health and safety risks to off-site landowners or the local community are not anticipated.

During completion of intrusive efforts at or adjacent to the Site, health and safety monitoring efforts will be concentrated on the area or areas in which intrusive efforts are being

completed. Since the air pathway is the most available and likely avenue for the release of potential contaminants to the atmosphere at or near the Site, in addition to limiting public or community access to the areas in which intrusive efforts are completed, health and safety measures will primarily consist of monitoring the air pathway for worker exposure.

13.1.2 Community Air Monitoring Plan

Efforts will be taken to complete field work in a manner which will minimize the creation of airborne dust or particulates. Under dry conditions, work areas may be wetted to control dust. During periods of extreme wind, intrusive field work may be halted until such time as the potential for creating airborne dust or particulate matter as a result of investigation activities is limited. Periodic monitoring following the guidelines of the site's Community Air Monitoring Plan (see Appendix C of the IRM) will be implemented during all non-intrusive Site investigation activities, including surface soil and sediment sampling, and collection of groundwater samples from groundwater monitoring wells.

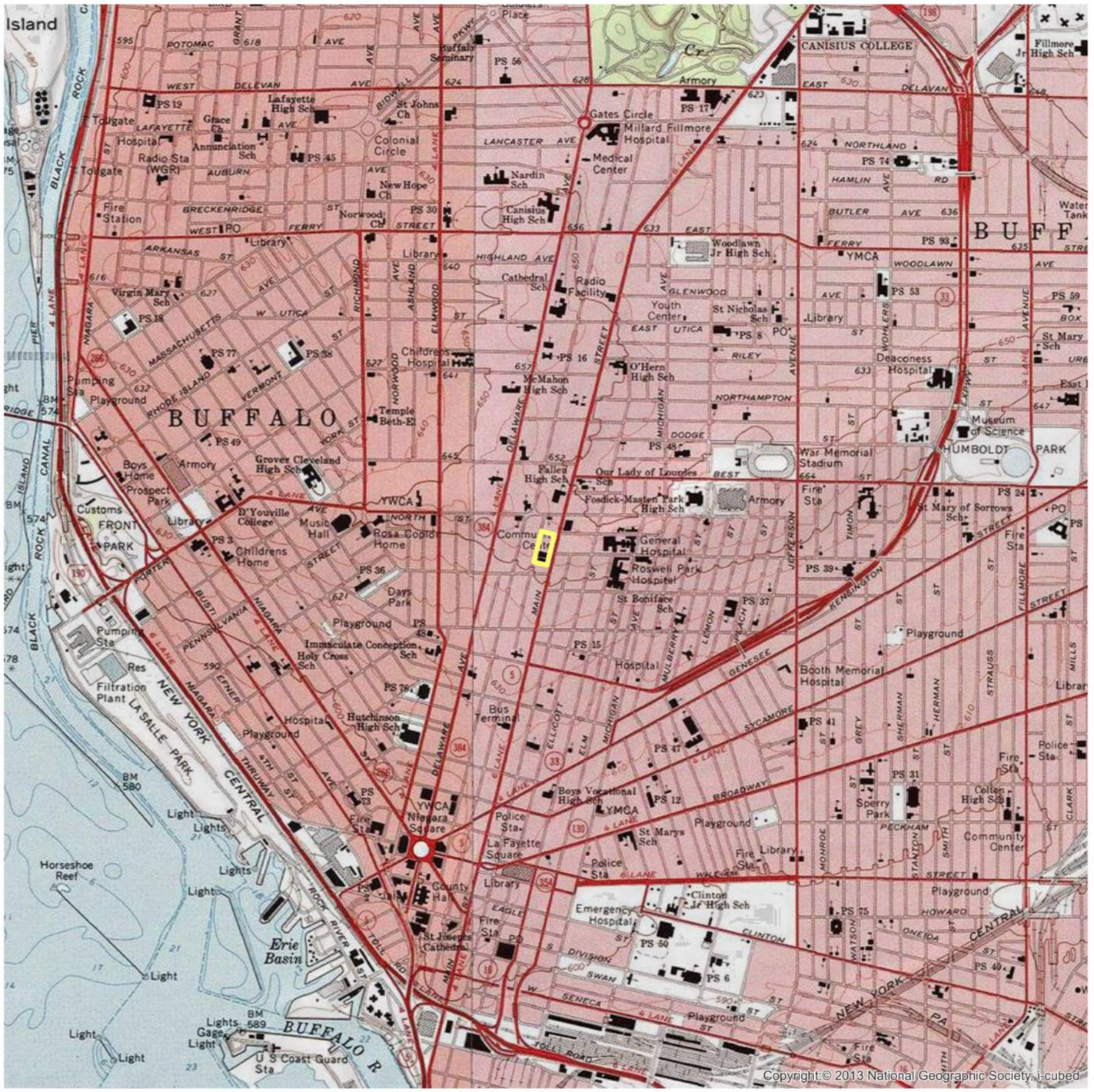
During completion of Site investigation, a community air monitoring plan meeting the requirements of the site's Community Air Monitoring Plan (see Appendix C of the IRM) will be implemented for the duration of intrusive activities. These additional air monitoring activities will include establishment of background conditions, continuous monitoring for volatile organic compounds and/or particulates at the downwind work area (exclusion zone) perimeter, recording of monitoring data, and institution and documentation of Response Levels and appropriate actions in accordance with NYSDOH guidance.

SECTION 14 - AUTHORIZATIONS

Personnel authorized to enter the Site while operations are being conducted must be approved by the HSO. Authorization will involve completion of appropriate training courses, medical examination requirements, and review and sign-off of this HASP. No C&S personnel should enter the work zone alone. Each site visitor should check in with the HSO or Project Manager prior to entering the work zones.

FIGURE 1

SITE LOCATION MAP



Legend

BROWNFIELD CLEANUP PROGRAM (BCP) SITE

0 1,000 2,000 4,000 Feet

C&S COMPANIES®
C&S Engineers, Inc.
141 Elm Street, Suite 100
Buffalo, New York 14203
Phone: 716-847-1630
Fax: 716-847-1454
www.cscos.com

N

HOPE ON MAIN
954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM
BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION

REVISIONS

PROJECT NO:	X97.001.001
DATE:	DECEMBER 2021
DRAWN BY:	
DESIGNED BY:	
CHECKED BY:	

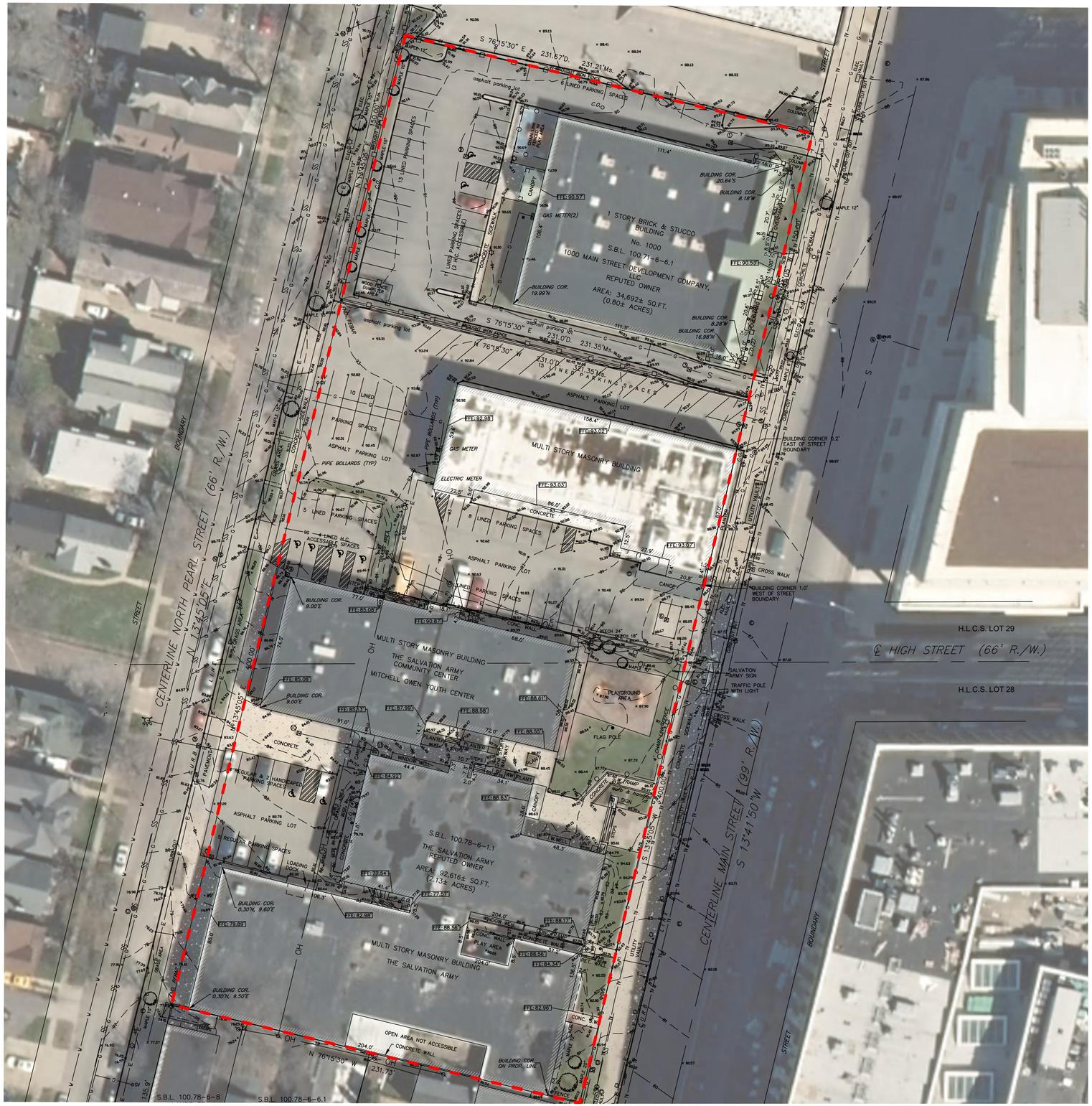
SITE LOCATION

FIGURE 1

Oct 31, 2022 – 2:19pm
F:\Project\X97 – The Salvation Army\X97001001 – Buffalo Salvation Army BCP\Planning–Study\CADD\Sheets\A–1 USGS.dwg

FIGURE 2

SITE AERIAL PHOTO



LEGEND

BROWNFIELD CLEANUP PROGRAM (BCP) BOUNDARY

SURVEY LEGEND

- CATCH BASIN
- C.O. CLEAN OUT
- COMMUNICATIONS MANHOLE
- ELECTRIC MANHOLE
- FLOOD LIGHT
- GVS GAS SERVICE VALVE
- GV GAS VALVE
- GUY WIRE
- HYDRANT
- LIGHT POLE, STANDARD
- PARKING METER
- SANITARY MANHOLE
- SANITARY VENT
- SIGN, ONE POST
- SIGN, TWO POST
- TRAFFIC MANHOLE
- UTILITY POLE
- WSV WATER SERVICE VALVE
- WV WATER VALVE

NOTES

1. SURVEY INFORMATION WAS PROVIDED BY GPI ENGINEERING, LANDSCAPE, ARCHITECTURE & SURVEYING, LLP DATED 12/10/2021. C&S ENGINEERS, INC. ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

2. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS AND UTILITY LOCATIONS PRIOR TO THE START OF CONSTRUCTION. CONTACT THE ENGINEER WITH ANY DISCREPANCIES FOUND IN THE FIELD.

3. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS AND LAYOUT.

0 30 60 120 FEET

SCALE: 1" = 30'

C&S COMPANIES
C&S Engineers, Inc.
141 Elm Street, Suite 100
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Fax: 716-847-1454
www.cscos.com

THE SALVATION ARMY

HOPE ON MAIN
954 MAIN STREET
BROWNFIELD CLEANUP PROGRAM

CITY OF BUFFALO, NEW YORK

MARK	DATE	DESCRIPTION
		REVISIONS

PROJECT NO:	X97.001.001
DATE:	OCTOBER 2022
DRAWN BY:	C. MARTIN
DESIGNED BY:	C. MARTIN
CHECKED BY:	D. RIKER

SITE DETAIL

FIGURE 2

October 31, 2022 - 2:49PM
P:\Project\X97 - The Salvation Army\X97001001 - Buffalo Salvation Army BCP\Planning-Study\CADD\Sheets\DETAIL.dwg

ATTACHMENT A

MAP TO HOSPITAL

bing maps

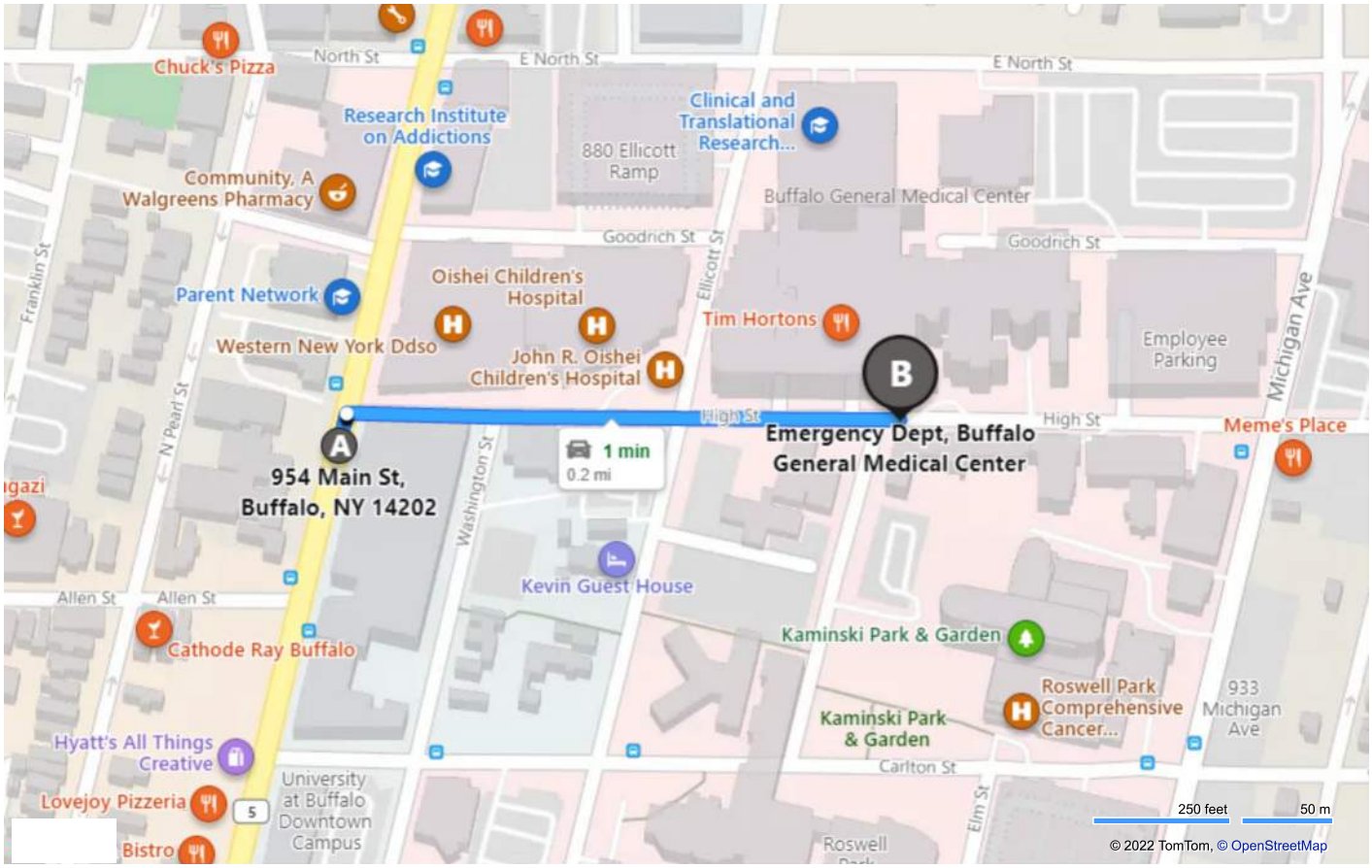
A 954 Main St, Buffalo, NY 14202

B Emergency Dept, Buffalo General Medical Center, 100 High St, Buffalo, NY 14203

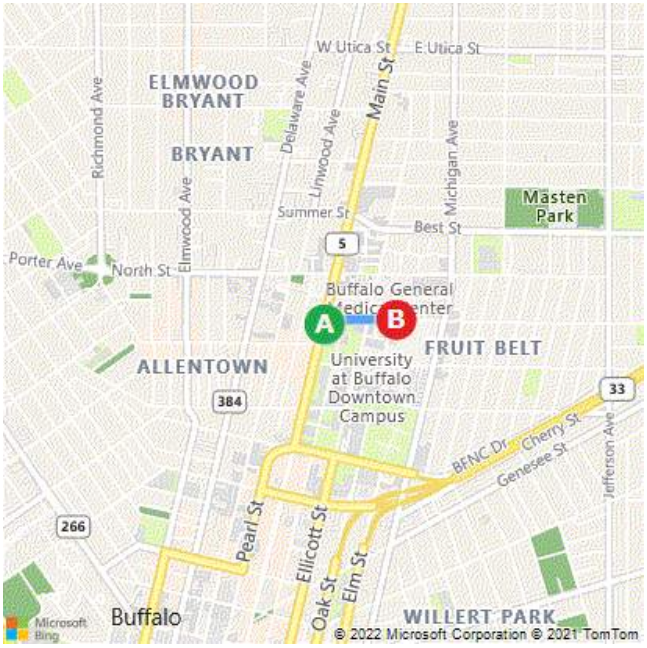
1 min , 0.2 miles

Light traffic (Leave at 10:12 AM)

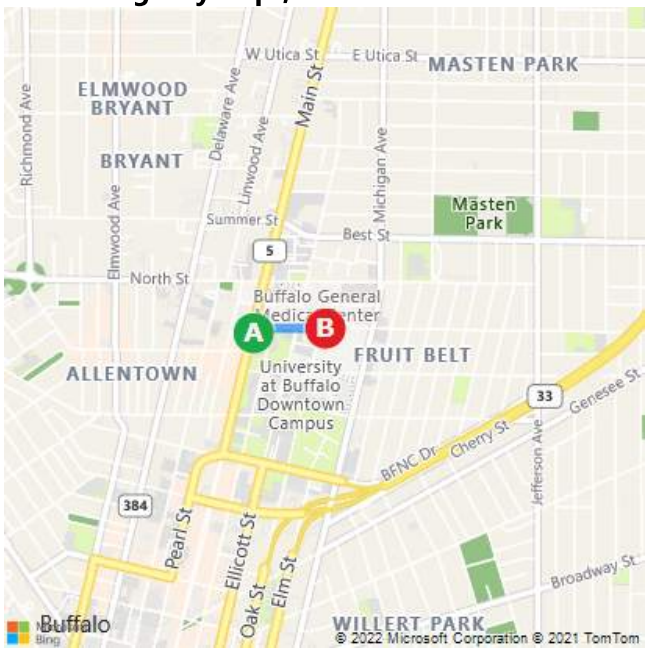
Via NY-5, High St



A 954 Main St, Buffalo, NY 14202



B Emergency Dept, Buffalo General Medical...



Appendix A

EXCAVATION/TRENCHING GUIDELINE

C&S ENGINEERS

C&S ENGINEERS, INC. HEALTH & SAFETY GUIDELINE #14
EXCAVATION/TRENCHING OPERATIONS

TABLE OF CONTENTS

C&S ENGINEERS, INC.
EXCAVATION/TRENCHING OPERATIONS

1.0 PURPOSE

To establish safe operating procedures for excavation/trenching operations at C&S work sites.

2.0 SCOPE

Applies to all C&S activity where excavation or trenching operations take place.

3.0 DEFINITIONS

Excavation — Any manmade cavity or depression in the earth's surface, including its sides, walls, or faces, formed by earth removal and producing unsupported earth conditions by reasons of the excavation.

Trench — A narrow excavation made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench is not greater than 15 feet.

4.0 RESPONSIBILITY EMPLOYEES

Employees — All employees must understand and follow the procedures outlined in this guideline during all excavation and trenching operations.

Health and Safety Coordinator/Officer (HSC/HSO) - The HSC/HSO is responsible for ensuring that these procedures are implemented at each work site.

5.0 GUIDELINES

5.1 Hazards Associated With Excavation/Trenching

The principal hazards associated with excavation/trenching are:

- Suffocation, crushing, or other injury from falling material.
- Damage/failure of installed underground services and consequent hazards.
- Tripping, slipping, or falling.
- Possibility of explosive, flammable, toxic, or oxygen-deficient atmosphere in excavation.

5.2 Procedures Prior to Excavation

1. Underground Utilities

   - Determine the presence and location of any underground chemical or utility pipes, electrical, telephone, or instrument wire or cables.
   - If the local DigSafely NY is unable to locate private/domestic or plant utilities, then an independent utility locating service must be contacted and mobilized to the site.
   - Identify the location of underground services by stakes, markers or paint.
   - Arrange to de-energize or isolate underground services during excavation. If not possible, or if location is not definite, method of excavation shall be established to minimize hazards by such means as:

     a) Use of hand tools in area of underground services.
     b) Insulating personnel and equipment from possible electrical contact.
     c) Use of tools or equipment that will reduce possibility of damage to underground services and hazard to worker.

2. Identify Excavation Area — Areas to be excavated shall be identified and segregated by means of barricades, ropes, and/or signs to prevent access of unauthorized personnel and equipment. Suitable means shall be provided to make barriers visible at all times.
3. Surface Water Provide means of diverting surface water from excavation.
4. Shoring/Bracing — Shoring or bracing that may be required for installed equipment adjacent to the excavation shall be designed by a competent person.
5. Structural Ramps — Structural ramps that are used solely by employees as a means of access to or egress from the excavation shall be designed by a competent person.

5.3 Procedures For Doing The Excavation

1. **Determine the need for shoring/sloping** — the type of soil will establish the need for shoring, slope of the excavation, support systems, and equipment to be used. The soil condition may change as the excavation proceeds. Appendices A, B, C, D, E, and F of the OSHA Excavation Regulation, 29 CFR 1926 Subpart P, are to be used in defining shoring and sloping requirements.

2. **Mobile equipment** — For safe use of mobile industrial equipment in or near the excavation, the load carrying capacity of soil shall be established and suitable protection against collapse of soil provided by the use of mats, barricades, restricting the location of equipment, or shoring.

3. Excavated material (spoil) shall be stored at least two (2) feet from the edge of the excavation.

4. All trench (vertical sides) excavations greater than five (5) feet deep shall be shored.

5. The excavation shall be inspected daily for changes in conditions, including the presence of ground water, change in soil condition, or effects of weather such as rain or freeze. A safe means of continuing the work shall be established based on changes in condition. Typically test trench excavations made as part of an environmental subsurface nvestigation are made and backfilled the same day.

6. Appropriate monitoring for gas, toxic, or flammable materials will be conducted to establish the need for respiratory equipment, ventilation, or other measures required to continue the excavation safely.

7. Adequate means of dewatering the excavation shall be provided by the contractor as required.

8. A signal person shall be provided to direct powered equipment if working in the excavation with other personnel.

9. A signal person shall be provided when backfilling excavations to direct powered equipment working in the excavation with other personnel.

10. Warning vests will be worn when employees are exposed to public vehicular traffic.

11. Employees shall stand away from vehicles being loaded or unloaded, and shall not be permitted underneath loads handled by lifting or dragging equipment.

12. Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available if hazardous atmospheric conditions exist or may be expected to develop. The specifics will be determined by the HSC/HSM.

13. Walkways or bridges with standard guardrail shall be provided where employees or equipment are required or permitted to cross over excavations.

5.4 Entering the Excavation

No C&S Engineers, Inc., employee shall enter an excavation which fails to meet the requirements of Section 5.3 of this guideline.

6.0 REFERENCES

29 CFR 1926, Subpart P - Excavations

7.0 ATTACHMENTS

29 CFR 1926 Subpart P - Appendices A, B, F

• **Part Number:**	1926
• **Part Title:**	Safety and Health Regulations for Construction
• **Subpart:**	P
• **Subpart Title:**	Excavations
• **Standard Number:**	1926 Subpart P App A
• **Title:**	Soil Classification

(a) Scope and application - (1) Scope. This appendix describes a method of classifying soil and rock deposits based on site and environmental conditions, and on the structure and composition of the earth deposits. The appendix contains definitions, sets for requirements, and describes acceptable visual and manual tests for use in classifying soils.

(2) Application. This appendix applies when a sloping or benching system is designed in accordance with the requirements set fo 1926.652(b)(2) as a method of protection for employees from cave-ins. This appendix also applies when timber shoring for excav designed as a method of protection from cave-ins in accordance with appendix C to subpart P of part 1926, and when aluminum shoring is designed in accordance with appendix D. This Appendix also applies if other protective systems are designed and selec from data prepared in accordance with the requirements set forth in 1926.652(c), and the use of the data is predicated on the us classification system set forth in this appendix.

(b) Definitions. The definitions and examples given below are based on, in whole or in part, the following; American Society for T Materials (ASTM) Standards D653-85 and D2488; The Unified Soils Classification System; The U.S. Department of Agriculture (US Textural Classification Scheme; and The National Bureau of Standards Report BSS-121.

"Cemented soil" means a soil in which the particles are held together by a chemical agent, such as calcium carbonate, such that a hand-size sample cannot be crushed into powder or individual soil particles by finger pressure.

"Cohesive soil" means clay (fine grained soil), or soil with a high clay content, which has cohesive strength. Cohesive soil does not crumble, can be excavated with vertical sideslopes, and is plastic when moist. Cohesive soil is hard to break up when dry, and exhibits significant cohesion when submerged. Cohesive soils include clayey silt, sandy clay, silty clay, clay and organic clay.

"Dry soil" means soil that does not exhibit visible signs of moisture content.

"Fissured" means a soil material that has a tendency to break along definite planes of fracture with little resistance, or a material that exhibits open cracks, such as tension cracks, in an exposed surface.

"Granular soil" means gravel, sand, or silt (coarse grained soil) with little or no clay content. Granular soil has no cohesive strength. Some moist granular soils exhibit apparent cohesion. Granular soil cannot be molded when moist and crumbles easily when dry.

"Layered system" means two or more distinctly different soil or rock types arranged in layers. Micaceous seams or weakened planes in rock or shale are considered layered.

"Moist soil" means a condition in which a soil looks and feels damp. Moist cohesive soil can easily be shaped into a ball and rolled into small diameter threads before crumbling. Moist granular soil that contains some cohesive material will exhibit signs of cohesion between particles.

"Plastic" means a property of a soil which allows the soil to be

deformed or molded without cracking, or appreciable volume change.

"Saturated soil" means a soil in which the voids are filled with water. Saturation does not require flow. Saturation, or near saturation, is necessary for the proper use of instruments such as a pocket penetrometer or sheer vane.

"Soil classification system" means, for the purpose of this subpart, a method of categorizing soil and rock deposits in a hierarchy of Stable Rock, Type A, Type B, and Type C, in decreasing order of stability. The categories are determined based on an analysis of the properties and performance characteristics of the deposits and the characteristics of the deposits and the environmental conditions of exposure.

"Stable rock" means natural solid mineral matter that can be excavated with vertical sides and remain intact while exposed.

"Submerged soil" means soil which is underwater or is free seeping.

"Type A" means cohesive soils with an unconfined, compressive strength of 1.5 ton per square foot (tsf) (144 kPa) or greater. Examples of cohesive soils are: clay, silty clay, sandy clay, clay loam and, in some cases, silty clay loam and sandy clay loam. Cemented soils such as caliche and hardpan are also considered Type A. However, no soil is Type A if:

(i) The soil is fissured; or

(ii) The soil is subject to vibration from heavy traffic, pile driving, or similar effects; or

(iii) The soil has been previously disturbed; or

(iv) The soil is part of a sloped, layered system where the layers dip into the excavation on a slope of four horizontal to one vertical (4H:1V) or greater; or

(v) The material is subject to other factors that would require it to be classified as a less stable material.

"Type B" means:

(i) Cohesive soil with an unconfined compressive strength greater than 0.5 tsf (48 kPa) but less than 1.5 tsf (144 kPa); or

(ii) Granular cohesionless soils including: angular gravel (similar to crushed rock), silt, silt loam, sandy loam and, in some cases, silty clay loam and sandy clay loam.

(iii) Previously disturbed soils except those which would otherwise be classed as Type C soil.

(iv) Soil that meets the unconfined compressive strength or cementation requirements for Type A, but is fissured or subject to vibration; or

(v) Dry rock that is not stable; or

(vi) Material that is part of a sloped, layered system where the layers dip into the excavation on a slope less steep than four horizontal to one vertical (4H:1V), but only if the material would otherwise be classified as Type B.

"Type C" means:

(i) Cohesive soil with an unconfined compressive strength of 0.5 tsf (48 kPa) or less; or

(ii) Granular soils including gravel, sand, and loamy sand; or

(iii) Submerged soil or soil from which water is freely seeping; or

(iv) Submerged rock that is not stable, or

(v) Material in a sloped, layered system where the layers dip into the excavation or a slope of four horizontal to one vertical (4H:1V) or steeper.

"Unconfined compressive strength" means the load per unit area at which a soil will fail in compression. It can be determined by laboratory testing, or estimated in the field using a pocket penetrometer, by thumb penetration tests, and other methods.

"Wet soil" means soil that contains significantly more moisture than moist soil, but in such a range of values that cohesive material will slump or begin to flow when vibrated. Granular material that would exhibit cohesive properties when moist will lose those cohesive properties when wet.

(c) Requirements - (1) Classification of soil and rock deposits. Each soil and rock deposit shall be classified by a competent perso Rock, Type A, Type B, or Type C in accordance with the definitions set forth in paragraph (b) of this appendix.

(2) Basis of classification. The classification of the deposits shall be made based on the results of at least one visual and at least analysis. Such analyses shall be conducted by a competent person using tests described in paragraph (d) below, or in other reco methods of soil classification and testing such as those adopted by the American Society for Testing Materials, or the U.S. Depart Agriculture textural classification system.

(3) Visual and manual analyses. The visual and manual analyses, such as those noted as being acceptable in paragraph (d) of thi shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify prc properties, factors, and conditions affecting the classification of the deposits.

(4) Layered systems. In a layered system, the system shall be classified in accordance with its weakest layer. However, each laye classified individually where a more stable layer lies under a less stable layer.

(5) Reclassification. If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any w changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumst

(d) Acceptable visual and manual tests. - (1) Visual tests. Visual analysis is conducted to determine qualitative information regarc excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil take samples from excavated material.

(i) Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the amounts of the particle sizes. Soil that is primarily composed of fine-grained material material is cohesive material. Soil composec of coarse-grained sand or gravel is granular material.

(ii) Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does nc clumps is granular.

(iii) Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tens could indicate fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of m ground and are indications of potentially hazardous situations.

(iv) Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground s and to identify previously disturbed soil.

(v) Observed the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slop the excavation. Estimate the degree of slope of the layers.

(vi) Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water see the sides of the excavation, or the location of the level of the water table.

(vii) Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the s the excavation face.

(2) Manual tests. Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil a provide more information in order to classify soil properly.

(i) Plasticity. Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8-inch in diameter. Cohe material can be successfully rolled into threads without crumbling. For example, if at least a two inch (50 mm) length of 1/8-inch be held on one end without tearing, the soil is cohesive.

(ii) Dry strength. If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is g combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clu only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps wh break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the s considered unfissured.

(iii) Thumb penetration. The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive so test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard designatior "Standard Recommended Practice for Description of Soils (Visual - Manual Procedure).") Type A soils with an unconfined compre strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great eff soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb, and can be molde finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practical excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to wetting influe flooding), the classification of the soil must be changed accordingly.

(iv) Other strength tests. Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetron using a hand-operated shearvane.

(v) Drying test. The basic purpose of the drying test is to differentiate between cohesive material with fissures, unfissured cohesi and granular material. The procedure for the drying test involves drying a sample of soil that is approximately one inch thick (2.5 six inches (15.24 cm) in diameter until it is thoroughly dry:

(A) If the sample develops cracks as it dries, significant fissures are indicated.

(B) Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil ha cohesive material content. The soil can be classified as an unfissured cohesive material and the unconfined compressive strength determined.

(C) If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between the pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cc fissures. If they pulverize easily into very small fragments, the material is granular.

Next Standard (1926 Subpart P App B)

Regulations (Standards - 29 CFR) - Table of Contents

• **Part Number:**	1926
• **Part Title:**	Safety and Health Regulations for Construction
• **Subpart:**	P
• **Subpart Title:**	Excavations
• **Standard Number:**	1926 Subpart P App B
• **Title:**	Sloping and Benching

(a) ***Scope and application.*** This appendix contains specifications for sloping and benching when used as methods of protecting working in excavations from cave-ins. The requirements of this appendix apply when the design of sloping and benching protectiv is to be performed in accordance with the requirements set forth in § 1926.652(b)(2).

(b) ***Definitions.***

Actual slope means the slope to which an excavation face is excavated.

Distress means that the soil is in a condition where a cave-in is imminent or is likely to occur. Distress is evidenced by such phen the development of fissures in the face of or adjacent to an open excavation; the subsidence of the edge of an excavation; the slu material from the face or the bulging or heaving of material from the bottom of an excavation; the spalling of material from the fa excavation; and ravelling, i.e., small amounts of material such as pebbles or little clumps of material suddenly separating from the excavation and trickling or rolling down into the excavation.

Maximum allowable slope means the steepest incline of an excavation face that is acceptable for the most favorable site condi protection against cave-ins, and is expressed as the ratio of horizontal distance to vertical rise (H:V).

Short term exposure means a period of time less than or equal to 24 hours that an excavation is open.

(c) ***Requirements*** -- (1) ***Soil classification.*** Soil and rock deposits shall be classified in accordance with appendix A to subpart I 1926.

(2) ***Maximum allowable slope.*** The maximum allowable slope for a soil or rock deposit shall be determined from Table B-1 of tl appendix.

(3) ***Actual slope.*** (i) The actual slope shall not be steeper than the maximum allowable slope.

(ii) The actual slope shall be less steep than the maximum allowable slope, when there are signs of distress. If that situation occur slope shall be cut back to an actual slope which is at least ½ horizontal to one vertical (½H:1V) less steep than the maximum allo slope.

(iii) When surcharge loads from stored material or equipment, operating equipment, or traffic are present, a competent person sh determine the degree to which the actual slope must be reduced below the maximum allowable slope, and shall assure that such achieved. Surcharge loads from adjacent structures shall be evaluated in accordance with § 1926.651(i).

(4) ***Configurations.*** Configurations of sloping and benching systems shall be in accordance with Figure B-1.

TABLE B-1
MAXIMUM ALLOWABLE SLOPES

SOIL OR ROCK TYPE	MAXIMUM ALLOWABLE SLOPES (H:V)(1) FOR EXCAVATIONS LESS THAN 20 FEET DEEP(3)
STABLE ROCK	VERTICAL (90°)
TYPE A (2)	3/4:1 (53°)
TYPE B	1:1 (45°)
TYPE C	1 ½:1 (34°)

Footnote(1) Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angle rounded off.

Footnote(2) A short-term maximum allowable slope of 1/2H:1V (63°) is allowed in excavations in Type A soil that are 12 feed (3.67 m) or l depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 m) in depth shall be 3/4H:1V (53°).

Footnote(3) Sloping or benching for excavations greater than 20 feet deep shall be designed by a registered professional engineer.

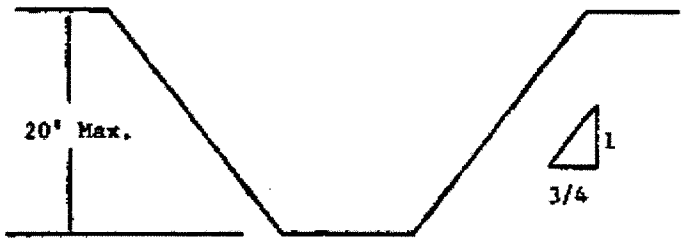
Figure B-1

Slope Configurations

(All slopes stated below are in the horizontal to vertical ratio)

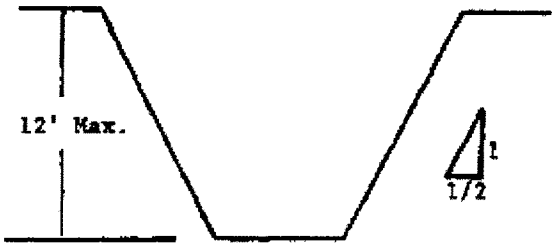
B-1.1 Excavations made in Type A soil.

1. All simple slope excavation 20 feet or less in depth shall have a maximum allowable slope of ¾:1.



SIMPLE SLOPE -- GENERAL

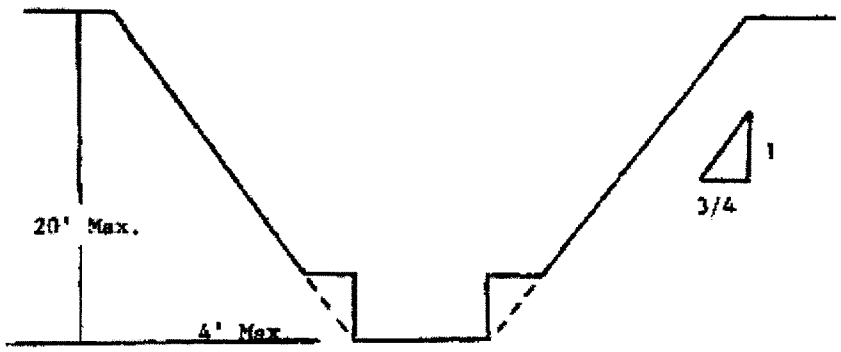
Exception: Simple slope excavations which are open 24 hours or less (short term) and which are 12 feet or less in depth shall have maximum allowable slope of ½:1.



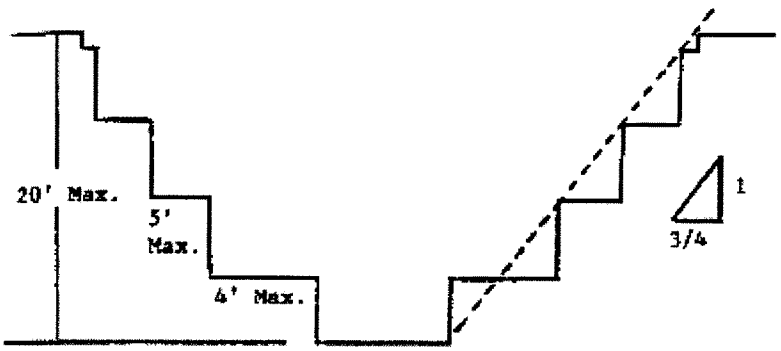
SIMPLE SLOPE -- SHORT TERM

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 3/4 to 1 and maximum bench dimens

follows:

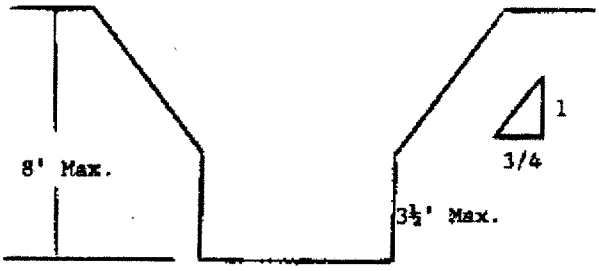


SIMPLE BENCH



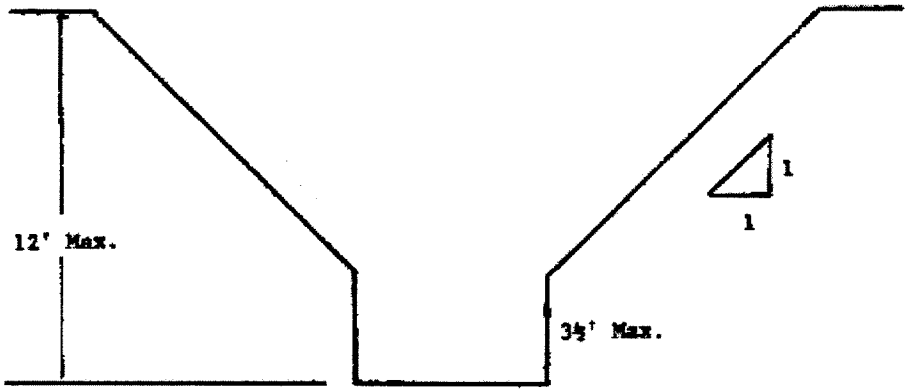
MULTIPLE BENCH

3. All excavations 8 feet or less in depth which have unsupported vertically sided lower portions shall have a maximum vertical sid feet.



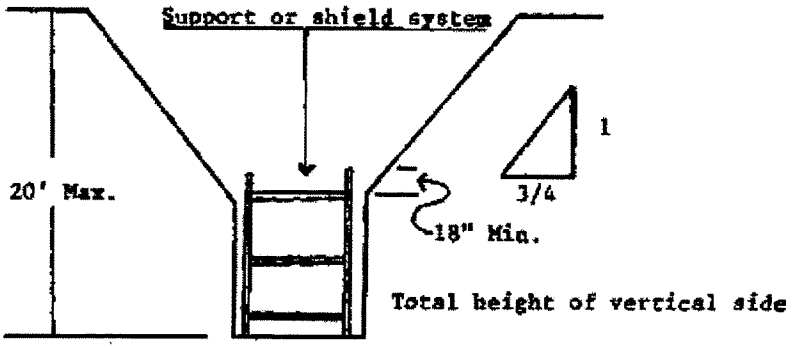
UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 8 FEET IN DEPTH)

All excavations more than 8 feet but not more than 12 feet in depth with unsupported vertically sided lower portions shall have a r allowable slope of 1:1 and a maximum vertical side of 3½ feet.



UNSUPPORTED VERTICALLY SIDED LOWER PORTION -- MAXIMUM 12 FEET IN DEPTH)

All excavations 20 feet or less in depth which have vertically sided lower portions that are supported or shielded shall have a maxi allowable slope of ¾:1. The support or shield system must extend at least 18 inches above the top of the vertical side.

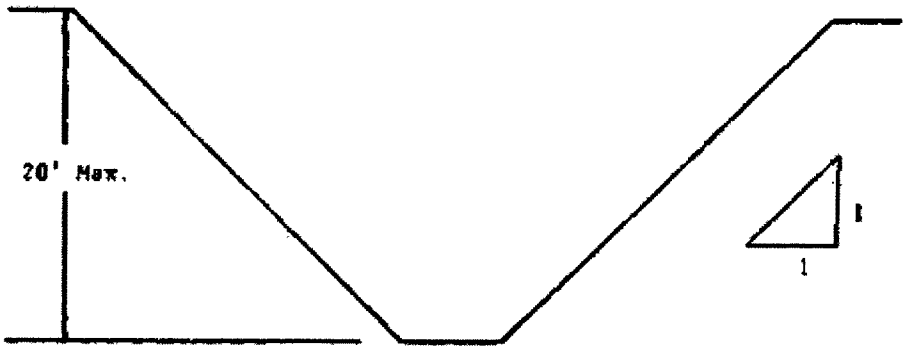


SUPPORTED OR SHIELDED VERTICALLY SIDED LOWER PORTION

4. All other simple slope, compound slope, and vertically sided lower portion excavations shall be in accordance with the other opt permitted under § 1926.652(b).

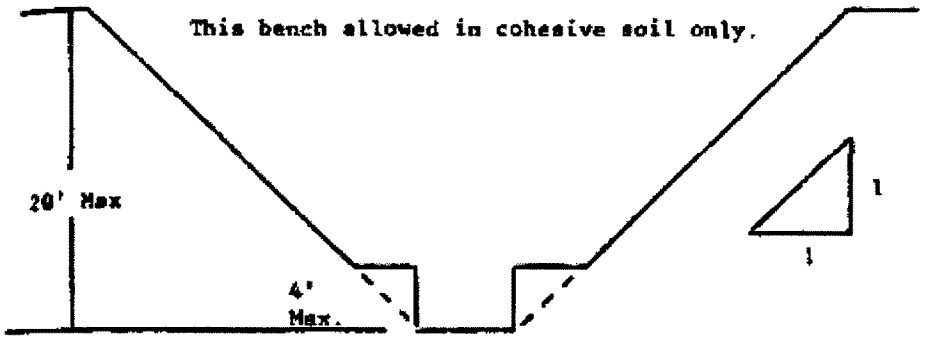
B-1.2 Excavations Made in Type B Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1.

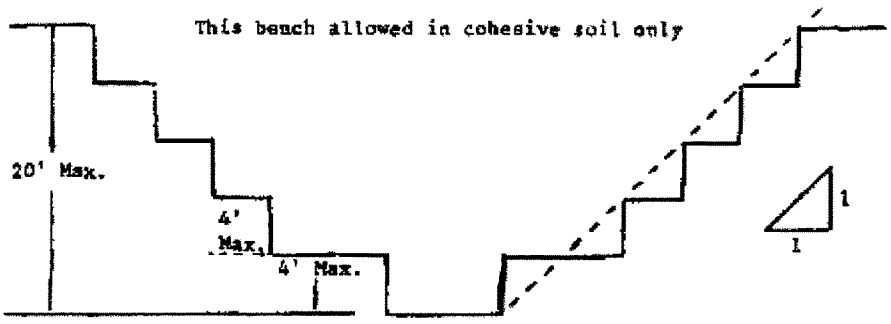


SIMPLE SLOPE

2. All benched excavations 20 feet or less in depth shall have a maximum allowable slope of 1:1 and maximum bench dimensions

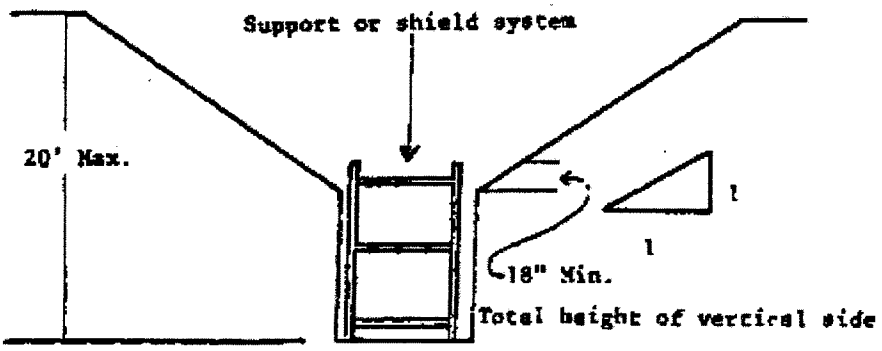


SINGLE BENCH



MULTIPLE BENCH

3. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at le inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1:1.

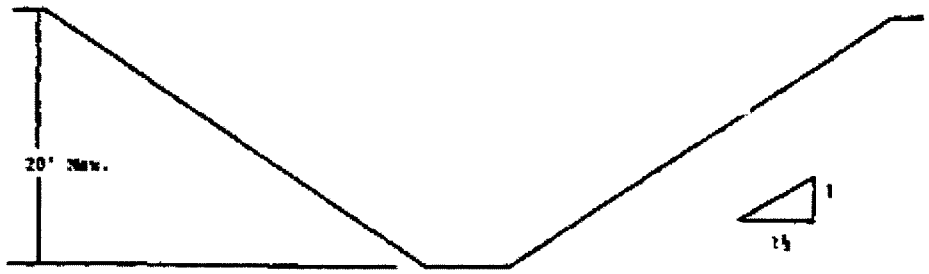


VERTICALLY SIDED LOWER PORTION

4. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

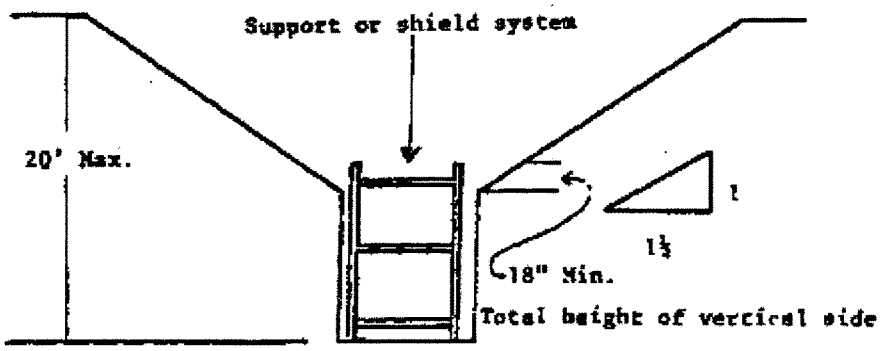
B-1.3 Excavations Made in Type C Soil

1. All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1½:1.



SIMPLE SLOPE

2. All excavations 20 feet or less in depth which have vertically sided lower portions shall be shielded or supported to a height at le inches above the top of the vertical side. All such excavations shall have a maximum allowable slope of 1½:1.

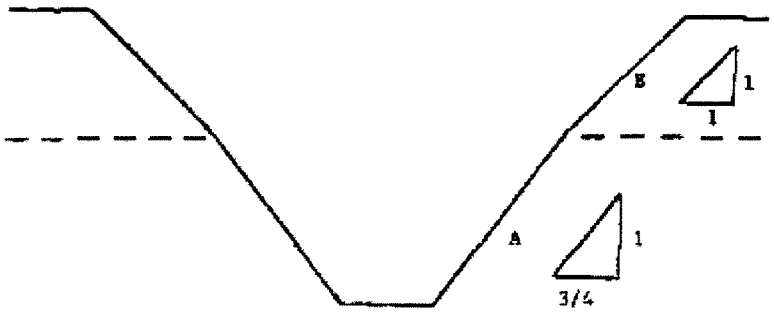


VERTICAL SIDED LOWER PORTION

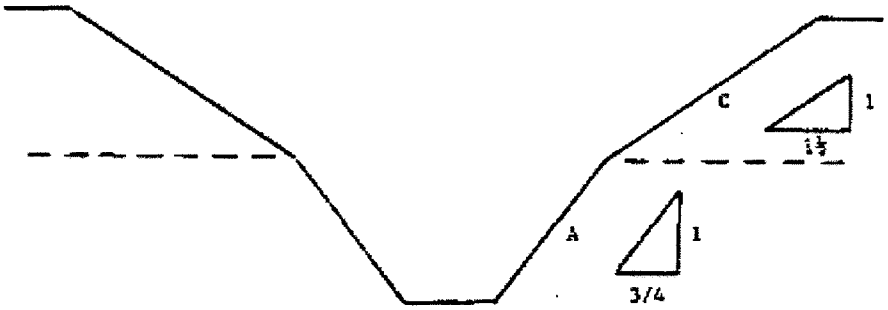
3. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

B-1.4 Excavations Made in Layered Soils

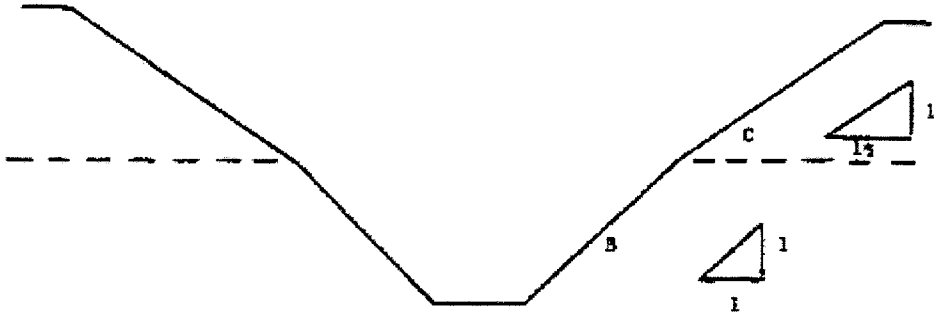
1. All excavations 20 feet or less in depth made in layered soils shall have a maximum allowable slope for each layer as set forth b



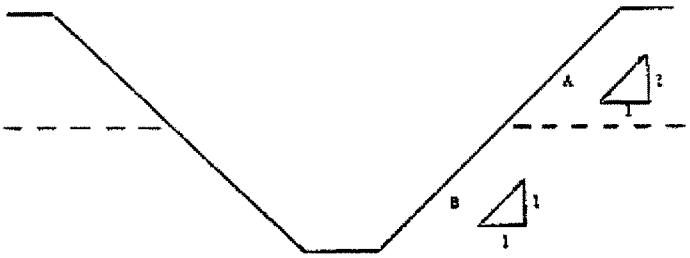
B OVER A



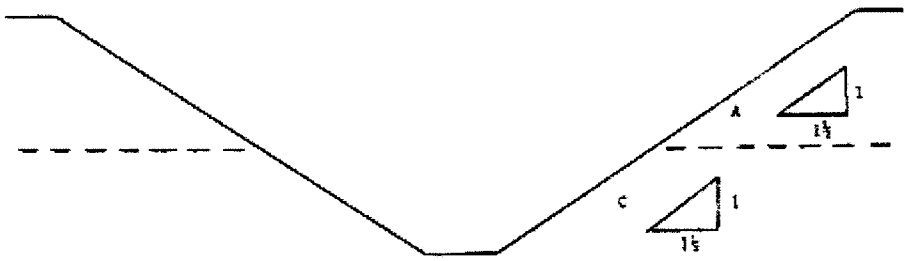
C OVER A



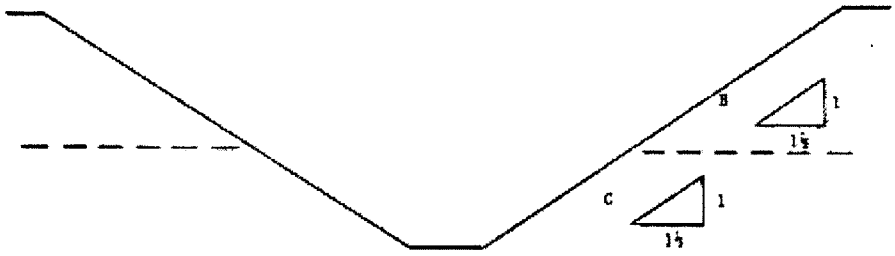
C OVER B



A OVER B



A OVER C



B OVER C

2. All other sloped excavations shall be in accordance with the other options permitted in § 1926.652(b).

Next Standard (1926 Subpart P App C)

Regulations (Standards - 29 CFR) - Table of Contents

- **Part Number:** 1926
- **Part Title:** Safety and Health Regulations for Construction
- **Subpart:** P
- **Subpart Title:** Excavations
- **Standard Number:** 1926 Subpart P App F
- **Title:** Selection of Protective Systems

The following figures are a graphic summary of the requirements contained in subpart P for excavations 20 feet or less in depth. Prc systems for use in excavations more than 20 feet in depth must be designed by a registered professional engineer in accordance wit 1926.652(b) and (c).

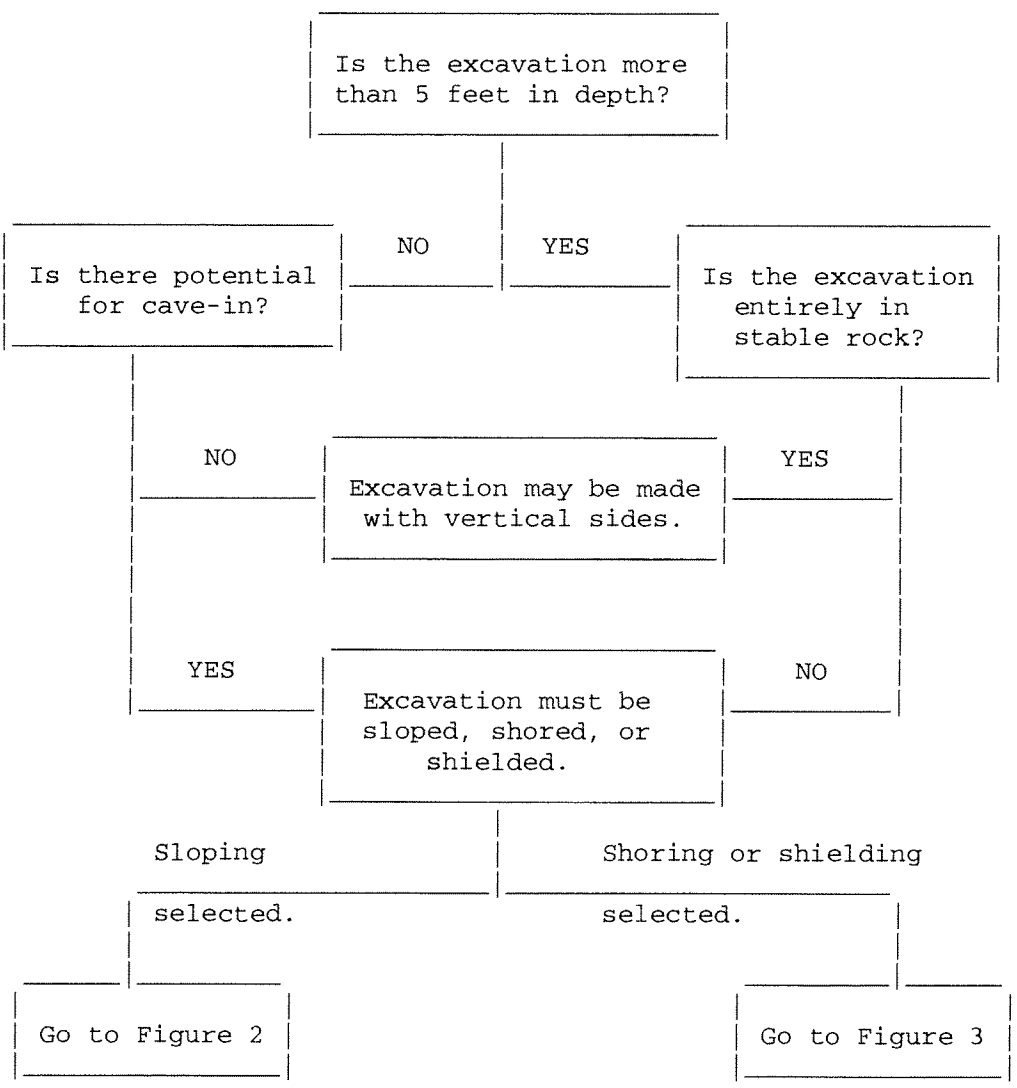


FIGURE 1 - PRELIMINARY DECISIONS

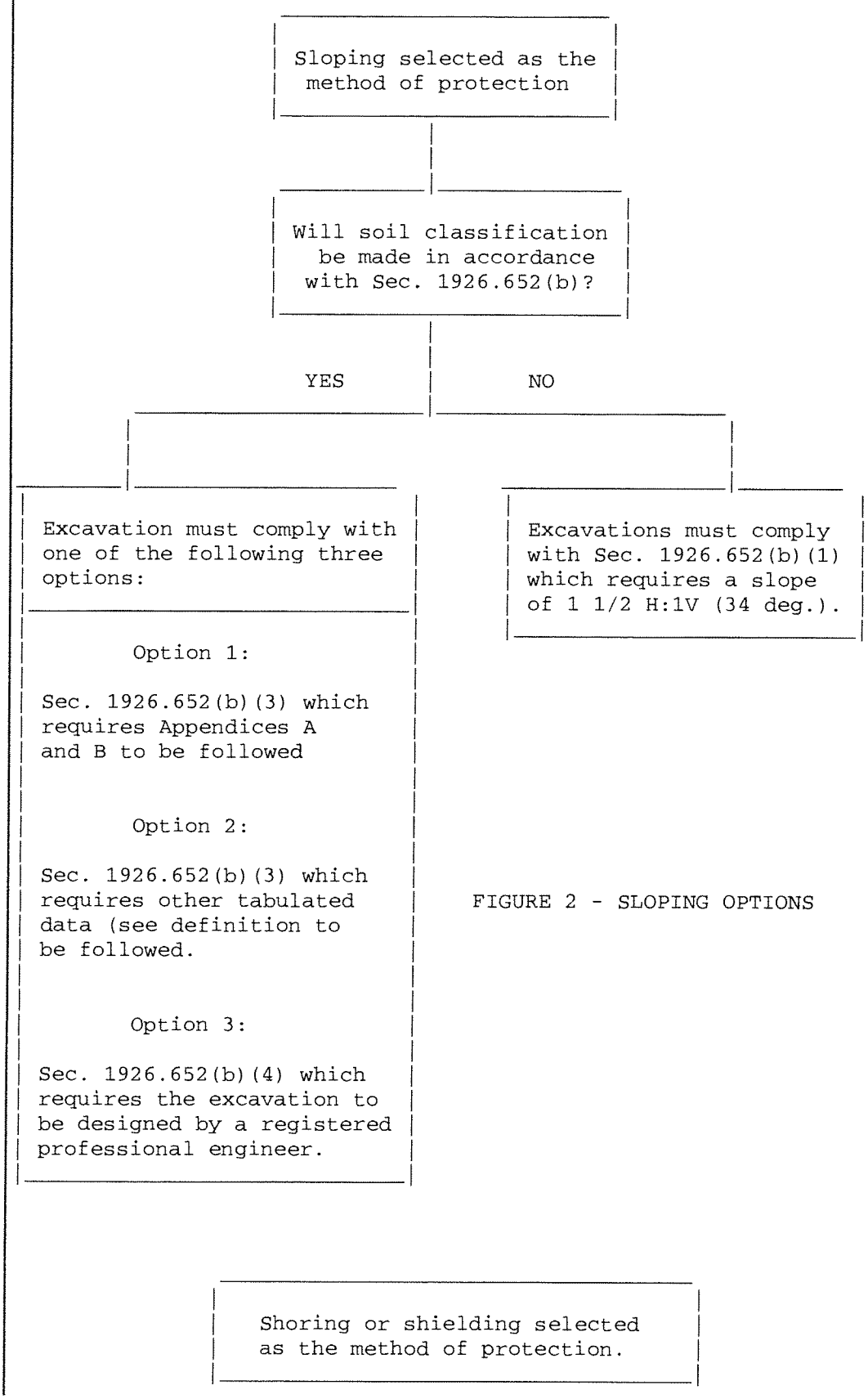


FIGURE 2 - SLOPING OPTIONS

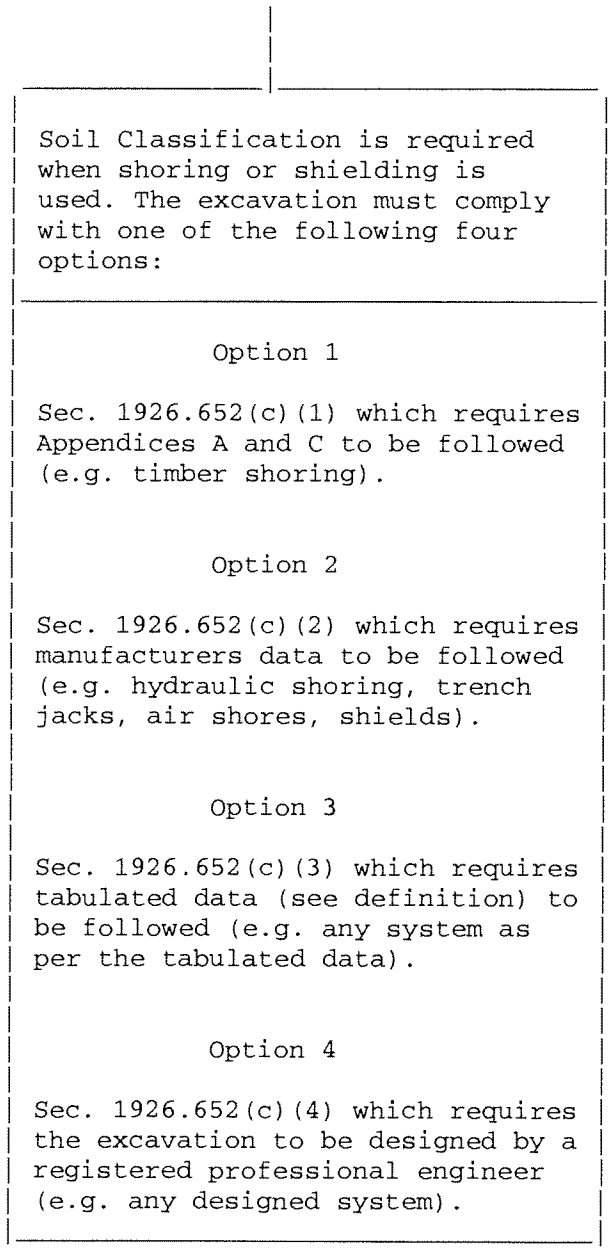


FIGURE 3 - SHORING AND SHIELDING OPTIONS

Next Standard (1926 Subpart Q)

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Appendix B

GUIDANCE ON INCIDENT INVESTIGATION

AND REPORTING

C&S ENGINEERS

3. Following the treatment and care of the injured employee, the emergency coordinator or his on-site designee and the project manager will initiate the completion of the first injury report. The Health & Safety Manager will assist.

Project Manager

1. Upon notification of a personal injury or illness on the job site, will notify C & S Engineers, Inc, President and Corporate Legal and C&S Companies Health and Safety Manager.
2. Will report to the worksite to initiate the first injury report.
3. Will report to the treatment facility to check on the well being of the injured employee. The project manager will ensure that the treatment facility is aware that this is a workers compensation case.
4. Will assist the Health and Safety Manager in the analysis of the incident.

Health & Safety Manager

1. Upon notification of the personal injury will determined if it is necessary to report to the treatment facility or the accident site, depending on the nature of the injuries and the circumstances of the accident.
2. Will report to the worksite to begin a root cause analysis investigation of the accident. The investigation may include interview of witnesses, field crew , and project manager, the photographing of the scene, reconstruction of the accident scene, using test instruments and taking measurements. The Health and Safety Manager may draw diagrams from the information learned.
3. The Health and Safety Manager will work with the owner/client as necessary to investigate the accident.
4. The Health & Safety manager will ensure that the site is safe to resume work.
5. The Health & Safety Manager shall initiate the New York State Compensation form requirements (C-2) and forward a copy of the C-2 to the C & S Engineers, Inc. controller for transmittal to the Compensation Carrier within 8 hrs of notification of the incident or by the end of the next business day.
6. The Health and Safety manager, upon completion of the investigation, will provide the Project Manager with a written investigative report (copy to the President)
7. The accident will be reviewed at the next Project Managers meeting with the intent to prevent further or similar events on other projects.
8. The Health & Safety Manager will assess the incident to determine OSHA record ability and make record if necessary on the OSHA 300 form, within five working days.

Incident Response

1.0 PURPOSE

To prevent the occurrence of accidents on C&S Engineers, Inc., work sites and to establish a procedure for investigation and reporting of incidents occurring in, or related to C&S work activities.

2.0 SCOPE

Applies to all incidents related to C&S Engineers, Inc. work activities.

3.0 DEFINITIONS

Accident - An undesired event resulting in personal injury and/or property damage, and/or equipment failure.

Fatality - An injury or illness resulting in death of the individual.

Incident - Any occurrence which results in, or could potentially result in, the need for medical care or property damage. Such incidents shall include lost time accidents or illness, medical treatment cases, unplanned exposure to toxic materials or any other significant occurrence resulting in property damage or in "near misses."

Incidence Rate - the number of injuries, illnesses, or lost workdays related to a common exposure base of 100 full-time workers. The rate is calculated as:

N/EH x 200,000

N = number of injuries and illnesses or lost workday cases; EH = total hours worked by all associates during calendar year. 200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

Injury - An injury such as a cut, fracture, sprain, amputation, etc. which results from a work accident or from a single instantaneous event in the work environment.

Lost Workday Case - A lost workday case occurs when an injured or ill employee experiences days away from work beginning with the next scheduled work day. Lost workday cases do not occur unless the employee is effected beyond the day of injury or onset of illness.

Recordable Illness - An illness that results from the course of employment and must be entered on the OSHA 300 Log and Summary of Occupational Injuries and Illnesses. These illnesses require medical treatment and evaluation of work related injury. For example, dermatitis, bronchitis, irritation of eyes, nose, and throat can result from work and non-work related incidents.

Recordable Injury - An injury that results from the course of employment and must be entered on the OSHA 300 Log and Summary of Occupational Injuries and Illnesses. These injuries require medical treatment; may involve loss of consciousness; may result in restriction of work or motion or transfer to another job; or result in a fatality.

Near Miss - An incident which, if occurring at a different time or in a different personnel or equipment configuration, would have resulted in an incident.

4.0 RESPONSIBILITIES

Employees - It shall be the responsibility of all C&S Engineers, Inc. employees to report all incidents as soon as possible to the HSC, regardless of the severity.

Human Resources - has overall responsibility for maintaining accident/ incident reporting and investigations according to current regulations and recording injuries/ illness on the OSHA 300 log, and posting the OSHA 300 log.

Emergency Coordinator - It is the responsibility of the Emergency Coordinator to investigate and prepare an appropriate report of all accidents, illnesses, and incidents occurring on or related to C&S Engineers, Inc. work. The Emergency Coordinator shall complete Attachment A within 24 hours of the incident occurrence.

Health and Safety Manager (HSM) - It is the responsibility of the HSM to investigate and prepare an appropriate report of all lost time injuries and illnesses and significant incidents occurring on or related to C&S Companies. The HSM shall maintain the OSHA 300 form.

Project Managers (PM) - It shall be the PM's responsibility to promptly correct any deficiencies in personnel, training, actions, or any site or equipment deficiencies that were determined to cause or contribute to the incident investigated.

5.0 GUIDELINES

5.1 Incident Investigation

The Project Manager will immediately investigate the circumstances surrounding the incident and will make recommendations to prevent recurrence. The HSM shall be immediately notified by telephone if a serious accident/ incident occurs. The incident shall be evaluated to determine whether it is OSHA recordable. If the incident is determined to be OSHA 300 recordable, it shall be entered on the OSHA 300 form.

The Project Manager with assistance from the HSM must submit to the office an incident report form pertaining to any incident resulting in injury or property damage.

5.2 Incident Report

The completed incident report must be completed by the Project Manager within 12 hours of the incident and distributed to the HSM, and Human Resources. This form shall be maintained by Human Resources for at least five years for all OSHA recordable cases. This form serves as an equivalent to the OSHA 101 form.

5.3 Incident Follow-up Report

The Incident Follow-Up Report (Attachment B) shall be distributed with the Incident Report within one week of the incident. Delay in filing this report shall be explained in a brief memorandum.

5.4 Reporting of Fatalities or Multiple Hospitalization Accidents

Fatalities or accidents resulting in the hospitalization of three or more employees must be reported to OSHA verbally or in writing within 8 hours. The report must contain 1) circumstances surrounding the accident(s), 2) the number of fatalities, and 3) the extent of any injuries.

5.5 OSHA 300A Summary Form

Recordable cases must be entered on the log within six workdays of receipt of the information that a recordable case has occurred. The OSHA log must be kept updated to within 45 calendar days.
OSHA 300 forms must be updated during the 5 year retention period, if there is a change in the extent or outcome of an injury or illness which affects an entry on a log. If a change is necessary, the original entry should be lined out and a corrected entry made on that log. New entries should be made for previously unrecorded cases that are discovered or for cases that initially weren't recorded but were found to be recordable after the end of the year. Log totals should also be modified to reflect these changes.

5.5.1 Posting

The log must be summarized at the end of the calendar year and the summary must be posted from February 1 through May 31.

5.6 OSHA 300A

Facilities selected by the Bureau of Labor Statistics (BLS) to participate in surveys of occupational injuries and illnesses will receive the OSHA 300A. The data from the annual summary on the OSHA 300 log should be transferred to the OSHA 300A, other requested information provided and the form returned as instructed by the BLS.

5.7 Access to OSHA Records

All OSHA records (accident reporting forms and OSHA 300 logs) should be available for inspection and copying by authorized Federal and State government officials.

Employees, former employees, and their representatives must be given access for inspection and copying to only the log, OSHA No. 300, for the establishment in which the employee currently works or formerly worked.

6.0 REFERENCES

29 CFR Part 1904

7.0 ATTACHMENTS

Attachment A - Incident Investigation Form
Attachment B - Incident Follow-Up Report
Attachment C - Establishing Recordability

ATTACHMENT A

INCIDENT INVESTIGATION FORM

Accident investigation should include:

Location: _____

Time of Day: _____

Accident Type: _____

Victim: _____

Nature of Injury: _____

Released Injury: _____

Hazardous Material: _____

Unsafe Acts: _____

Unsafe Conditions: _____

Policies, Decisions: _____

_____

Personal Factors: _____

_____

Environmental Factors: _____

_____

_____

ATTACHMENT B

Date _____

Foreman: _____

INCIDENT FOLLOW-UP REPORT

Date of Incident: _____

Site: _____

Brief description of incident: _____

_____

_____

_____

_____

Outcome of incident: _____

_____

_____

_____

Physician's recommendations: _____

_____

_____

_____

Date the injured returned to work: _____

Project Manager Signature: _____

Date: _____

ATTACH ANY ADDITIONAL INFORMATION TO THIS FORM

ATTACHMENT C

ESTABLISHING RECORDABILITY

1. Deciding whether to record a case and how to classify the case.

   Determine whether a fatality, injury or illness is recordable.

   A fatality is recordable if:

   - Results from employment

   An injury is recordable if:

   - Results from employment and
   - It requires medical treatment beyond first aid or
   - Results in restricted work activity or job transfer, or
   - Results in lost work day or
   - Results in loss of consciousness

   An illness is recordable if:

   - It results from employment

2. Definition of "Resulting from Employment"

   Resulting from employment is when the injury or illness results from an event or exposure in the work environment. The work environment is primarily composed of: 1) The employer's premises, and 2) other locations where associates are engaged in work-related activities or are present as a condition of their employment.

   The employer's premises include company rest rooms, hallways, cafeterias, sidewalks and parking lots. Injuries occurring in these places are generally considered work related.

   The employer's premises EXCLUDES employer controlled ball fields, tennis courts, golf courses, parks, swimming pools, gyms, and other similar recreational facilities, used by associates on a voluntary basis for their own benefit, primarily during off work hours.

   Ordinary and customary commute, is not generally considered work related.

   Employees injured or taken ill while engaged in consuming food, as part of a normal break or activity is not considered work related. Employees injured or taken ill as the result of smoking, consuming illegal drugs, alcohol or applying make up are generally not considered work related. Employee injured by un authorized horseplay is generally not considered work related, however, an employee injured as a result of a fight or other workplace violence act, may be considered work related.

Associates who travel on company business are considered to be engaged in work related activities all the time they spend in the interest of the company. This includes travel to and from customer contacts, and entertaining or being entertained for purpose of promoting or discussing business. Incidents occurring during normal living activities (eating, sleeping, recreation) or if the associate deviates from a reasonably direct route of travel are not considered OSHA recordable.

3. Distinction between Medical Treatment and First Aid.

First aid is defined as any one-time treatment, and any follow up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, etc., which do not ordinarily require medical care. Such one time treatment, and follow up visit for the purpose of observation, is considered first aid even though provided by a physician or registered professional personnel.

Medical Treatment (recordable)

a) They must be treated only by a physician or licensed medical personnel.

b) They impair bodily function (i.e. normal use of senses, limbs, etc.).

c) They result in damage to physical structure of a non superficial nature (fractures).

d) They involve complications requiring follow up medical treatment.