

DECISION DOCUMENT

Carriage Factory
Brownfield Cleanup Program
Rochester, Monroe County
Site No. C828184
December 2014



Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

Carriage Factory
Brownfield Cleanup Program
Rochester, Monroe County
Site No. C828184
December 2014

Statement of Purpose and Basis

This document presents the remedy for the Carriage Factory site, a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Carriage Factory site and the public's input to the proposed remedy presented by the Department.

Description of Selected Remedy

During the course of the investigation certain actions, known as interim remedial measures (IRMs), were undertaken at the above referenced site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or alternatives analysis (AA). The IRM(s) undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment; therefore No Further Action is the selected remedy. The remedy may include continued operation of a remedial system if one was installed during the IRM and the implementation of any prescribed institutional controls/engineering controls (ICs/ECs) that have been identified as being part of the proposed remedy for the site.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

Date

Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

Carriage Factory
Rochester, Monroe County
Site No. C828184
December 2014

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site resulted in threats to public health and the environment that

that were addressed by actions known as interim remedial measures (IRMs), which were undertaken at the site. An IRM is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before completion of the remedial investigation (RI) or alternative analysis (AA). The IRMs undertaken at this site are discussed in Section 6.2.

Based on the implementation of the IRM(s), the findings of the investigation of this site indicate that the site no longer poses a threat to human health or the environment. The IRM(s) conducted at the site attained the remediation objectives identified for this site, which are presented in Section 6.5, for the protection of public health and the environment. No Further Action is the selected remedy. A No Further Action remedy may include continued operation of any remedial system installed during the IRM and the implementation of any prescribed controls that have been identified as being part of the remedy for the site. This DD identifies the IRM(s) conducted and discusses the basis for No Further Action.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, the redevelopment or reuse of which may be complicated by the presence or potential presence of a contaminant.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

City of Rochester Public Library - Rundel Library
Attn: Florence Morris
115 South Avenue
Rochester, NY 14604
Phone: 585-428-7300

Receive Site Citizen Participation Information By Email

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The Carriage Factory site is located in an urban area at 33 Litchfield Street in the City of Rochester. A densely populated residential area is located immediately to the west and commercial and industrial properties border the remaining portions of the property.

Site Features: The main site feature is a vacant 78,000 sq. ft. 5-story brick-walled building with a basement located on the northern portion of the property. The southern portion of the site is undeveloped open space.

Current Zoning and Land Use: The site is currently inactive, but is in an area zoned by the City of Rochester as Center City District (CCD), Cascade-Canal District. This is a special use district defined in the Rochester City Code to preserve and enhance the existing heritage qualities of the area, and allows existing warehouse and industrial style buildings to be adapted to a variety of uses and functions.

Past Use of the Site: The on-site building was constructed circa 1910, and historic site uses included: manufacture of wood trim/accent-related products for the automotive industry, other automotive parts, and manufacture of clothing washers and dryers. A variety of commercial and industrial tenants have occupied the building between 1962 and 1993. The property has been reportedly vacant since 1993. Prior to 1910, the property was residential and a lumber yard.

Site Geology and Hydrogeology: Native soils on the site are identified as glacial till. Several feet of urban fill soil overlies the native soils. The fill generally consists of ash, cinders, slag, brick, concrete and other miscellaneous materials. Depth to bedrock ranges from 2 to 13 feet below ground surface. The bedrock underlying the site consists of dolostone of the Lockport Group. Groundwater occurs in overburden and bedrock and generally ranges 3 to 8 feet below ground surface and flows generally to the northeast.

Surface water drainage is generally to the south from the building. Storm water catch basins exist in the streets adjacent to the site.

A site location map is attached as Figure 1.

SECTION 4: LAND USE AND PHYSICAL SETTING

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the investigation to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the Remedial Investigation (RI) Report.

SECTION 5: ENFORCEMENT STATUS

The Applicant under the Brownfield Cleanup Agreement is a Volunteer. The Volunteer does not have an obligation to address off-site contamination. The Department has determined that this site poses a significant threat to human health and the environment and there are off-site impacts that require remedial activities; accordingly, enforcement actions are necessary.

The Department will seek to identify any parties (other than the Volunteer(s)) known or suspected to be responsible for contamination at or emanating from the site, referred to as Potentially Responsible Parties (PRPs). The Department will bring an enforcement action against the PRPs. If an enforcement action cannot be brought, or does not result in the initiation of a remedial program by any PRPs, the Department will evaluate the off-site contamination for action under the State Superfund. The PRPs are subject to legal actions by the State for recovery of all response costs the State incurs or has incurred.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- characterize site conditions;
- determine the nature of the contamination; and
- assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site, or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface

water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings or test pits are installed to sample soil and/or waste(s) identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- groundwater
- soil
- sub-slab vapor

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

Trichloroethene (TCE)	Vinyl Chloride
Tetrachloroethylene (PCE)	1,1 Dichloroethene
Lead	Total PAHs

Based on the investigation results, comparison to the SCGs, and the potential public health and environmental exposure routes, certain media and areas of the site required remediation. These media were addressed by the IRM(s) described in Section 6.2. More complete information can be found in the RI Report and the IRM Construction Completion Report.

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

Soil Removal/Cover System

To facilitate construction of the below grade utilities, basement level renovations, and cuts to create the parking lot on the southern portion of the site, approximately 8,500 tons of soil were excavated and disposed of off-site at a permitted facility. Beneath the building, VOC contaminated soils were encountered and excavated until restricted residential SCOs were achieved. Some soils beneath the building meeting SCOs but exhibiting odors were left in place. Approximately 7,500 tons of the soils excavated were from the southern portion of the site. Virtually all of the original surface soils were excavated to facilitate construction of the parking lot. Soils excavated from the southern portion of the site consisted mainly of historic fill contaminated with PAHs and lead with some VOC contamination adjacent to the building. Site excavations began in May 2013 and continued until July 2014. In the southern portion of the site a cover system was constructed consisting of a demarcation layer, with either asphalt parking or 2 feet of clean soil. Beneath the building, the cover system consists of the concrete basement slab. The site cover system meets the restricted residential use SCOs. Please refer to Figure 2 for the extent of the cover system.

In-Situ Groundwater Treatment

Three trenches were installed below the basement floor of the existing building at the top of bedrock. Each trench has 3 lengths of PVC pipe with different slotted intervals. The pipes have surface completions along the southern edge of the building to facilitate injection of sodium lactate solution. The trench layout is depicted in Figure 3. Approximately 7,000 pounds of 60% sodium lactate solution was injected into the sub-slab piping system and into the on-site monitoring wells. Injection of sodium lactate was completed in May 2014. Prior to injection, groundwater was contaminated with trichloroethene (TCE) and tetrachloroethylene (PCE) and some breakdown products. Total volatile organic chemical (VOC) concentrations ranged from non-detect (ND) to approximately 1 ppm. Subsequent groundwater monitoring has indicated that reducing conditions were present and an increase in the concentrations of breakdown products, supporting the effectiveness of the treatment program.

Sub-Slab Depressurization System

A sub-slab depressurization system and liquid boot vapor barrier system was installed beneath the building slab during construction. The system consists of a network of slotted PVC pipe installed beneath a liquid boot vapor barrier. There are 3 PVC risers that vent to the roof with a fan installed on each riser pipe. Six permanent vacuum monitoring points were installed through the basement slab and vapor barrier to allow for direct vacuum monitoring. The system was

placed into operation in September 2014. Subsequent vacuum level monitoring indicates the system is working as designed. Please refer to Figure 5 for a layout of the SSDS.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination:

Groundwater:

Post-injection groundwater monitoring indicates an increase in breakdown products. Levels of TCE near the source area have decreased from 320 ppb to non-detect (ND) while levels of cis-1,2,-DCE have increased from 81 ppb to 143 ppb and vinyl chloride levels have increased from <1 ppb to 18 ppb. A downgradient off-site well has shown PCE levels decrease from 881 ppb to 84 ppb and TCE levels decrease from 112 ppb to 35 ppb, while levels of 1,2-DCE increased from 63 ppb to 4,070 ppb and vinyl chloride increased from <1 ppb to 116 ppb. VOCs are the only contaminants of concern in groundwater. Metals and SVOCs do not exceed groundwater standards. Further investigation is required to determine the off-site nature and extent of groundwater contamination.

Soil:

On-site soil consists of 0 to 2 feet of historic fill over native soils. The majority of the historic fill was removed as part of the IRM discussed in Section 6.2. The southern portion of the site consisted of pockets of historic fill ranging in depth from 0 to 2 feet. This area of the site is currently the parking lot and covered by asphalt pavement. Native soils in the southern portion of the site are not contaminated above restricted residential SCOs. In the northern portion of the site, some residually contaminated soils which do not exceed the restricted residential SCOs remain beneath the liquid boot membrane below the atrium of the building. These soils exhibit a weathered petroleum odor and are addressed by the site management plan. The historic fill has concentrations of lead ranging from 2.5 to 2,500 ppm and levels of PAHs exceeding the restricted residential SCOs. Historic fill is covered by the building, paved surfaces or 2 feet of clean soil. To date, there has been no off-site soil sampling.

Soil Vapor:

TCE concentrations in on-site sub-slab soil vapor exceeded the guidance values for further action. TCE was detected at levels ranging from non-detect to 110,000 mcg/m³ in the sub-slab. The potential for soil vapor intrusion has been mitigated by the installation of an SSDS.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

People are not expected to come in contact with contaminated soils unless they dig below the surface materials. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. A sub-slab depressurization system (systems that ventilate/remove the air beneath the building) has been installed in the on-site building to prevent the indoor air quality from being affected by the contamination in soil vapor beneath the building. Additional investigation is needed to evaluate the potential for the inhalation of site contaminants due to soil vapor intrusion at off-site buildings.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

Based on the results of the investigations at the site, the IRM that has been performed, and the evaluation presented here, the Department has selected No Further Action as the remedy for the site. This No Further Action remedy includes continued operation of the sub-slab depressurization system and the implementation of ICs/ECs presented below as the selected remedy for the site. The Department believes that this remedy is protective of human health and the environment and satisfies the remediation objectives described in Section 6.5.

The elements of the IRM already completed and the institutional and engineering controls are listed below:

1. **Green Remediation:** Green remediation principals and techniques will be implemented to the extent feasible in the site management of the remedy as per DER-31. The major green remediation components are as follows:
 - Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
 - Reducing direct and indirect greenhouse gas and other emissions;
 - Increasing energy efficiency and minimizing use of non-renewable energy;
 - Conserving and efficiently managing resources and materials;
 - Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste.
2. **Enhanced Bioremediation:** In-situ enhanced biodegradation will continue to be employed to treat contaminants in groundwater beneath the main building on the northern portion of the site. The biological breakdown of contaminants through anaerobic reductive dechlorination will be enhanced by adding amendments to promote microbe growth via existing monitoring wells and trenches beneath the building basement slab. In the event this technology is unsuccessful other groundwater treatment technologies such as soil vapor extraction or in-situ chemical oxidation may be evaluated and implemented in the future.
3. **Cover System:** A site cover system is in place to allow for restricted residential use of the site. The cover system consists either of the structures such as buildings, pavement, sidewalks comprising the site development or a soil/fill material cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the cover system is required it will be a minimum of two feet of soil/fill material, meeting the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d) for restricted residential use. If a vegetation layer is needed that portion of

the soil of the cover system will be of sufficient quantity and quality to maintain the vegetation layer. Any soil/fill material brought to the site will meet the requirements for the identified site use as set forth in 6 NYCRR Part 375-6.7(d).

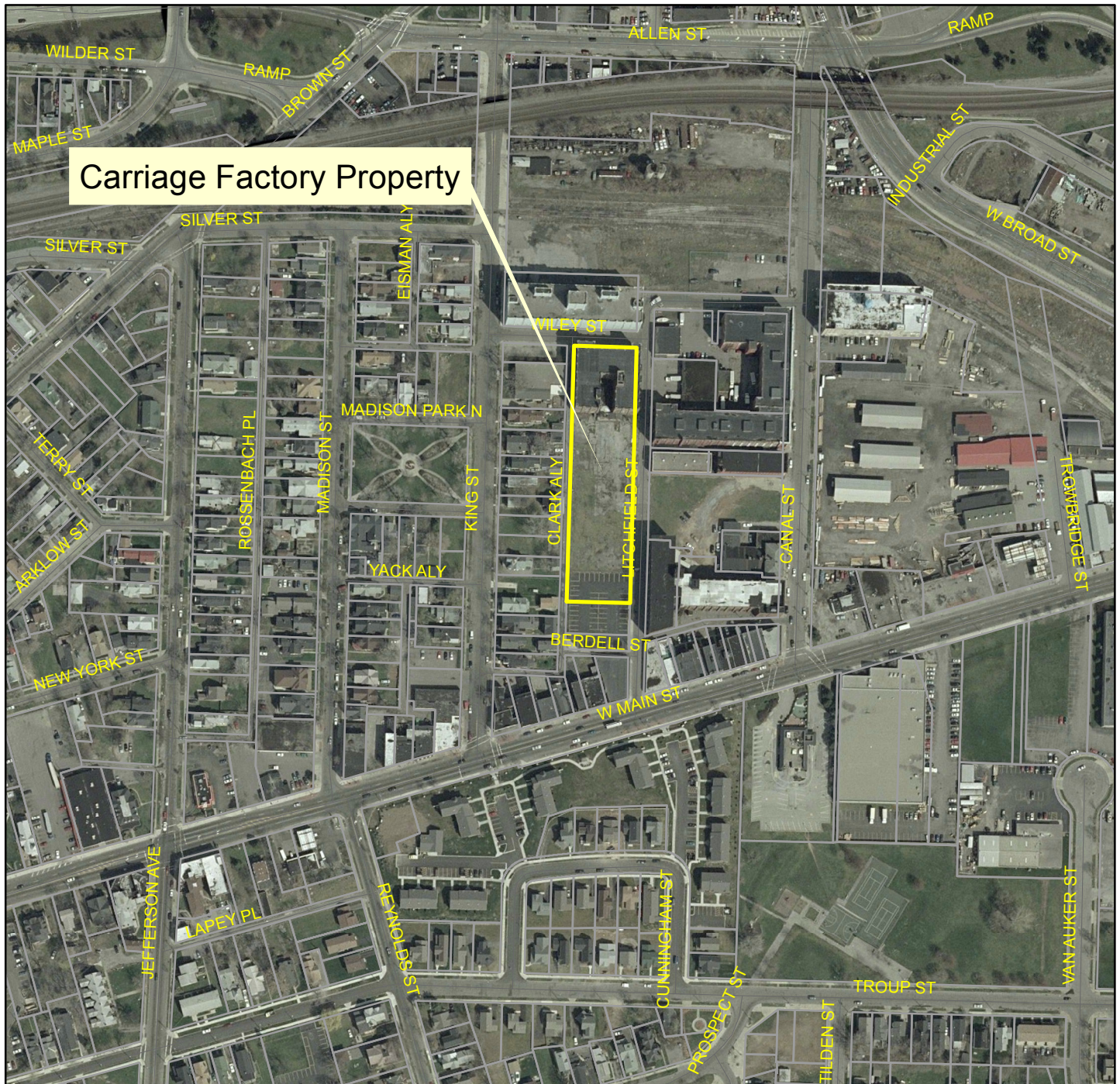
4. **Institutional Control:** Imposition of an institutional control in the form of an environmental easement for the controlled property that:
 - Requires the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
 - Allows the use and development of the controlled property for restricted residential, commercial and industrial uses as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
 - Restricts the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH;
 - Requires compliance with the Department approved Site Management Plan.
5. **Site Management Plan:** A Site Management Plan is required, which includes the following:
 - A. An Institutional and Engineering Control Plan (IC/EC Plan) that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:
 - Institutional Controls: The Environmental Easement, site use restrictions, and groundwater use restriction as presented in Item#2.
 - Engineering Controls: Cover system as presented in Item #3, the sub-slab depressurization system installed during the IRM, and groundwater remediation system as presented in item #2.

The SMP plan includes, but may not be limited to:

- An Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
 - Descriptions of the provisions of the environmental easement including any land use and groundwater use restrictions;
 - A provision for evaluation of the potential for soil vapor intrusion for any buildings developed on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
 - Provisions for the management and inspection of the identified engineering controls;
 - Maintaining site access controls and Department notification; and
 - The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
- B. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
 - Monitoring of groundwater to assess the performance and effectiveness of the remedy;
 - A schedule of monitoring and frequency of submittals to the Department; and
 - Monitoring for vapor intrusion for any buildings developed on site as may be required by the Institutional and Engineering Control Plan discussed above.

- C. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:
- compliance monitoring of treatment systems to ensure proper O&M as well as providing the data for any necessary permit or permit equivalent reporting;
 - maintaining site access controls and Department notification; and
 - providing the Department access to the site and O&M records.

Carriage Factory
33 Litchfield Street
Rochester, New York



NYSDEC - August 2013

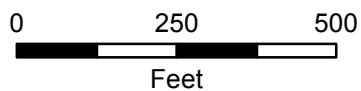
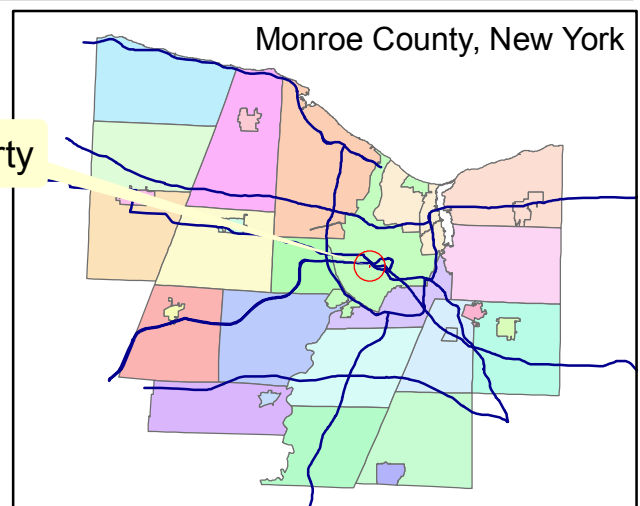


Figure 1

Carriage Factory Property








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Consultants

ENGINEERING CONTROLS:

<u>SYMBOL</u>	<u>DESCRIPTION</u>
	AREAS WITH CONCRETE CAP
	AREAS WITH ASPHALT CAP
	AREAS OF GRASS AND/OR LANDSCAPING

Notes

1. PLAN ADAPTED FROM BASE PLAN BY PARRONE ENGINEERING

Revision	By	Appd.	YY.MM.DD
Issued	By	Appd.	YY.MM.DD
File Name:			
	Dwn.	Chkd.	Dsgn.
Permit-Seal			YY.MM.DD

Client/Project

CARRIAGE FACTORY SPECIAL NEEDS APARTMENTS, L.P.
ALTERNATIVES ANALYSIS REPORT AND REMEDIAL ACTION WORK PLANBROWNFIELD CLEANUP PROGRAM
FORMER CARRIAGE FACTORY

33 LITCHFIELD STREET, ROCHESTER, NY

Title

SOIL COVER AND IMPERVIOUS SURFACE CAP AREAS

Project No.
190500751

Scale
AS SHOWN

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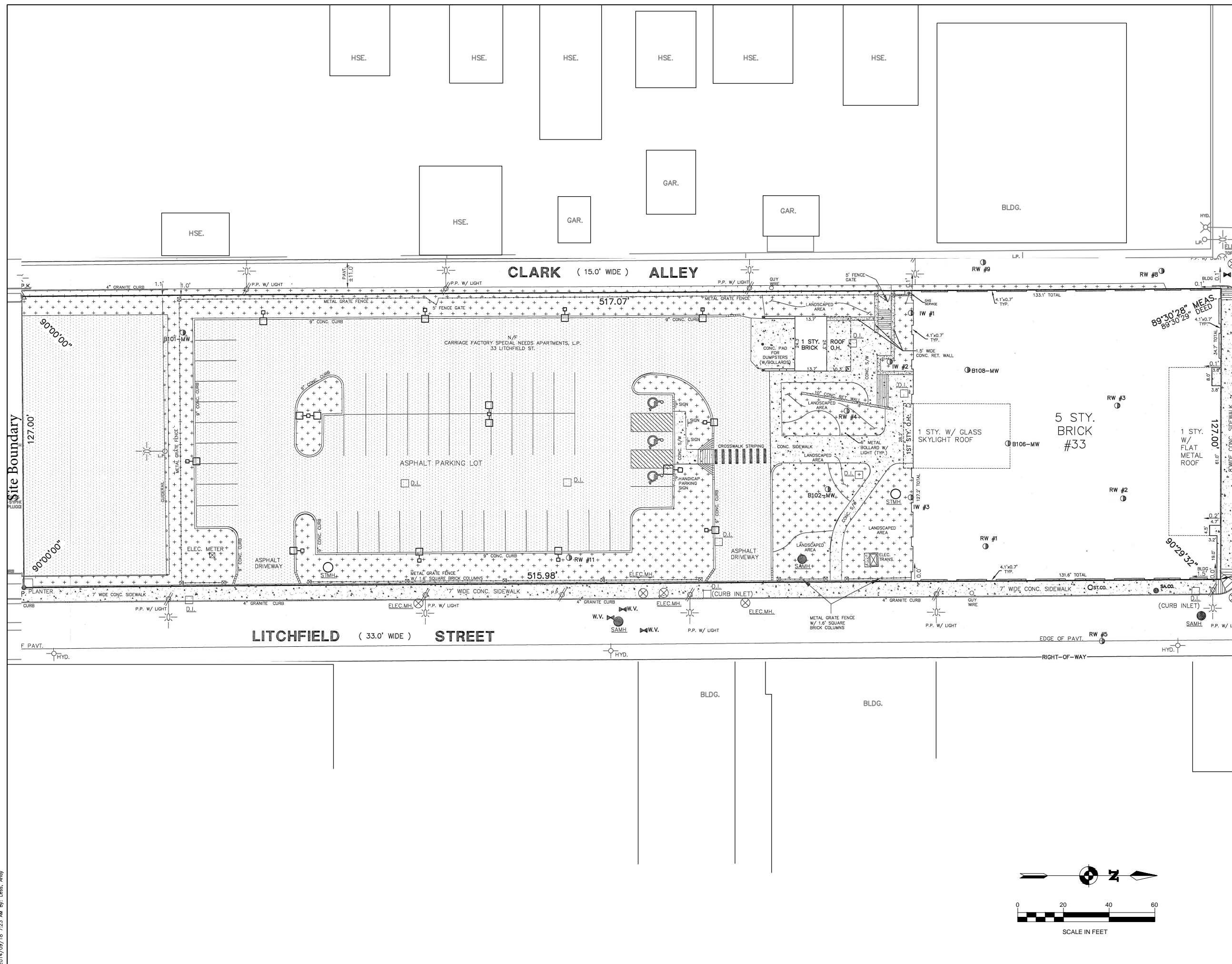
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Revision

FIGURE 2

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Diagram illustrating the components of a trench plug installation:

- BUILDING COLUMN**: The structure being installed.
- DEPTH TO THE TOP OF BEDROCK**: Indicated by a dimension line showing a depth of **3'-1.25"**.
- AREA OF BEDROCK REMOVAL**: The specific zone where the bedrock is excavated.
- APPROX. TRENCH LIMITS**: The boundaries of the excavation.
- 2" I.D. SOLID PIPE**: The pipe used for the installation.
- BENTONITE TRENCH PLUG**: The material used to seal the trench.
- 2" I.D. SLOTTED PIPE**: The pipe used for the installation.

1. EXCAVATION LIMITS AND DIMENSIONS ARE APPROXIMATE ONLY.

Client/Project

CARRIAGE FACTORY

ALTERNATIVES ANALYSIS REPORT AND REMEDIAL ACTION WORK PLAN

Title

AS-BUILT GROUNDWATER
REMEDIATION PIPING PLAN

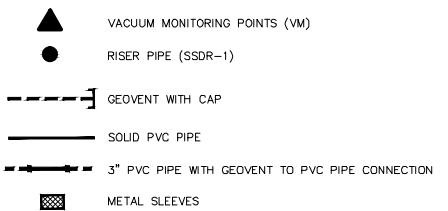
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Legend



1.) VIMS (LIQUID BOOT MEMBRANE SECTION) APPLICATION UNDER ALL CONCRETE SLAB HORIZONTAL APPLICATION

[illegible]

CARRIAGE FACTORY

ALTERNATIVES ANALYSIS REPORT AND REMEDIAL ACTION WORK PLAN

Title

SUB-SLAB DEPRESSURIZATION
SYSTEM LAYOUT

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