Site Management Plan

Former Coyne Textile Facility
140 Cortland Avenue
Syracuse, Onondaga County, New York

NYSDEC BCP Site No. C734144

CHA Project Number: 059294.001

Prepared for Remedial Party:
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Revision 1: September 21, 2021
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Revisions to Final Approved Site Management Plan:

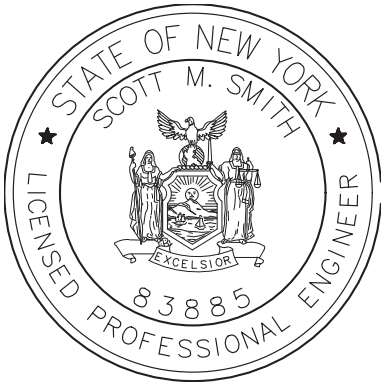
Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

CERTIFICATION STATEMENT

I Scott Smith certify that I am currently a NYS registered professional engineer as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

For CHA Consulting, Inc.:

(Professional Seal)



Scott M. Smith, P.E.
Printed Name of Certifying Engineer

Signature of Certifying Engineer

December 2, 2021
Date of Certification

083885
NYS Professional Engineer Registration Number

CHA Consulting, Inc.
Company

Associate Vice President
Title

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LIST OF ACRONYMS & ABBREVIATIONS

ASTM	American Society of Testing Materials
BASE	Building Assessment and Survey Evaluation
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BGS	Below Ground Surface
CAMP	Community Air Monitoring Program
CCR	Construction Completion Report
CERP	Community and Environmental Response Plan
CHA	CHA Consulting, Inc.
COC	Chain of Custody
DER	Division of Environmental Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
EWP	Excavation Work Plan
FER	Final Engineering Report
FSP	Field Sampling Plan
GZA	GZA Geo Environmental
HASP	Health and Safety Plan
IC	Institutional Control
IRMWP	Interim Remedial Measure Work Plan
ISCO	In Situ Chemical Oxidation
MIHPT	Membrane Interface Hydraulic Profiling Tool
MNA	Monitored Natural Attenuation
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M PLAN	Operation and Maintenance Plan
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethylene
P.E. or PE	Professional Engineer
PFAS	Per-and Polyfluoroalkyl Substances
PFE	Pressure Field Extension
PID	Photoionization Detector
PMP	Pressure Monitoring Point
PRR	Periodic Review Report
QAPP	Quality Assurance Project Plan
RDWP	Remedial Design Work Plan
REC	Recognized Environmental Concern
RI	Remedial Investigation
ROI	Radius of Influence
RSO	Remedial System Optimization
SCG	Standards, Criteria, and Guidelines

LIST OF ACRONYMS & ABBREVIATIONS (CONT.)

SCO	Soil Cleanup Objective
SMP	Site Management Plan
SSDS	Sub-slab Depressurization System
SVOC	Semi-volatile Organic Compound
TCE	Trichloroethene
TCL	Target Compound List
TOD	Total Oxygen Demand
TOGS	Technical Operation Guidance Standards
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USGS	United States Geological Survey
UST	Underground Storage Tank
VOC	Volatile Organic Compound
XDD	XDD Environmental, LLC

EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification: C734144 Former Coyne Textile 140 Cortland Ave. Syracuse, NY

Institutional Controls:	1. The property may be used for commercial use;
	2. The following ICs are also listed in Section 3.2: • The property may be used for: industrial or commercial use; • All ECs must be operated and maintained as specified in this SMP; • All ECs must be inspected at a frequency and in a manner defined in the SMP. • Groundwater and other environmental or public health monitoring must be performed as defined in this SMP; • Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP; • All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP; • Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP; • Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP; • Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement. The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated; and • Vegetable gardens and farming on the Site are prohibited; and • An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible
	3. All ECs must be inspected at a frequency and in a manner defined in the SMP.

Engineering Controls:	1. Cover system	
	2. Sub-Slab Depressurization System	
Inspections:		Frequency
1.	Cover inspection	Annually
2.	Sub-Slab Depressurization System Visual Inspection	Annually
Monitoring:		
1.	Groundwater Monitoring	Quarterly Years 1-2 and to be determined via PRR thereafter
2.	Soil Vapor Intrusion Evaluation for New Buildings	Once, 1-3 months after commissioning, during the heating season
Maintenance:		
1. Stormwater Controls maintenance		As needed
2. Fan maintenance		As needed
Reporting:		
1.	Letter Report Summary of Quarterly Data	Quarterly
2.	Periodic Review Report	The first PRR will be due 16 months after the COC has been issued. Each subsequent event will be conducted Annually thereafter.

Further descriptions of the above requirements are provided in detail in the latter sections of this Site Management Plan.

1.0 INTRODUCTION

1.1 GENERAL

This Site Management Plan (SMP) is a required element of the remedial program for the Former Coyne Textile Facility located in Syracuse, New York (hereinafter referred to as the "Site"). See Figure 1. The Site is currently in the New York State (NYS) Brownfield Cleanup Program , Site No. C734144, which is administered by New York State Department of Environmental Conservation (NYSDEC or Department).

Ranalli/Taylor St. LLC entered into a Brownfield Cleanup Agreement (BCA), as a Volunteer in September 2017 with the NYSDEC to remediate the Site. Since that time, three amendments were filed in 2021 with the NYSDEC and subsequently approved. The first amendment added seven entities to the agreement; JMA Tech Properties Holdings, LLC, JMA Tech Properties, LLC, JMA Tech LLC, XRN LLC, JMA Edge Services LLC, Prevail NY LLC, and CELLH LLC. The second amendment expanded the property boundary to include 0.65 acres of the South Clinton Street roadway into the BCA. The third amendment corrected the overall acreage of property within the BCA per the Site survey that was completed. A figure showing the Site location and boundaries of this Site is provided in Figure 2. The boundaries of the Site are more fully described in the metes and bounds Site description that is part of the Environmental Easement provided in Appendix A.

After completion of the remedial work, some contamination was left at this Site, which is hereafter referred to as "remaining contamination". Institutional and Engineering Controls (ICs and ECs) have been incorporated into the Site remedy to control exposure to remaining contamination to ensure protection of public health and the environment. An Environmental Easement granted to the NYSDEC, and recorded with the Onondaga County Clerk on October 12, 2021, requires compliance with this SMP and all ECs and ICs placed on the Site.

This SMP was prepared to manage remaining contamination at the Site until the Environmental Easement is extinguished in accordance with ECL Article 71, Title 36. This plan has been approved by the NYSDEC, and compliance with this plan is required by the grantor of the Environmental Easement and the grantor's successors and assigns. This SMP may only be revised with the approval of the NYSDEC.

It is important to note that:

- This SMP details the Site-specific implementation procedures that are required by the Environmental Easement. Failure to properly implement the SMP is a violation of the Environmental Easement, which is grounds for revocation of the Certificate of Completion (COC);

- Failure to comply with this SMP is also a violation of Environmental Conservation Law, 6 NYCRR Part 375 and the BCA (Index #C734144-05-17, Site #C734144) for the Site, and thereby subject to applicable penalties.

All reports associated with the Site can be viewed by contacting the NYSDEC or its successor agency managing environmental issues in New York State. A list of contacts for persons involved with the Site is provided in Appendix B of this SMP.

This SMP was prepared by CHA Consulting, Inc (CHA)., on behalf of Ranalli/Taylor St. LLC, in accordance with the requirements of the NYSDEC's DER-10 ("Technical Guidance for Site Investigation and Remediation"), dated May 2010, and the guidelines provided by the NYSDEC. This SMP addresses the means for implementing the ICs and/or ECs that are required by the Environmental Easement for the Site.

1.2 REVISIONS

Revisions to this plan will be proposed in writing to the NYSDEC's project manager. The NYSDEC can also make changes to the SMP or request revisions from the remedial party. Revisions will be necessary upon, but not limited to, the following occurring: a change in media monitoring requirements, upgrades to or shutdown of a remedial system, post-remedial removal of contaminated sediment or soil, or other significant change to the Site conditions. In accordance with the Environmental Easement for the Site, the NYSDEC project manager will provide a notice of any approved changes to the SMP, and append these notices to the SMP that is retained in its files.

1.3 NOTIFICATIONS

Notifications will be submitted by the property owner to the NYSDEC, as needed, in accordance with NYSDEC's DER – 10 for the following reasons:

1. 60-day advance notice of any proposed changes in Site use that are required under the terms of the BCA, 6 NYCRR Part 375 and/or Environmental Conservation Law.

2. 7-day advance notice of any field activity associated with the remedial program.

3. 15-day advance notice of any proposed ground-intrusive activity pursuant to the Excavation Work Plan. If the ground-intrusive activity qualifies as a change of use as defined in 6 NYCRR Part 375, the above mentioned 60-day advance notice is also required.

4. Notice within 48 hours of any damage or defect to the foundation, structures or EC that reduces or has the potential to reduce the effectiveness of an EC, and likewise, any action to be taken to mitigate the damage or defect.

5. Notice within 48 hours of any non-routine maintenance activities.

6. Verbal notice by noon of the following day of any emergency, such as a fire; flood; or earthquake that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, with written confirmation within 7 days that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

7. Follow-up status reports on actions taken to respond to any emergency event requiring ongoing responsive action submitted to the NYSDEC within 45 days describing and documenting actions taken to restore the effectiveness of the ECs.

Any change in the ownership of the Site or the responsibility for implementing this SMP will include the following notifications:

8. At least 60 days prior to the change, the NYSDEC will be notified in writing of the proposed change. This will include a certification that the prospective purchaser/Remedial Party has been provided with a copy of the BCA, and all approved work plans and reports, including this SMP.

9. Within 15 days after the transfer of all or part of the Site, the new owner's name, contact representative, and contact information will be confirmed in writing to the NYSDEC.

Table 1.3 on the following page includes contact information for the above notifications. The information on this table will be updated as necessary to provide accurate contact information. A full listing of Site-related contact information is provided in Appendix B.

Table 1. Notifications*

Name	Contact Information	Required Notification
Michael Belveg, NYSDEC Project Manager	315-426-7446, michael.belveg@dec.ny.gov	All Notifications
Kelly Lewandowski, NYSDEC Chief Site Control	518-402-9569, kelly.lewandowski@dec.ny.gov	Notifications 1 and 8
Joshua Cook, P.E. NYSDEC Professional Engineer 1	315-426-7411, joshua.cook@dec.ny.gov	All Notifications
Angela Martin, NYSDOH Public Health Specialist	518-402-7860, beei@health.ny.gov	Notifications 4, 6, and 7

* Note: Notifications are subject to change and will be updated as necessary.

** Note: Numbers in this column reference the numbered bullets in the notification list in this section.

2.0 SUMMARY OF PREVIOUS INVESTIGATIONS AND REMEDIAL ACTIONS

2.1 SITE LOCATION AND DESCRIPTION

The Site is located in Syracuse, Onondaga County, New York and consists of multiple parcels as described below.

- Two parcels of land which form a triangular shape located at, 1002-1022 South Salina Street/Cortland Avenue (Tax Map No. 094.-20-01.0) and 1024-1040 South Salina Street/Tallman Street (Tax Map No. 094.-20-02.0), totaling approximately 0.862-acres (0.126 and 0.0.736 acres, respectively) in size.
- One parcel of land, 140 Cortland Avenue (Tax Map No. 094.-05-06.0) totaling approximately 1.75-acres in size.
- Approximately 0.65-acres of the South Clinton Street roadway.

The Site totals an approximately 3.262-acre area and is bounded by vacant land and West Taylor Street to the north, Tallman Street and CNY Regional Transport to the south, South Salina Street, vacant land and commercial buildings to the east, and the remaining JMA Tech Properties campus to the west (see Figure 2 – Site Layout Map). The boundaries of the Site are more fully described in Appendix A –Environmental Easement. The owner(s) of the Site parcel(s) at the time of issuance of this SMP is Ranalli/Taylor St. LLC and the following entities, furthermore referred to as "and associated entities":

- JMA TECH PROPERTIES HOLDINGS LLC
- JMA TECH PROPERTIES, LLC
- JMA TECH LLC
- XRN LLC
- JMA EDGE SERVICES, LLC
- PREVAIL NY LLC
- CELLH LLC

2.2 PHYSICAL SETTING

2.2.1 Land Use

The main parcel of the Site consists of a building currently under redevelopment on the south end of the parcel, and land currently undergoing redevelopment for a new building on the north end of the parcel. Substantial completion of the property is anticipated by the end of 2021 with occupancy of the property anticipated in January 2022. The Site is zoned commercial. Site occupants consist of a 5G Manufacturing facility operated by JMA Tech Properties. The parcels across Cortland Avenue are anticipated to consist of green space and employee parking. A portion of South Clinton Street has been abandoned and will be used to facilitate pedestrian traffic between parking and green space to the west and the primary facility to the east.

The properties adjoining the Site, and in the neighborhood surrounding the Site, primarily include commercial and industrial, properties. Neighboring properties include:

- North – Vacant land and West Taylor Street
- East – Vacant land and abandoned buildings
- South – Tallman Street and Central New York Regional Transportation Authority and Centro Inc.,
- West – Additional JMA Tech Properties campus not associated with the BCA

2.2.2 Geology

According to the United States Department of Agriculture (USDA) Web Soil Survey, the soil beneath the Site is indicative of Urban Land, which is soil material having a non-agricultural, manmade surface layer that has been produced by mixing and filling in urban and suburban areas. Surficial geology consists mostly of lacustrine silts and clays. Bedrock at the Site is mapped by the United States Geological Survey (USGS) as the Syracuse formation, which consists of dolostone, shale, gypsum, and salts.

Field observations and stratigraphic cross sections provided in the Remedial Investigation Report (RI Report) (CHA, February 2019) confirmed the presence of urban fill to a depth of approximately 8 to 10 feet below ground surface (bgs). Generally, silts and clays are present beneath the urban fill to a depth of approximately 13 to 15 feet bgs. Alternating lacustrine silts and clays, then sands and gravel, were encountered beneath the fill material. At least two silt and clay layers, one below the

urban fill and one at varying depths, but approximately 26 to 30 feet bgs, are likely to act as semi-confining layers to impede the vertical transport of groundwater and contamination; however they may not act as impermeable barriers.
During remedial construction, fill material was noted to at least 18 feet bgs in the northwest corner of the original building footprint and within Treatment Zone 2C. Debris consisted of concrete blocks, bricks, wood, glass, and other demolition debris.

A soil boring location map and Geologic cross sections from the RI Report are included as Figures 3 through 6. Site specific boring logs are provided in Appendix C.

2.2.3 Hydrogeology

Based on groundwater elevations measured on April 19, 2018, the depth to groundwater at the Site is typically less than 10 feet bgs. Beneath the building, groundwater contours are at a nearly flat gradient, apart from the northwestern portion of the building where slightly elevated groundwater levels indicates a localized flow path from the north-western portion of the building toward the center of the building (southeast). Regional groundwater flow is westerly towards Onondaga Creek, located approximately 0.2 miles west of the Site. A groundwater contour map from the RI Report and South Clinton Street off-site investigation performed by GZA in 2015 is provided as Figure 6. Groundwater elevation data is provided in Table 3. Groundwater monitoring well construction logs are provided in Appendix D.

During the remedial construction seven of ten groundwater monitoring wells at the Site were decommissioned. The wells remaining include GW-105S and GW-105D, both of which are located in the parking lot to the east of Cortland Avenue. The monitoring well within the northern section of the property, GW-104, was unable to be found during the well decommissioning and, therefore, remains in place.

Site hydraulic conductivity (k) values were obtained from slug testing completed on May 4, 2018 from the clustered wells at GW-101, GW-103, and GW-105. The horizontal hydraulic conductivity of the shallow wells was calculated to be 1.89×10^{-4} centimeters per second (cm/s) via geometric mean, with all values from individual tests ranging between 1.56×10^{-5} cm/s (GW-101I) to 5.21×10^{-4} cm/s (GW-103D). A slug test analysis was not completed for the data sets collected from GW-101D because water levels did not stabilize within 1.5 hours and the test was cancelled.

Observations made during subsurface remedial investigation activities indicate that unconsolidated native material beneath the Site is composed of lacustrine silts/clays alternating with sand and gravel. Hydraulic conductivity values of individual strata likely vary by multiple orders of magnitude. Literature-derived hydraulic conductivity values for fine-grained sand typically range from 2.01 x 10^{-6} cm/s to 2.01 x 10^{-4} cm/s (Domenico and Schwartz, 1990), and therefore, the calculated geometric mean hydraulic conductivity of the shallow subsurface value of 1.89 x 10^{-4} cm/s is consistent with the literature.

The Site and surrounding properties are connected to the public water system and do not rely on individual or public water supply wells.

2.3 INVESTIGATION AND REMEDIAL HISTORY

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 8.0 - References.

2.3.1 Phase I Environmental Site Assessment - 2014

A Phase I Environmental Site Assessment (ESA) was prepared in 2014 by GZA GeoEnvironmental of New York (GZA) in general accordance with the American Society for Testing and Materials (ASTM) Standard Practice E 1527-13. According to the Phase I ESA, prior to Ranalli/Tracy St., LLC's purchase of the property in 2016, the 140 Cortland Avenue property was occupied by several manufacturing facilities and a gasoline station. Various entities of Coyne Textile Services have owner the property since the mid-1930s and the property was utilized as an industrial laundering facility. Coyne Textile Services filed for bankruptcy and ceased operations in late 2015. Dry-cleaning activities using tetrachloroethylene (PCE) and Stoddard solvent (a petroleum mixture made from distilled alkanes, cycloalkanes (naphthenes) and aromatic compounds) were conducted at the property until 2000. These dry-cleaning products were noted to be stored in aboveground storage tanks (ASTs). Additionally, three underground storage tanks (USTs) were noted as being located beneath the dry-cleaning room floor (containing Stoddard solvent) and the boiler room at 140 Cortland Avenue. A gasoline filling station was present in the southern portion of the Site in the 1980s.

The former employee parking lot and park located east of the former laundering facility was owned by Coyne Textile Services from 1989-2016. Prior to Coyne Textile Services, previous Site uses

included bus storage and repairs, the Syracuse Streetcar Barn, retail stores, and a gasoline filling station (circa 1950-1970).

Based on historic use and conditions observed during the Phase I ESA, recognized environmental conditions (RECs) were identified and subsequent investigation activities were completed.

2.3.2 Initial Subsurface Investigations – 2014 and 2015

Under the direction of the previous Site owner, multiple investigations were conducted in 2014 and 2015. In short, these investigations are summarized as follows:

1. *November 2014 Phase II Subsurface Investigation by GZA:* Based on elevated photoionization detector (PID) readings, petroleum odors, black stained soil, and an oil-like sheen on groundwater samples observed during the Phase II investigation, GZA recommended additional soil and groundwater sampling to further define the extent of contamination at the Site. Additionally, it was suggested to pursue further sampling in areas where boring installation was unsuccessful, particularly where floor trenches and drains were located in the former chemical storage and distribution room, and near the laundry machines. The primary contaminants of concern identified in the subsurface soil and groundwater included chlorinated solvents (e.g., PCE and trichloroethene (TCE)) and benzene.
2. *March 2015 Phase III Subsurface Investigation by GZA:* This investigation focused on delineation of the vertical and horizontal extent of petroleum contamination near one temporary monitoring well located along the northwest side of the parking lot to the east of Cortland Avenue, and to further evaluate the soil and groundwater conditions near the boiler room and dry-cleaning area.
3. *2015 Vapor Intrusion Investigation by GZA:* A total of ten indoor air, samples were collected approximately four to five feet above the concrete floor, ten sub-slab vapor samples were collected within ten feet of the indoor air samples, and one outdoor air sample was collected from an exterior upwind location. The investigation revealed that PCE and its breakdown daughter products were present in the northern portion of the existing building on the Site where the laundering activities were conducted. The vapors were detected at concentrations that would require mitigation under New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion, dated 2006. Monitoring and/or source identification and exposure measures were determined to be necessary throughout the remainder of the Site building. GZA recommended the installation of a vapor mitigation system, to address the potential vapor intrusion conditions.

2.3.3 Remedial Investigation - 2018

Upon entering into the BCP, Ranalli/Taylor St. LLC purchased the Site and retained CHA to conduct a remedial investigation (RI) in 2018 to address data gaps and to provide the additional information

necessary to prepare an Alternatives Analysis Report (AAR). The RI used the data provided in the GZA reports to identify locations where additional investigation was required and included a geophysical survey, surface soil sampling at Coyne Park, subsurface soil sampling at 24 boring locations, the installation and groundwater sampling from six permanent groundwater monitoring wells, groundwater sampling from three existing permanent monitoring wells, indoor air sampling at two locations, and vapor intrusion sampling from six temporary sub-slab vapor points. The following summarizes the findings of the investigation:

- Human exposure to Site media such as soil and groundwater is limited due to the Site being primarily covered with buildings and paved asphalt parking areas and the presence of municipal water and sewer at and in the vicinity of the Site.
- The presence of two silty clay layers (beneath the fill material and at a depth of approximately 26 to 30 feet bgs) which have a relatively low hydraulic conductivity and have acted as a confining later to impede the vertical migration of contamination into the more permeable sand and gravel layers at depth.
- Subsurface soils are impacted with volatile organic compounds (VOCs) exceeding the Part 375 Commercial soil cleanup objectives (SCOs) in the approximate location of historical USTs near the northwest corner of the building (Source Area).
- Semi-volatile organic compounds (SVOCs) were not detected in soil at concentrations exceeding the Part 375 Commercial SCOs since 2014. These historical exceedances were located beneath the northeastern portion of building and the former employee parking area.
- Metals in soil, detected at concentrations exceeding the Part 375 Commercial SCO, were located beneath the central portion of the building (barium in 2018) and the former employee parking lot area (arsenic in 2014).
- Polychlorinated biphenyls (PCBs) were detected at concentrations less than the Part 375 Commercial SCO beneath the central/northern portion of the building.
- VOCs, including PCE, were detected at concentrations exceeding the Class GA ambient water quality standards provided in the NYSDEC's Division of Water Technical and Operational Guidance Series *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (TOGS 1.1.1) in groundwater. The highest concentrations of VOCs were adjacent to or downgradient of where historical USTs containing dry cleaning solvents were reportedly "closed in place". However, there was a lack of appropriate closure documentation for these USTs.
- Breakdown "daughter" products of PCE, including TCE, 1,2-dichloroethene (1,2-DCE), and vinyl chloride, were detected in groundwater beneath the building at concentrations exceeding TOGS 1.1.1 and are considered the contaminants of concern for the Site.
- A plume of VOC groundwater contamination originates from the northwestern portion of the building and has spread laterally beneath the building. This investigation was completed at a time of year when the groundwater table is typically high. Additionally, the location of physical structures beneath the slab are not well known. While there are many floor drains

and vaults visible along the north end of the building, there is the potential that additional vaults or drains may be present throughout the building that have been filled in place and could be potential preferential pathways influencing the direction of groundwater flow beneath the slab.

- Metals, including aluminum, iron, magnesium, and manganese, were detected in groundwater at concentrations exceeding the TOGS 1.1.1. These compounds are commonly identified in groundwater and are relatively non-toxic.
- Per-and polyfluoroalkyl substances (PFAS) and 1,4-dioxane were detected at select groundwater monitoring wells.
- Elevated concentrations of PCE and TCE were identified in all ambient vapor and sub-slab vapor points. As a result, the sub-slab vapor and indoor air quality in the Building has been impacted by soil vapor intrusion. According to the NYSDOH Decision Matrices (including the May 2017 updates), mitigation was the recommended action.
- Soil vapor points in the employee parking lot and asphalt area to the north of the building were not found to have contaminants associated with the NYSDOH Decision Matrices. Therefore, the parking areas are not impacted by soil vapor intrusion.

Four areas of concern (AOCs) were identified and are shown on Figure 7:

- Former UST Area/Source Area
- Site-wide Groundwater
- Office Vapor (southern third of the building)
- Warehouse Vapor (northern two-thirds of the building)

Based on the RI and the proposed Site redevelopment plans, CHA recommended the development of an interim remedial measure work plan (IRMWP) to address the soil contamination in the Source Area as well as to mitigate the soil vapor intrusion in both the Office and Warehouse areas.

2.3.4 Source Removal IRM – June 2019

A Source Removal IRMWP (CHA, May 2019) was approved by the NYSDEC in June 2019 that addressed contaminant source removal via excavation within the Former UST/Source Area. In late June 2019, three USTs within the Former UST/Source Area were removed and transported off-Site to a disposal facility, along with approximately 253.9 tons of contaminated soil and cementitious material used to close the tanks in-place. Excavation of contaminated soil within the area was limited to maintain structural integrity of the building. Prior to backfilling, confirmation samples were collected along the sidewalls and bottom of the excavation, and indicate residual contamination

exceeding Commercial SCOs remains. A complete summary of the work can be found within the Construction Completion Report (CCR) submitted and approved by the NYSDEC in October 2019.

2.3.5 SSDS Remedial Design Work Plan – October 2020

In April 2019 diagnostic pressure field testing was conducted within the office area AOC to determine the most effective system components, pressure gradient, installation methods, and vapor extraction locations for the vapor mitigation design. Initially, CHA developed an Office Vapor IRMWP (CHA, June 2019), which was approved by the NYSDEC in June 2019 and provided a design for an active SSDS for the office portion of the building.

However, in late 2019, redevelopment plans changed and required the demolishment of the northern two-thirds of the building, raising the building floor elevation by two to five-feet, the installation of a new concrete floor in the portion of the building that remained, and the construction of a new building mostly within the footprint of the demolished portion. Therefore, no IRM work was completed for the sub-slab depressurization system (SSDS) on Site.

2.3.6 Alternatives Analysis Report

In March 2020 an Alternatives Analysis Report (AAR) was prepared to develop and evaluate the remedial alternative(s) which would best address the Site-specific environmental conditions and AOCs at the Site. The report established remedial goals and action objectives for the Site, screened several remedial alternatives for the treatment of the four AOCs and provided an in-depth analysis of a select number of alternatives based on the nine criteria defined in NYSDEC's Division of Environmental Remediation Program Policy 10 (DER-10).

Ultimately Alternative 3, Source Area treatment with soil mixing and in-situ chemical oxidation (ISCO), and Plume Area treatment with ISCO and groundwater recirculation, was selected as the preferred alternative. This alternative was chosen because it would provide the most effective protection of the public health and the environment given that the SCGs would be met, soil within the Source Area would be addressed and treated, and the groundwater on the Site would be remediated to TOGS 1.1.1 ambient groundwater quality standards and guidance values before being reinjected into the ground. In addition to this alternative, soil vapor intrusion would be addressed through the installation of an active sub-slab depressurization system that mitigates the entire building footprint.

2.3.7 Pre-Design Investigations

2.3.7.1 MIHPT Investigation

To more accurately define the horizontal and vertical extents of contamination within the groundwater plume, CHA conducted additional investigation using membrane interface hydraulic profiling tool (MIHPT) technology. Results from the investigation provided a more accurate depiction of the chlorinated solvent groundwater plume, as intended, but also indicated that a petroleum-based plume could also be present in one area of the Site. Upon further review of historical records and additional on-Site investigation, a 10,000-gallon UST, storing No. 6 fuel oil was located in a subterranean vault. Previous investigations primarily identified chlorinated solvents as the Site-wide contaminant of concern, so the presence of petroleum contamination identified during the MIHPT investigation altered the overall design to include the removal of the fuel oil tank and excavation of petroleum contaminated soils to the depth of groundwater in that portion of the Site, as further discussed in Section 2.3.8.

2.3.7.2 Bench Scale Testing

After the MIHPT investigation, CHA collected soil and groundwater samples from the Site for use in a bench-scale treatability study conducted by XDD Environmental, LLC (XDD). The purpose of the bench test was to evaluate permanganate stability and total oxidant demand (TOD) in the Source Area and permanganate stability and groundwater kinetics in the plume area.

Results from the bench test indicated that sodium permanganate would be a beneficial agent for remediating the groundwater plume, however the TOD within the Source Area was substantially higher than anticipated. Therefore, a second bench scale test using zero-valent iron (ZVI) was conducted. Results from the ZVI bench scale test determined that it would be an effective remedial agent within the Source Area.

2.3.7.3 Groundwater Kinetics

As mentioned previously, ISCO using recirculation was proposed for treating the groundwater plume. In a recirculation system, groundwater is extracted and mixed with a chemical oxidant in an aboveground treatment tank. The extracted groundwater and the oxidant are allowed sufficient contact time to treat the contaminants before re-injection into the subsurface. The minimum residence time will vary depending on the oxidant concentration and the concentration of target

contaminant within the groundwater. To determine the residence time and quantity of oxidant required, XDD tested the kinetics of Site groundwater with three concentrations of sodium permanganate. Results indicated the lowest concentration of sodium permanganate (5 grams per liter (g/L)) was capable of reducing the concentration of target contaminants to below the analytical method detection limit in the shortest amount of time.

2.3.7.4 Groundwater Recirculation Pilot Test

After the completion of the MIHPT investigation, CHA conducted a pilot test by installing two pilot test wells (wells PT-MW-01 and PW-MW-02) at representative areas within the target groundwater treatment zone. Additionally, a piezometer (PT-PZ-01) was installed approximately 6.2 feet southeast of well PT-MW-02 in order to monitor drawdown or mounding in the subsurface. The previously installed well GW-102 was used for the same purpose adjacent to well PT-MW-01 and was located approximately 13.7 feet southwest of the test well. The objectives of the pilot test were to evaluate Site-specific hydraulics to develop full-scale design parameters including:

- Injection and extraction radius of influence (ROI) to determine the number and spacing of injection and extraction wells.
- Achievable injection and extraction rates (without significant mounding or drawdown) to determine estimated duration, cost of the permanganate application, and identify potential failure points (i.e., oxidant surfacing or short-circuiting).
- Potential impact of subsurface heterogeneities that may influence chemical distribution.

Overall, no significant mounding or draw-down and short-circuiting were encountered during the pilot study. The results indicate that both the injection and extraction rates of 4 gallons per minute (gpm) or more was sustainable and could be used for the design of the full-scale system. CHA did not expect more significant groundwater mounding or drawdown due to the fact that injection and extraction would be performed simultaneously during full scale operations.

2.3.8 Remedial Design Work Plan

The Remedial Design Work Plan (RDWP) was finalized in July 2020 and provided the plan and methodology for implementing the remedial work. Additionally, the full set of design plans were appended to the RDWP. In summary the RDWP:

- Established three primary treatment zones as shown on Figure 8:
    - TZ-1 – removal of a suspected 10,000-gallon No. 6 fuel oil tank and the excavation and disposal of approximately of petroleum contaminated soil

  - TZ-2 – in-situ soil mixing of approximately 2,035 cubic yards of soil with ZVI
  - TZ-3 – groundwater recirculation with approximately 29,000 pounds of sodium permanganate injected over an approximately 20,000 square-foot area.
- Established work zones protective of worker health and safety
- Provided remedial action project plans such as:
  - Health and Safety Plan (HASP)
  - Community and Environmental response Plan (CERP) and Community Air Monitoring Plan (CAMP)
  - Field Sampling Plan (FSP)
  - Quality Assurance Project Plan (QAPP)
  - Monitoring Well Decommissioning Plan
- Established waste characterization and fluids management requirements
- Provided details on confirmation sampling
- Identified the requirements for soil vapor mitigation
- Included construction drawings for the implementation of each remedial technology

2.3.9 Sub-Slab Depressurization System Remedial Design Work Plan

At the time of the submittal of the RDWP, the Site redevelopment plans, more specifically building plans, had not yet been finalized. The SSDS Remedial Design Work Plan was prepared as a supplement to the Remedial Design Report (June 2020) to address the vapor mitigation system that was to be installed at the Site to address potential soil vapor intrusion associated with remaining contamination within the building footprint. The design includes vapor barrier across the entire building footprint and five sub-systems, each of which have a system fan and distinct exhaust stack through the roof of the building. The SSDS can be operated in its entirety or in any combination of sub-systems, thus enabling certain sub-systems to be shut down over time upon NYSDEC and NYSDOH approval.

2.3.10 Supplemental Remedial Investigation Report

Ranalli/Taylor St. retained CHA to conduct a supplemental investigation of the South Clinton Street right-of-way in December 2020 with the intention of adding 0.65-acres to the BCA. CHA collected subsurface soil samples and groundwater samples. The investigation is detailed further in the

Supplemental RI Report (CHA, August 2021). Based on the results of the investigation, CHA concluded the following:

- Chlorinated VOC contamination in exceedance of Unrestricted Use SCOs was detected in soil sample SOIL-SB-126 which was collected directly downgradient of the contamination identified on the Former Coyne Textile Facility BCP (specifically Treatment Zone TZ-2 that was remediated in October 2020). The adjacent soil samples did not exceed Unrestricted Use SCOs for CVOCs, so the exceedance associated with this sample appears attributable to residual impacts from the upgradient source and not considered a separate "hot spot" necessitating additional active remediation.
- The chlorinated VOCs observed in the groundwater samples collected from monitoring wells MW-5A, MW-6A, MW-7A, TMW-101, TMW-112 are likely impacts from the migration of contamination of the source area and plume on the Former Coyne Textile Facility property.
- The exposure to Site media is limited due to the Site being primarily covered with paved asphalt roadway and the presence of municipal water at and in the vicinity of the Site. Redevelopment of this portion of the Site includes sidewalks, pavement, and limited vegetated areas. Buildings are not proposed on this portion of the Site at this time.

2.4 REMEDIAL ACTION OBJECTIVES

The Remedial Action Objectives (RAOs) for the Site as listed in the Decision Document dated July 7, 2020 are as follows:

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.
- 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.

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.

2.5 REMAINING CONTAMINATION

2.5.1 Soil

Following the completion of the Source Removal IRM that was completed in 2019, four (4) sidewall and two (2) bottom soil samples were collected from the excavation. Results indicated elevated levels of PCE remaining in the southern sidewall and one bottom sample above commercial SCOs. This area was further remediated as part of TZ-2 during the Remedial Construction (completed in 2020) via in-situ soil mixing with zero-valent iron injection (Figure 4).

Additionally, following the completion of remedial activities in TZ-1 (excavation of petroleum tanks), confirmatory samples were collected from the bottom and sidewalls of the excavation (Figure 9). A total of ten (10) bottom and seven (7) sidewall samples were collected upon completion of the excavation. Analytical results show low levels of acetone, 2-butanone, benzene, and vinyl chloride above the Unrestricted Use SCOs but below the Commercial Use SCO.

Lastly, as the Site is actively being redeveloped, Figure 10 shows the limits of infrastructure excavation that occurred on the Site outside of the remedial action.

Table 3 of the FER and Figure 11 of this SMP summarize the results of all soil samples collected that exceed the Unrestricted Use SCOs at the Site after completion of remedial action. As seen on Figure 11, low levels of 2-butanone, acetone, vinyl chloride and polycyclic aromatic hydrocarbons (PAHs) were detected in confirmatory samples collected across the Site.

Additionally, soil results collected as part of the Supplemental Remedial Investigation indicate low levels of acetone, lead, mercury, DCE, PCE, and TCE above Unrestricted Use SCOs but below Commercial Use SCOs remain in the former South Clinton Street roadway.

2.5.2 Groundwater

In addition to the groundwater samples collected from the two temporary wells installed as part of the SRIR, samples were also collected from the three permanent wells installed historically. Groundwater results from the sampling are shown on Figure 12 and Table 6 of the SMP. The full data report is included in the SRIR and summarized below:

- Two or more chlorinated VOCs including Site contaminants of concern PCE (0.92 to 160 ppb), TCE (2.7 to 96 ppb), cis-1,2-DCE (22 to 2,200 ppb), trans-1,2-DCE (0.7 to 130 ppb), 1,1-DCE (1.3 to 8.2 ppb) and vinyl chloride (1.2 to 2,000 ppb) were detected at concentrations exceeding TOGS 1.1.1 in groundwater samples collected from monitoring wells MW-5A, MW-6A, MW-7A and TMW-112.
- Bromomethane was detected in groundwater samples collected from wells MW-6A, MW-7A, and TMW-112.
- Benzene was detected in the groundwater sample collected from well TMW-101. Benzene is typically associated with petroleum contamination.

SVOCs:

- The SVOCs benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd) pyrene were detected at concentrations exceeding TOGS 1.1.1 in groundwater samples collected from wells MW-5A, TMW-101 and TMW-112. These compounds are PAHs and are generally associated with petroleum products.

PCBs:

- PCBs were not detected in exceedance of applicable TOGS 1.1.1 groundwater standards in the monitoring wells sampled.

Metals:

- Multiple metals were detected in groundwater samples from across the Site. Arsenic, barium, cadmium, and selenium were detected at concentrations exceeding TOGS 1.1.1 in at least one of the seven wells sampled. Lead was more widespread and detected at concentrations exceeding TOGS 1.1.1 in samples collected from wells MW-5A and MW-7A. However, the levels detected are typical for soils sampled in an urban setting.

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Additional groundwater samples will be collected as part of the first quarterly sampling event after the issuance of the Certificate of Completion. These results will be provided to the NYSDEC in a letter report quarterly as well as, annually in a Periodic Review Report (PRR).

2.5.3 Soil Vapor

Soil vapor samples have not been completed post-remedy prior to the preparation of this SMP. Upon building completion, soil vapor testing will be completed, and results will be provided to NYSDEC and NYSDOH as detailed in the approved SSDS Design Report. In summary, the system was installed in accordance with the SSDS Remedial Design and includes venting stone, vapor barrier (Figure 12), horizontal and vertical piping, mitigation fans, and alarms (see Section 3.3.2 for additional detail) as shown on the as-built drawings included in Appendix K. The post mitigation sampling will be conducted in accordance with Section 4.3.1 of the 2006 NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York.* As indicated in the guidance document there is the potential for interferences of Site-specific and building-specific indoor air interferences caused by the off-gassing of volatile chemicals in new building materials. Post-mitigation sampling will be conducted in accordance with the schedule listed in the Executive Summary. Additional soil vapor sampling will be conducted within the South Clinton Street roadway if deemed necessary and will be performed under a NYSDEC/NYSDOH approved work plan.

3.0 INSTITUTIONAL AND ENGINEERING CONTROL PLAN

3.1 GENERAL

Since remaining contamination exists at the Site, Institutional Controls (ICs) and Engineering

Controls (ECs) are required to protect human health and the environment. This IC/EC Plan describes the procedures for the implementation and management of all IC/ECs at the Site. The IC/EC Plan is one component of the SMP and is subject to revision by the NYSDEC project manager.

This plan provides:

- A description of all IC/ECs on the Site;
- The basic implementation and intended role of each IC/EC;
- A description of the key components of the ICs set forth in the Environmental Easement;
- A description of the controls to be evaluated during each required inspection and periodic review;
- A description of plans and procedures to be followed for implementation of IC/ECs, such as the implementation of the Excavation Work Plan (EWP) (as provided in Appendix E for the proper handling of remaining contamination that may be disturbed during maintenance or redevelopment work on the Site; and
- Any other provisions necessary to identify or establish methods for implementing the IC/ECs required by the Site remedy, as determined by the NYSDEC project manager.

3.2 INSTITUTIONAL CONTROLS

The NYSDEC has defined an institutional control as "any non-physical means of enforcing a restriction on the use of real property that limits human and environmental exposure, restricts the use of groundwater, provides notice to potential future owners, operators, or members of the public, or prevents actions that would interfere with the effectiveness of a remedial program or with the effectiveness and/or integrity of operation, maintenance, or monitoring activities at or pertaining to a remedial Site."

A series of ICs is required by the Decision Document to: (1) implement, maintain and monitor Engineering Control systems; (2) prevent future exposure to remaining contamination; and, (3) limit the use and development of the Site to commercial and industrial uses only. Adherence to these ICs on the Site is required by the Environmental Easement and will be implemented under this SMP. ICs identified in the Environmental Easement may not be discontinued without an amendment to or extinguishment of the Environmental Easement. The IC boundaries are shown on Figure 2. These ICs are:

- The property may be used for: industrial, commercial, or less restrictive use;
- All ECs must be operated and maintained as specified in this SMP;
- All ECs must be inspected at a frequency and in a manner defined in the SMP.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Onondaga County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department.
- Groundwater and other environmental or public health monitoring must be performed as defined in this SMP;
- Data and information pertinent to Site management must be reported at the frequency and in a manner as defined in this SMP;
- All future activities that will disturb remaining contaminated material must be conducted in accordance with this SMP;
- Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in this SMP;
- Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical component of the remedy shall be performed as defined in this SMP;
- Access to the Site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by the Environmental Easement.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area within the IC boundaries noted on Figure 2, and any potential impacts that are identified must be monitored or mitigated; and
- Vegetable gardens and farming on the Site are prohibited; and
- An evaluation shall be performed to determine the need for further investigation and remediation should large scale redevelopment occur, if any of the existing structures are demolished, or if the subsurface is otherwise made accessible.

3.3 ENGINEERING CONTROLS

3.3.1 Cover and Cap

Exposure to remaining contamination at the Site is prevented by a cover system placed over the Site. This cover system is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete-covered sidewalks, and concrete building slabs. Figure 13 presents the location of the cover system and applicable demarcation layers. The Excavation Work Plan (EWP) provided in Appendix E outlines the procedures required to be implemented in the event the cover system is breached, penetrated or temporarily removed. Procedures for the inspection of this cover are provided in the Monitoring and Sampling Plan included in Section 4.0 of this SMP. Any work conducted pursuant to the EWP must also be conducted in accordance with the procedures defined in a Health and Safety Plan (HASP) and associated Community Air Monitoring Plan (CAMP) prepared for the Site and provided in Appendices F and G, respectively. Any disturbance of the Site's cover system must be overseen by a qualified environmental professional as defined in 6 NYCRR Part 375, a Professional Engineer (PE) who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State.

3.3.2 Sub-Slab Depressurization Systems

As mentioned previously, five sub-systems comprise the SSDS under the existing building footprint. The purpose of these systems is to prevent vapor intrusion from entering into continuously occupied spaces. Two of the systems are located within the southern portion of the building and three of the systems are located on the north end of the building, as shown in Appendix K. While post-mitigation testing is typically limited to indoor air monitoring, permanent sample ports are located in discrete areas of the building, should the need arise to collect sub-slab samples in the future.

The SSDS was commissioned in October 2021. The system was installed in accordance with the Remedial Design Report dated November 6, 2020 which was approved by NYSDEC and NYSDOH in a letter dated November 12, 2020. The SSDS consists of the following components:

- 5 sub-slab systems (two within the 1985 building and three in the newly constructed 2020 building) which each consist of the following:
    - Horizontal pipes (sub-slab collection pipes):
        - 4-inch diameter perforated Schedule 40 polyvinyl chloride (PVC) pipe run horizontally at the locations shown on Drawings V-1a and V-1b of the

drawings provided in Appendix K. An overview of the entire piping network is shown on Drawing V-1c.

- The piping is located within a 12-inch venting layer (Drawing V-3a) of crushed stone consisting of 5 percent or less fines (material passing a No. 200 sieve).
- Horizontal pipes running through foundations/grade beams are run through an 8-inch diameter Schedule 40 steel pipe sleeve. Pipe sleeves were oversized in case of any differential settlement.
- 4-inch PVC couplings were installed on either side of the foundation to allow for additional movement.
- The pipe located under the 2020 building is installed on stainless steel hangers and spaced 6-foot on-center to allow the slab to support the piping should significant settlement occur in the area of Treatment Zone 2.
- 6-inch Schedule 40 PVC tee's which connect to 6-inich solid Schedule 40-PVC pipe risers as shown on Drawings V-1a and V-1b.
    - Note, the ends of horizontal pipes that do not connect to headers include a screened cap with maximum screen opening size of ½-inch.

- Vapor Barrier (Figure 12)
    - 20-mil Class A Vapor Barrier manufactured by ISI Building Product was placed above the stone venting layer (referenced above) and beneath the concrete floor with a minimum of 12-inches overlap.
    - Vapor barrier boots and pressure sensitive seam tape were used to seal the barrier around penetrations.
- Vertical Pipes/Stacks:
    - Schedule 40 solid PVC pipes run vertically from the horizontal network through the roof of the building as shown on Drawings V-2a through V-2d.
- System Fans:
    - Each sub-system includes a fan that induces a vacuum beneath the entire floor slab and induces a pressure gradient between the sub-slab of the building an the interior space.

- There are a total of 5 Fantech Rn4 inline radon fans installed at the ends of the vertical risers that exhaust to the exterior of the building.
- Fans are considered to be operating effectively when the minimum sub-slab to room differential pressure of -0.004 inches of water column can be continuously demonstrated throughout the building.

- System Exhaust:
  - Exhaust pipes are installed at termination points approximately 4-feet above the roof and are fitted with a protective screen or cover to reduce the potential for water and vector intrusion.
  - Exhaust discharge locations are a minimum of 2-feet vertically or 10-feet horizontally from any opening to the building or air intake.

Procedures for operating and maintaining the SSDS are documented in the Operation and Maintenance Plan (Section 5.0 of this SMP). Appendix K shows the location of the ECs for the Site. As-built drawings are included in Appendix K. As-builts will also be maintained in the office of the building upon occupancy.

3.3.3 Criteria for Completion of Remediation/Termination of Remedial Systems

Generally, remedial processes are considered completed when monitoring indicates that the remedy has achieved the remedial action objectives identified by the decision document. The framework for determining when remedial processes are complete is provided in Section 6.4 of NYSDEC DER-10. Unless waived by the NYSDEC, confirmation samples of applicable environmental media are required before terminating any remedial actions at the Site. Confirmation samples require Category B deliverables and a Data Usability Summary Report (DUSR).

As discussed below, the NYSDEC may approve termination of a groundwater monitoring program. When a remedial party receives this approval, the remedial party will decommission all Site-related monitoring, injection and recovery wells as per the NYSDEC CP-43 policy.

The remedial party will also conduct any needed Site restoration activities, such as asphalt patching and decommissioning treatment system equipment. In addition, the remedial party will conduct any necessary restoration of vegetation coverage, trees and wetlands, and will comply with NYSDEC and United States Army Corps of Engineers regulations and guidance. Also, the remedial party will

ensure that no ongoing erosion is occurring on the Site.

3.3.3.1 Cover or Cap

The Site cover system is a permanent control and the quality and integrity of this system will be inspected at defined, regular intervals in accordance with this SMP in perpetuity.

3.3.3.2 Sub-Slab Depressurization System

The active SSDS will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH. In the event that monitoring data indicates that the SSDS may no longer be required, a proposal to discontinue the SSDS will be submitted by the remedial party to the NYSDEC and NYSDOH project managers.

3.3.3.3 Monitoring Wells

Groundwater monitoring activities to assess natural attenuation will continue, as determined by the NYSDEC project manager in consultation with NYSDOH project manager, until residual groundwater concentrations are found to be consistently below ambient water quality standards, the Site SCGs, or have become asymptotic at an acceptable level over an extended period. Based on the contaminant destruction expected from groundwater recirculation with sodium permanganate injection remedy completed, it is anticipated groundwater concentrations will be acceptable within a relatively short period of time. An evaluation of the groundwater contaminant levels will be evaluated in comparison to TOGS 1.1.1 quarterly and evaluated annually as part of the PRR.

Post-remedial groundwater data may require additional remedial measures beyond MNA at a future date. It is important to note that the source of the contamination has been remediated and the levels that are observed on South Clinton Street represent the downgradient extension of the plume previously defined. It is recommended that data and data trends including temporal/seasonal variations, rebound, influence of water table fluctuations, etc. from quarterly groundwater monitoring events post-COC be evaluated before determining whether additional remedial action is warranted.

Contaminant trends may indicate that target contaminants of concern such as PCE may increase, while those such as DCE and vinyl chloride increase, as that is the natural breakdown of chlorinated compounds. These trends will be evaluated as part of the quarterly monitoring events. If the trends

do not indicate effective MNA, a work plan will be developed upon the request of the NYSDEC and NYSDOH to implement additional remedial action.

In the event that monitoring data indicates that monitoring for natural attenuation may no longer be required, a proposal to discontinue the monitoring will be submitted by the remedial party. Monitoring will continue until permission to discontinue is granted in writing by the NYSDEC project manager. If groundwater contaminant levels become asymptotic at a level that is not acceptable to the NYSDEC, additional source removal, treatment and/or control measures will be evaluated.

4.0 MONITORING AND SAMPLING PLAN

4.1 GENERAL

This Monitoring and Sampling Plan describes the measures for evaluating the overall performance and effectiveness of the remedy. This Monitoring and Sampling Plan may only be revised with the approval of the NYSDEC project manager. Details regarding the sampling procedures, data quality usability objectives, analytical methods, etc. for all samples collected as part of Site management for the Site are included in the Quality Assurance Project Plan provided in Appendix H.

This Monitoring and Sampling Plan describes the methods to be used for:

- Sampling and analysis of all appropriate media (e.g., groundwater, indoor air, soil vapor, soils);
- Assessing compliance with applicable NYSDEC standards, criteria and guidance (SCGs), particularly groundwater standards and Part 375 SCOs for soil; and
- Evaluating Site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment;

To adequately address these issues, this Monitoring and Sampling Plan provides information on:

- Sampling locations, protocol and frequency;
- Information on all designed monitoring systems;
- Analytical sampling program requirements;
- Inspection and maintenance requirements for monitoring wells;
- Monitoring well decommissioning procedures; and
- Annual inspection and periodic certification.

Reporting requirements are provided in Section 7.0 of this SMP.

4.2 SITE – WIDE INSPECTION

Site-wide inspections will be performed annually. These periodic inspections must be conducted when the ground surface is visible (i.e. no snow cover). Site-wide inspections will be performed by a qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State. Modification to the frequency or duration of the inspections will require approval from the NYSDEC project manager. Site-wide inspections will also be performed after all severe weather conditions that may affect ECs or monitoring devices. During these inspections, an inspection form will be completed as provided in Appendix I – Site Management Forms. The form will compile sufficient information to assess the following:

- Compliance with all ICs, including Site usage;
- An evaluation of the condition and continued effectiveness of ECs;
- General Site conditions at the time of the inspection;
- Whether stormwater management systems, such as basins and outfalls, are working as designed;
- The Site management activities being conducted including, where appropriate, confirmation sampling and a health and safety inspection; and
- Confirm that Site records are up to date.

Inspections of all remedial components installed at the Site will be conducted. A comprehensive Site-wide inspection will be conducted and documented according to the SMP schedule, regardless of the frequency of the Periodic Review Report. The inspections will determine and document the following:

- Whether ECs continue to perform as designed;
- If these controls continue to be protective of human health and the environment;
- Compliance with requirements of this SMP and the Environmental Easement;
- Achievement of remedial performance criteria; and
- If Site records are complete and up to date.

As previously indicated, reporting requirements are outlined in Section 7.0 of this plan.

Inspections will also be performed in the event of an emergency. If an emergency, such as a natural disaster or an unforeseen failure of any of the ECs occurs that reduces or has the potential to reduce the effectiveness of ECs in place at the Site, verbal notice to the NYSDEC project manager must be given by noon of the following day. In addition, an inspection of the Site will be conducted within 5 days of the event to verify the effectiveness of the IC/ECs implemented at the Site by a qualified environmental professional, as defined in 6 NYCCR Part 375. Written confirmation must be provided to the NYSDEC project manager within 7 days of the event that includes a summary of actions taken, or to be taken, and the potential impact to the environment and the public.

4.3 POST-REMEDIATION MEDIA MONITORING AND SAMPLING

Samples shall be collected from the monitoring wells listed below on a routine basis. Sampling locations, required analytical parameters, and schedule are provided in Table 2 – Post-Remediation Inspection, Monitoring and Sampling Schedule below. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

The need for additional groundwater monitoring wells will be evaluated, depending on data that is collected during the first two years of sampling. Figure 6 shows the current monitoring well network.

Table 2. Post-Remediation Inspection, Monitoring and Sampling Schedule

Sampling Location	Analytical Parameters		Frequency	Schedule
	MNA[1]	VOCs (TO-15)		
SSDS Inspection	N/A	N/A	Annually	Annually
GW-105S, GW-105D, MW-4, MW-5A, MW-6A, and MW-6B	X		Quarterly	Years 1-2, Determined via PRR thereafter
Indoor Air Quality		X	Once, unless data indicates additional actions are needed, including additional sampling	1-3 months after commissioning, during the Heating Season (typically Nov-15 through Mar-31)

[1] – MNA parameters include – VOCs, Iron II, Sulfate, Sulfide, Methane, TOC, Carbon Dioxide, Alkalinity, Nitrate, Chloride, ORP, Dissolved Oxygen, pH, Specific Conductivity, Temperature

Detailed sample collection and analytical procedures and protocols are provided in Appendix J – Field Sampling Plan and Appendix H – Quality Assurance Project Plan.

4.3.1 Groundwater Sampling

Groundwater monitoring will be performed in accordance with Table 4.3 in Section 4.3 to assess the performance of the remedy. Modification to the frequency or sampling requirements will require approval from the NYSDEC project manager.

The network of monitoring wells has been installed to monitor upgradient, on-Site and downgradient groundwater conditions at the Site. The network of on-Site wells has been designed based on the following criteria:

- Treatment zone delineation
- Remaining contamination levels
- Site redevelopment

Table 4.3.1 summarizes the wells identification number, as well as the purpose, location, depths, diameter and screened intervals of the wells. As part of the groundwater monitoring, two upgradient wells, one on-Site wells and three downgradient wells are sampled to evaluate the effectiveness of the remedial system. The remedial party will measure depth to the water table for each monitoring well in the network before sampling. Monitoring well construction logs are included in Appendix D of this document. Groundwater monitoring wells MW-5A, MW-6A, and MW-7A represent the downgradient extension of the contaminant plume. If, during quarterly monitoring and data evaluation, it is determined that sampling further downgradient is necessary, the Volunteer will utilize applicable off-Site wells that are anticipated to be installed by NYSDEC to evaluate the effectiveness of the on-Site remedy. If these wells have not yet been installed, the Volunteer will work with NYSDEC to prepare a work plan to collect groundwater samples at applicable off-Site locations for such evaluation.

Table 3. Monitoring Well Construction Details and Elevation Measurements

Monitoring Well ID	Well Location	Coordinates (northing/ easting)	Well Diameter (inches)	Elevation (above mean sea level)			
				Casing	Top of Riser	Screen Top	Screen Bottom
MW-105S	Upgradient	1106809.677 N, 936093.2571 E	2	392.00	391.37	383.37	373.37
MW-105D	Upgradient	1106816.589 N, 936082.868 E	2	392.21	391.45	371.45	361.45
MW-4[1]	On-Site	1106936.207 N, 935801.5504 E	1				
MW-5A[1]	Down-gradient	1106965.707 N, 935758.0504 E	1				
MW-6A[1]	Down-gradient	1106999.707 N, 935747.0504 E	1				
MW-6B[1]	Down-gradient	1106999.707 N, 935747.0504 E	1				

[1] - To be surveyed during the first round of groundwater monitoring

If biofouling or silt accumulation occurs in the on-Site monitoring wells, the wells will be physically agitated/surged and redeveloped. Additionally, monitoring wells will be properly decommissioned and replaced if an event renders the wells unusable. Repairs and/or replacement of wells in the monitoring well network will be performed based on assessments of structural integrity and overall performance.

The NYSDEC project manager will be notified prior to any repair or decommissioning of any monitoring well for the purpose of replacement, and the repair or decommissioning and replacement process will be documented in the subsequent Periodic Review Report. Well decommissioning without replacement will be done only with the prior approval of the NYSDEC project manager. Well abandonment will be performed in accordance with NYSDEC's guidance entitled "CP-43: Groundwater Monitoring Well Decommissioning Procedures." Monitoring wells that are

decommissioned because they have been rendered unusable will be replaced in kind in the nearest available location, unless otherwise approved by the NYSDEC project manager.

The sampling frequency may only be modified with the approval of the NYSDEC project manager. This SMP will be modified to reflect changes in sampling plans approved by the NYSDEC project manager. Deliverables for the groundwater monitoring program are specified in Section 7.0 – Reporting Requirements.

4.3.2 Groundwater Monitoring and Sampling Protocol

All sampling activities will be recorded in a field book and associated sampling log as provided in Appendix I - Site Management Forms. Other observations (e.g., groundwater monitoring well integrity, etc.) will be noted on the sampling log. The sampling log will serve as the inspection form for the monitoring network. Additional detail regarding monitoring and sampling protocols are provided in the Site-specific Field Sampling Plan provided as Appendix J of this document.

4.3.2.1 Well Gauging

The headspace in each well riser must be screened for the presence of organic vapors using a PID immediately upon removal of the rubber gripper plug from the wells. Where feasible, the plug will only be partially removed a sufficient distance to facilitate the insertion of the PID sampling probe, to minimize ventilation head space. All PID readings will be recorded on the well sampling logs.

Water level measurements will then be taken in each well prior to monitoring well purging and sampling. All wells should be gauged within one hour period of time and prior to commencement of the purging and sampling activities that could influence the water table surface. The water levels will be obtained by measuring the distance from the marked location of the top of the well riser to the top of the water column using a water level meter.

To minimize the potential for cross-contamination between each monitoring well, all personnel involved in well gauging will don a new pair of disposable latex gloves at each well. Additionally, all water level measuring equipment that comes in contact with well water will be cleaned in accordance with the decontamination procedures described in the Field Sampling Plan (Appendix J).

4.3.2.2 Well Purging

Prior to sample collection, monitoring wells will be purged in accordance with the following protocol:

1. All personnel involved in well purging will wear a new pair of disposable latex or nitrile gloves for each well.

2. Purging will be conducted using low flow purging techniques as described in the Field Sampling Plan (Appendix J). Field parameters, including a minimum of turbidity, pH, temperature, and conductivity will be measured to evaluate well stabilization. It is highly recommended that a multi-parameter water quality instrument with a flow-through cell, such as the Horiba U-22 or the YSI 600XL, be utilized for the purging operation to maintain lower turbidity levels for the samples. Calibration of all field instruments will be conducted in accordance with the manufacturer's instructions.

3. Purging will be considered complete when three consecutive consistent readings of temperature, pH and conductivity are obtained and the turbidity is less than 50 NTUs, if possible. Readings will be considered consistent if all of the readings are within 10 percent of the previous reading(s). In the event that consistent readings are not obtained, purging will continue until a maximum of five well volumes are evacuated. In the event that recharge is insufficient to conduct the purging protocol described in Item 2 above, the well will be bailed/pumped to dryness and a sample will be collected when the well has sufficiently recovered. Dissolved oxygen and oxidation-reduction potential will also be recorded for MNA evaluation.

4. Acceptable methods of water extraction during purging include bladder pumps (e.g. QED Mircopurge or Well Wizard®), Waterra® pumps, and submersible variable-speed pumps (e.g. Grundfos Redi-Flo2). The purging method selected will be based upon the well depth, the water level in the well, and the recharge characteristics. Regardless of the purging equipment, the maximum allowable purge rate from the monitoring wells is one (1) gallon per minute.

5. All purge water will be temporarily placed into graduated five (5) gallon buckets so that the purge volume can be tracked by field personnel.

6. All purge and decontamination water will be collected and placed in/transferred to a 55-gallon drum or similar vessel. The water will then be sampled for characterization purposes. However, in no instance may the purge/decontamination water be stored on-Site in excess of 90 days.

4.3.2.3 Well Sampling

Following the purging operation, monitoring well sampling will be carried out according to the following protocol:

1. Monitoring wells will be sampled utilizing low flow rates using either a variable speed pump or a bladder pump. A flow rate of 0.1 liters per minute or less will be utilized when sampling for VOCs.

2. VOC sample bottles must be filled completely with no air bubbles.

3. Sufficient groundwater will be collected for chemical analysis. Groundwater samples will be collected in containers as specified in the QAPP.

4. Sample preservation details are presented in the QAPP. Sample containers will be prepared using washing procedures that meet or exceed the requirements of the specified methods. Sample containers will be prepared by the laboratory and shipped to the Site in sealed containers.

5. One blind duplicate sample will be collected during each monitoring event and analyzed for the same parameters as the grab samples. Additionally, a trip blank will be submitted with the laboratory cooler containing the VOCs samples and analyzed for VOCs only.

4.3.2.4 Laboratory Analysis

The groundwater samples will be submitted to a laboratory certified under the NYSDOH's ELAP for analysis following appropriate chain-of-custody protocols. To evaluate the effectiveness of MNA, each groundwater sample will be analyzed for analysis of Target compound list (TCL) VOCs by EPA Method 8260, iron II, sulfate, sulfide, methane, total organic carbon (TOC), carbon dioxide, alkalinity, chloride, and nitrate. In addition to laboratory analysis, the field collected parameters dissolved oxygen, oxidation-reduction potential, pH, and specific conductivity will also be recorded and utilized for MNA evaluation.

4.3.2.5 Equipment Decontamination

Prior to mobilization, all non-disposable field equipment will be thoroughly cleaned to remove any contaminants, such as oil, grease, mud, and other foreign matter. To avoid cross-contamination between monitoring wells, all non-disposal equipment will also be decontaminated prior to moving the equipment to each well at the Site. The required decontamination procedure for all manual sampling equipment used to collect samples for chemical analysis is:

1. Rinse equipment with tap water to remove any debris or film from equipment.
2. Wash and scrub with low phosphate detergent.
3. Thoroughly rinse with deionized or distilled water.
4. Air dry.

All decontaminated equipment will be placed on polyethylene sheeting or wrapped in aluminum foil in order to avoid contacting a contaminated surface prior to use.

4.3.2.6 Waste Handling

All purge water and decontamination derived water will be collected and temporarily stored on-Site in 55-gallon drums or similar vessels. The water will then be characterized for parameters required by the selected contractor and/or wastewater treatment facility. The requirements of the selected wastewater treatment facility must be verified prior to collection of the characterization samples and should be added to the parameter list to ensure sufficient laboratory containers are available on-Site and the laboratory is aware of all required analyses.

Once the analytical characterization is completed, the appropriate waste profiles will be generated so that the water can be disposed properly off-Site. It is anticipated that the characterization of such waste will indicate that it is a non-hazardous liquid waste that can be disposed of at a properly permitted off-Site facility under appropriate Bill of Lading or waste manifest protocols given the Site history and contaminants of concern.

Should the waste be characterized as hazardous, the Site owner will immediately submit a Notification of RCRA Subtitle C Activity to provide the United States Environmental Protection Agency notification of regulated waste activity.

Regardless of the analytical characterization results, the water must be disposed of within 90-days of collection at a properly permitted disposal facility. In no instance may the purge/decontamination water be stored on-Site in excess of 90 days. All haulers will have a valid 6 NYCRR Part 364 Permit and will only haul waste in United States Department of Transportation (USDOT) approved containers.
All gloves, PPE, sampling materials, etc. will be collected daily, placed into garbage bags (double-bagged) and disposed of as solid waste off-Site.

4.3.3 Groundwater Data Evaluation

As defined in the USEPA guidance for monitored natural attenuation (MNA), OSWER Directive 9200.4-17 *Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites* (November 1997), MNA "refers to the reliance on natural attenuation processes to achieve Site-specific remediation objectives within a time frame that is reasonable compared to that offered by other more active methods". Historically the USEPA BIOCHLOR Natural Attenuation Decision Support System has been used to evaluate the efficacy of MNA at a Site. However, this modeling software has since become outdated and cannot be run on most computers. Therefore, rather than using the more traditional BIOCHLOR model, The USGS Natural Attenuation Software (NAS) will be utilized to evaluate the groundwater data for the Site. NAS is a software package that works very similar to the BIOCHLOR model. This model can provide estimates for the required source reduction, time of stabilization and time of remediation. Data collected during the groundwater sampling events will be evaluated using this model to determine the effectiveness of MNA for the Site. Applicable parameters for the evaluation of MNA for chlorinated solvent contamination includes:

- VOCs
- Iron II
- Sulfate
- Sulfide
- Methane
- TOC
- Carbon Dioxide
- Alkalinity
- Nitrate
- Chloride
- ORP
- Dissolved Oxygen
- pH
- Specific Conductivity
- Temperature

4.3.4 Soil Vapor Intrusion Sampling

Soil vapor intrusion sampling will be performed once, initially, to assess the performance of the

remedy. SVI sampling will occur during the heating season. Additional sampling may occur if contaminants are identified that meet/exceed NYSDOH guidance values requiring mitigation. The SSDS will instead be visually inspected annually and negative pressure at each exhaust stack and pressure monitoring port (PMP) will be recorded and compared to the levels recorded during the commissioning of the system. Modification to the frequency or sampling requirements will require approval from the NYSDEC.

A pressure field extension test was conducted by Alpine Environmental Services upon SSDS startup, October 22, 2021. Results from the test are included in Appendix K and range from -0.006 inches of water column (in.-H_2O) to -0.605 in.-H_2O, which meet the required minimum sub-slab to room differential pressure of -0.004 in.-H_2O as stated in the SSDS Remedial Design Report.

To date, soil vapor intrusion sampling in the South Clinton Street roadway has not been conducted. However, this area is anticipated to be utilized as a concrete sidewalk with greenspace for the JMA Campus. Soil vapor sampling in this area will be conducted if deemed necessary by NYSDEC and NYSDOH and will be performed under an approved work plan.

Deliverables for the soil vapor intrusion sampling program are specified in Section 7.0 – Reporting Requirements.

5.0 OPERATION AND MAINTENANCE PLAN

5.1 GENERAL

This Operation and Maintenance Plan (O&M Plan) provides a brief description of the measures necessary to operate, monitor and maintain the mechanical components of the remedy selected for the Site. This Operation and Maintenance Plan:

- Includes the procedures necessary to allow individuals unfamiliar with the Site to operate and maintain the SSDS;
- Will be updated periodically to reflect changes in Site conditions or the manner in which the SSDS is operated and maintained.

This Operation and Maintenance Plan is not to be used as a stand-alone document, but as a component document of this SMP. The current SSDS and all future systems shall adhere to the requirements within this section.

5.2 OPERATION AND MAINTENANCCE OF THE SSDS

The following sections provide a description of the operations and maintenance of the SSDS. The most common way for soil vapor associated with residual volatile organic contamination to enter a building is from pressure-driven transport or diffusion. O&M of the systems is integral to maintaining the overall safety of building occupants. The SSDS must be operated continuously in all routinely occupied spaces. The fans are to be placed in secured locations on the building roof to reduce the likelihood of tampering and lockouts will be placed on all power controls to prevent accidental power termination to the units.

5.3 SSDS PERFORMANCE CRITERIA

The SSDS for vapor mitigation is designed to create a constant and continuous negative pressure of the sub-slab air with respect to the room air throughout the building. The system is designed to achieve the minimum performance criteria pressure of negative 0.004-inches of water column.

5.3.1 System Start-Up and Testing

The following items will be required at a minimum prior to occupancy of the building and any future buildings on Site:

1. Prior to startup, each of the systems will be inspected to ensure that all components of the system (e.g. piping, fan, gauges, etc.) are properly installed. Additionally, all floor penetrations and joints within the building should be checked to ensure that they have been sealed, as such leaks may impact the overall efficiency of the system. It is important that all sealants and/or concrete patches be allowed sufficient time to properly cure before system startup (minimum of 24 hours).

2. Once all checks of the system are complete, the system should be turned on and allowed to operate for at least two hours prior to further testing. During this time, another check for leaks in the system appurtenances should be made. The operator should also ensure that the pressure and vacuum gauges on the SSDS system show proper operation of the fan. Additionally, all VOC monitors and/or carbon monoxide detectors should be tested for proper operation.

3. There are two levels of performance testing for each sub-system. The first test consists of physical testing of the pressure field after a minimum of two hours of continuous operation. To evaluate the pressure field extension (PFE), fourteen PMPs have been installed throughout the building in the locations shown on the drawings in Appendix K. With the SSDS system in operation, the sub-slab pressure in each hole should be measured, one at a time. The PFE was tested October 25, 2021 and results are included in Appendix K. For future buildings, if necessary, a digital micromanometer should be utilized to monitor the PFE. While smoke tubes can be utilized to verify the drawdown effect beneath the slab, the use of a micromanometer will allow the user to verify that the minimum sub-slab pressure of -0.004 inches of water column is achieved. The ball valves installed on the piping network can be throttled/adjusted to balance the PFE as needed. If the minimum vacuum cannot be achieved at all points, the system should be inspected for leaks again. If after performing diagnostic checks the desired PFE is not achieved, it is possible that a larger fan will need to be installed.

4. After a minimum of two weeks of operation, confirmatory air monitoring will be conducted in each structure as a second level of performance testing for the SSDS. This testing will include the collection of an indoor air quality sample from the lowest occupied level within the building. Specifically, an eight-hour composite sample will be collected using a 2.7-liter SUMMA® canister to collect the sample. Additionally, one outdoor air sample should be collected upwind to serve as an ambient background reference. All samples will be submitted to a laboratory certified by the NYSDOH Environmental Laboratory Approval Program (ELAP) for analysis of VOCs via EPA Method TO-15.

   The analytical results for trichloroethene, cis-1,2-dichloroethene, 1,1-dichloroethene, carbon tetrachloride, tetrachloroethene, 1,1,1-trichloroethane, methylene chloride and vinyl chloride will be compared to the NYSDOH *Final Guidance for Evaluating Soil Vapor Intrusion in*

the State of New York (October 2006) and updated matrices (May 2017). The remaining compounds that are detected in the air samples will be compared to the 2001 USEPA *Indoor Air Building Assessment and Survey Evaluation (BASE) Database*, (90th Percentile of Indoor Air Results). However, this data set is referenced for comparison purposes only, as the values referenced in the study are not regulatory standards. While a properly designed SSDS should mitigate the potential for indoor air contaminants related to the remaining contamination on-Site, the NYSDEC and NYSDOH will work with the Site owner to provide notification to building occupants and tenants of any elevated VOC levels.

The system testing described above will be conducted if, in the course of the SSDS lifetime, the system goes down or significant changes are made to the system and the system must be restarted.

5.3.2 Routine System Operation and Maintenance

The manufacturer's recommendations for routine operation procedures for the fans are included in Appendix L. The SSDS is designed to operate continuously. The following table provides a list of general trouble-shooting guidelines for the fans:

Table 4. Fan System Trouble-Shooting Chart

Problem	Reason	Remedy
Increased sound/noise	Noise absorbing foam is damaged. The impeller may be rubbing inside the fan unit.	Replace foam. Send unit to an authorized repair facility.
Excessive Vibration	Damaged impeller. Motor and/or impeller may be dirty.	Replace impeller. Clean motor and impeller periodically.
Ambient and exhaust temperature increases	Motor and/or fan are dirty. Filters are dirty.	Clean motor and fan periodically. Replace filters.
Decreased inlet air pressure	Inlet air filter is clogged.	Clean or replace inlet filter.
Unit is very hot	Wrong wiring. Low voltage. Inlet air filter is clogged. Motor and/or fan are dirty. Operating at too high of pressure or vacuum.	Check wiring. Supply proper voltage. Clean inlet filter. Replace cartridge. Clean motor and fan periodically. Install a relive valve and pressure or vacuum gauge.
Unusual sound	Impeller is damaged or dirty.	Clean or replace impeller.

Problem	Reason	Remedy
	Bearing Failure	Send unit to an authorized repair facility.
Motor overload	Low voltage	Check power source. Check wire size and wire connections.
Unit does not start	Incorrect electrical connection or power source. Impeller is damaged.	Check wiring diagram, circuit fusing and circuit capacity. Clean and replace impeller. Install proper filtration.

The following routine equipment maintenance must be performed periodically to ensure continued operation of the SSDS:

1. Rn4 Fan unit maintenance
    a. Ensure that the fan is de-energized and rotating part shave stopped before servicing
    b. Spare parts/fans should be stored on-Site so that the fan is not out of service for more than eight hours. Temporary replacement fan(s) should be utilized for longer service timeframes.
    c. All fan maintenance will be performed in accordance with the specific manufacturer's recommendations.
    d. The motor housing and impeller should be cleaned on an annual basis, unless operating conditions dictate that need for more frequent cleanings (e.g. dusty environment).

5.3.3 Non-Routine Operation and Maintenance

The SSDS will be equipped with pressure/vacuum gauges that can be visually inspected to verify that the fans operating properly. Additionally, each SSDS will be equipped with an audible alarm that will notify building management of a malfunction.

Any damaged components critical to the operation of the SSDS (e.g. the fans, inlet/discharge piping, etc.) will be repaired or replaced within a maximum of five (5) days of discovery. Any peripherally damaged equipment (e.g. gauges, sampling ports, labeling systems, etc.) will be repaired within a maximum of 48 hours of discovery.

Should the effectiveness of the SSD system be found to be reduced either through monitoring of the pressure field or indoor air quality monitoring, diagnostic testing will be performed to determine the cause. Diagnostic testing will include checking the operation of the fans, checking the piping systems for leaks or cracks, checking the discharge pipe for obstructions, checking joints and

penetrations in the slab for leaks, etc. If the system effectiveness cannot be restored, the fan may need to be replaced.

5.3.4 System Monitoring Devices and Alarms

The SSDS has audible warning devices to indicate that the system is not operating properly. In the event that warning device is activated, applicable maintenance and repairs will be conducted, as specified in the Operation and Maintenance Plan, and the SSDS will be restarted. Operational problems will be noted in the Periodic Review Report to be prepared for that reporting period.

5.3.5 Performance Monitoring

After the SSDS startup and initial testing is complete, periodic visual monitoring of the equipment will be required to verify continued performance of the systems. The initial performance monitoring shall occur at least one week following the initial performance testing and will be conducted on an annual basis thereafter. The inspection frequency is subject to change with the approval of the NYSDEC. Unscheduled inspections, and/or sampling may take place when a suspected failure of the SSDS has been reported or an emergency occurs that is deemed likely to affect the operation of the system.

Annual performance monitoring will be documented on the SSDS Inspection Checklist included in Appendix I, and generally includes the following components:

- Inline Radon Fan
- Vacuum and pressure gauges
- Above-grade vacuum and discharge piping
- Discharge piping above roof line
- Pipe support systems
- Labeling systems
- Alarm systems
- Floor joints, penetrations, and cracks (e.g. checking of floors for potential leak points)

6.0 PERIODIC ASSESSMENTS/EVALUATIONS

6.1 CLIMATE CHANGE VULNERABILITY ASSESSMENT

Increases in both the severity and frequency of storms/weather events, an increase in sea level elevations along with accompanying flooding impacts, shifting precipitation patterns and wide temperature fluctuation, resulting from global climactic change and instability, have the potential to significantly impact the performance, effectiveness and protectiveness of a given Site and associated remedial systems. Vulnerability assessments provide information so that the Site and associated remedial systems are prepared for the impacts of the increasing frequency and intensity of severe storms/weather events and associated flooding.

During the Site permitting process with the City of Syracuse flood plain elevations were evaluated. In order to comply with codes requirements, the Site grade was increased three to five feet from the south to northern ends. The concrete floor within the southern third of the building (portion that remained) and stone was imported to increase the building grade. A new concrete floor was then poured on top of the stone. Additionally, prior to building the northern two-thirds of the building, imported stone and structural fill was used to increase the building grade. The new grades were established using the potential 100-year flood levels.

Site drainage and stormwater management controls have been installed across the Site and include underground detention at the north and south ends of the Site. The majority of the Site is currently impervious surface, and the grades are relatively flat. Erosion due to severe rain events is anticipated to be minimal. Similarly, the building was completely remodeled/new construction, and encompasses a large portion of the Site. Areas that may be impacted by wind would trees/plantings be along the former Cortland Avenue and South Clinton Street roadways that were abandoned as part of this project.

There are no long-term remedial systems that would be severely impacted by power loss. The SSDS mitigative system is connected to the backup generator power for the building and would be maintained in operation in the event of a localized power loss from the grid. Should the generator also fail, the system will still operate as a passive system during that time.

6.2 REMEDIAL SYSTEM OPTIMIZATION

A Remedial Site Optimization (RSO) study will be conducted any time that the NYSDEC or the

remedial party requests in writing that an in-depth evaluation of the remedy is needed. An RSO may be appropriate if any of the following occur:

- The remedial actions have not met or are not expected to meet RAOs in the time frame estimated in the Decision Document;
- The management and operation of the remedial system is exceeding the estimated costs;
- The remedial system is not performing as expected or as designed;
- Previously unidentified source material may be suspected;
- Plume shift has potentially occurred;
- Site conditions change due to development, change of use, change in groundwater use, etc.;
- There is an anticipated transfer of the Site management to another remedial party or agency; and
- A new and applicable remedial technology becomes available and the selected remedial program that has and continues to be implemented is not protecting the environment and public health.

An RSO will provide a critique of a Site's conceptual model, give a summary of past performance, document current cleanup practices, summarize progress made toward the Site's cleanup goals, gather additional performance or media specific data and information and provide recommendations for improvements to enhance the ability of the present system to reach RAOs or to provide a basis for changing the remedial strategy. A predefined schedule for RSO evaluation and reporting has been established for this Site (see table 5) though the RSO is not limited to this schedule.

Table 5. RSO Timeline

Activity	Timeline
Submission of draft RSO Report to NYSDEC/NYSDOH	60 days after request
Review Period	30 days post draft submission
Response to Comments	15 days post comment letter
Final Approval of RSO Report	15 days post comment letter response

The RSO study will focuses on overall Site cleanup strategy, process optimization and management with the intent of identifying impediments to cleanup and improvements to Site operations to increase efficiency, cost effectiveness and remedial time frames. Green remediation technology and principals will be considered when performing the RSO.

7.0 REPORTING REQUIREMENTS

7.1 SITE MANAGEMENT REPORTS

All Site management inspection, maintenance and monitoring events will be recorded on the appropriate Site management forms provided in Appendix I. These forms are subject to NYSDEC revision. All Site management inspection, maintenance, and monitoring events will be conducted by a qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State.

All applicable inspection forms and other records, including media sampling data and system maintenance reports, generated for the Site during the reporting period will be provided in electronic format to the NYSDEC in accordance with the requirements of Table 6 and summarized in the the Periodic Review Report.

Table 6. Schedule of Interim Monitoring/Inspection Reports

Task/Report	Reporting Frequency*
Site Inspection Report	Annually
SSDS Inspection Report	Annually
Periodic Review Report	Annually, or as otherwise determined by the Department

* The frequency of events will be conducted as specified until otherwise approved by the NYSDEC.

All interim monitoring/inspections reports will include, at a minimum:

- Date of event or reporting period;
- Name, company, and position of person(s) conducting monitoring/inspection activities;
- Description of the activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet);

- Type of samples collected (e.g., groundwater, indoor air, outdoor air, etc);
- Copies of all field forms completed (e.g., well sampling logs, chain-of-custody documentation, etc.);
- Sampling results in comparison to appropriate standards/criteria;
- A figure illustrating sample type and sampling locations;
- Copies of all laboratory data sheets and the required laboratory data deliverables required for all points sampled (to be submitted electronically in the NYSDEC-identified format);
- Any observations, conclusions, or recommendations; and
- A determination as to whether contaminant conditions have changed since the last reporting event.

Routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting maintenance activities;
- Description of maintenance activities performed;
- Any modifications to the system;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents noted (included either on the checklist/form or on an attached sheet); and,
- Other documentation such as copies of invoices for maintenance work, receipts for replacement equipment, etc., (attached to the checklist/form).

Non-routine maintenance event reporting forms will include, at a minimum:

- Date of event;
- Name, company, and position of person(s) conducting non-routine maintenance/repair activities;
- Description of non-routine activities performed;
- Where appropriate, color photographs or sketches showing the approximate location of any problems or incidents (included either on the form or on an attached sheet); and
- Other documentation such as copies of invoices for repair work, receipts for replacement equipment, etc. (attached to the checklist/form).

Data will be reported in digital format as determined by the NYSDEC. Currently, data is to be

supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link http://www.dec.ny.gov/chemical/62440.html.

7.2 PERIODIC REVIEW REPORT

A Periodic Review Report (PRR) will be submitted to the Department beginning sixteen (16) months after the Certificate of Completion is issued. After submittal of the initial Periodic Review Report, the next PRR shall be submitted annually to the NYSDEC project manager or at another frequency as may be required by the NYSDEC project manager. In the event that the Site is subdivided into separate parcels with different ownership, a single Periodic Review Report will be prepared that addresses the Site described in Appendix A -Environmental Easement. The report will be prepared in accordance with NYSDEC's DER-10 and submitted within 30 days of the end of each certification period. Media sampling results will also be incorporated into the Periodic Review Report. The report will include:

- Identification, assessment and certification of all ECs/ICs required by the remedy for the Site.
- Results of the required annual Site inspections and severe condition inspections, if applicable.
- All applicable Site management forms and other records generated for the Site during the reporting period in the NYSDEC-approved electronic format, if not previously submitted.
- Identification of any wastes generated during the reporting period, along with waste characterization data, manifests, and disposal documentation.
- A summary of any discharge monitoring data and/or information generated during the reporting period, with comments and conclusions.
- Data summary tables and graphical representations of contaminants of concern by media (groundwater, soil vapor, etc.), which include a listing of all compounds analyzed, along with the applicable standards, with all exceedances highlighted. These will include a presentation of past data as part of an evaluation of contaminant concentration trends, including, but not limited to:
    - Trend monitoring graphs that present groundwater contaminant levels from before the start of the remedy implementation to the most current sampling data;
    - Trend monitoring graphs depicting system influent analytical data on a per event and cumulative basis;
    - O&M data summary tables;
    - A current plume map for Sites with remaining groundwater contamination; and
    - A groundwater elevation contour map for each gauging event.

- Results of all analyses, copies of all laboratory data sheets, and the required laboratory data deliverables for all samples collected during the reporting period will be submitted in digital format as determined by the NYSDEC. Currently, data is supplied electronically and submitted to the NYSDEC EQuIS™ database in accordance with the requirements found at this link: http://www.dec.ny.gov/chemical/62440.html.
- A Site evaluation, which includes the following:
    - The compliance of the remedy with the requirements of the Site-specific Decision Document;
    - The operation and the effectiveness of all treatment units, etc., including identification of any needed repairs or modifications;
    - Any new conclusions or observations regarding Site contamination based on inspections or data generated by the Monitoring and Sampling Plan for the media being monitored;
    - Recommendations regarding any necessary changes to the remedy and/or Monitoring and Sampling Plan; and
    - Trends in contaminant levels in the affected media will be evaluated to determine if the remedy continues to be effective in achieving remedial goals as specified by the Decision Document.
    - The overall performance and effectiveness of the remedy.

7.2.1 Certification of Institutional and Engineering Controls

Following the last inspection of the reporting period, a qualified environmental professional or Professional Engineer licensed to practice in New York State (depending on the need to evaluate engineering systems) will prepare, and include in the Periodic Review Report, the following certification as per the requirements of NYSDEC DER-10:

"For each institutional or engineering control identified for the Site, I certify that all of the following statements are true:

- *The inspection of the Site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under my direction;*
- *The institutional control and/or engineering control employed at this Site is unchanged from the date the control was put in place, or last approved by the Department;*
- *Nothing has occurred that would impair the ability of the control to protect the public health and environment;*
- *Nothing has occurred that would constitute a violation or failure to comply with any Site*

management plan for this control;

- *Access to the Site will continue to be provided to the Department to evaluate the remedy, including access to evaluate the continued maintenance of this control;*
- *If a financial assurance mechanism is required under the oversight document for the Site, the mechanism remains valid and sufficient for the intended purpose under the document;*
- *Use of the Site is compliant with the environmental easement;*
- *The engineering control systems are performing as designed and are effective;*
- *To the best of my knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the Site remedial program and generally accepted engineering practices; and*
- *The information presented in this report is accurate and complete.*

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as [Owner/Remedial Party or Owner's/Remedial Party's Designated Site Representative]."

"I certify that the New York State Education Department has granted a Certificate of Authorization to provide Professional Engineering services to the firm that prepared this Periodic Review Report."

The signed certification will be included in the Periodic Review Report. The Periodic Review Report will be submitted, in electronic format, to the NYSDEC project manager and the NYSDOH project manager. The Periodic Review Report may also need to be submitted in hard-copy format if requested by the NYSDEC project manager.

7.3 CORRECTIVE MEASURES WORK PLAN

If any component of the remedy is found to have failed, or if the periodic certification cannot be provided due to the failure of an institutional or engineering control or failure to conduct Site management activities, a Corrective Measures Work Plan will be submitted to the NYSDEC project manager for approval. This plan will explain the failure and provide the details and schedule for performing work necessary to correct the failure. Unless an emergency condition exists, no work

will be performed pursuant to the Corrective Measures Work Plan until it has been approved by the NYSDEC project manager.

7.4 REMEDIAL SITE OPTIMIZATION REPORT

In the event that an RSO is to be performed (see Section 6.2, upon completion of an RSO, an RSO report must be submitted to the Department for approval. A general outline for the RSO report is provided in Appendix M. The RSO report will document the research/ investigation and data gathering that was conducted, evaluate the results and facts obtained, present a revised conceptual Site model and present recommendations. RSO recommendations are to be implemented upon approval from the NYSDEC. Additional work plans, design documents, HASPs etc., may still be required to implement the recommendations, based upon the actions that need to be taken. A final engineering report and update to the SMP may also be required.

The RSO report will be submitted, in electronic format, to the NYSDEC Central Office, Regional Office in which the Site is located, Site Control and the NYSDOH Bureau of Environmental Exposure Investigation.

8.0 REFERENCES

6NYCRR Part 375, Environmental Remediation Programs. December 14, 2006.

NYSDEC DER-10 – "Technical Guidance for Site Investigation and Remediation".

NYSDEC, 1998. Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. June 1998 (April 2000 addendum).

Off-Site Environmental Characterization Report Coyne Textile Services, GZA GeoEnvironmental of New York, August 2015.

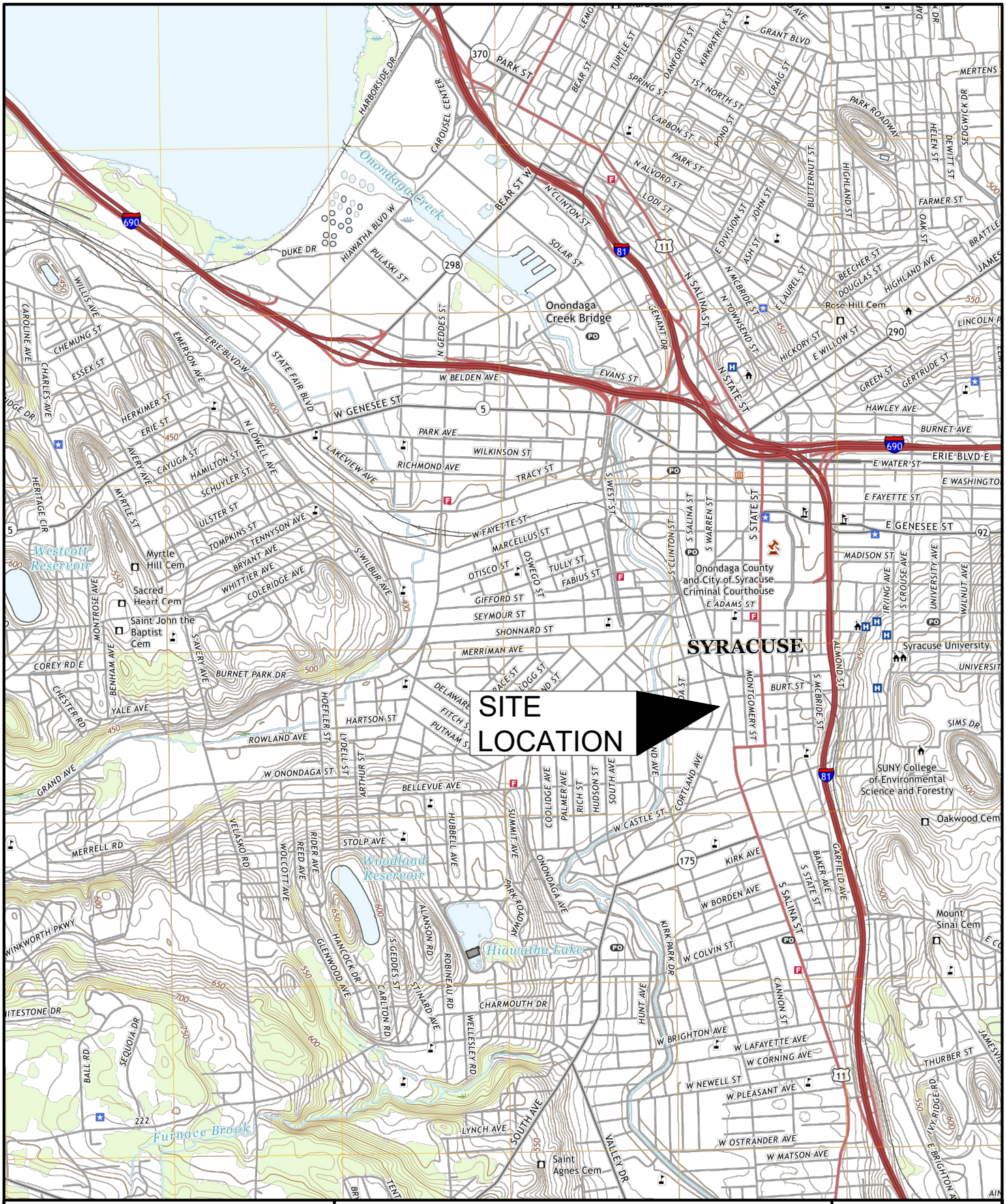
Remedial Investigation Report Former Coyne Textile Facility, CHA Consulting, Inc., February 7, 2019.

Contaminant Source Removal Construction Completion Report, Former Coyne Textile Facility, CHA Consulting, Inc., October 14, 2019.

Remedial Design Report Former Coyne Textile Facility, CHA Consulting, Inc., June 2020.

Supplemental Remedial Investigation Report South Clinton Street, CHA Consulting, Inc., November 2021.

FIGURES



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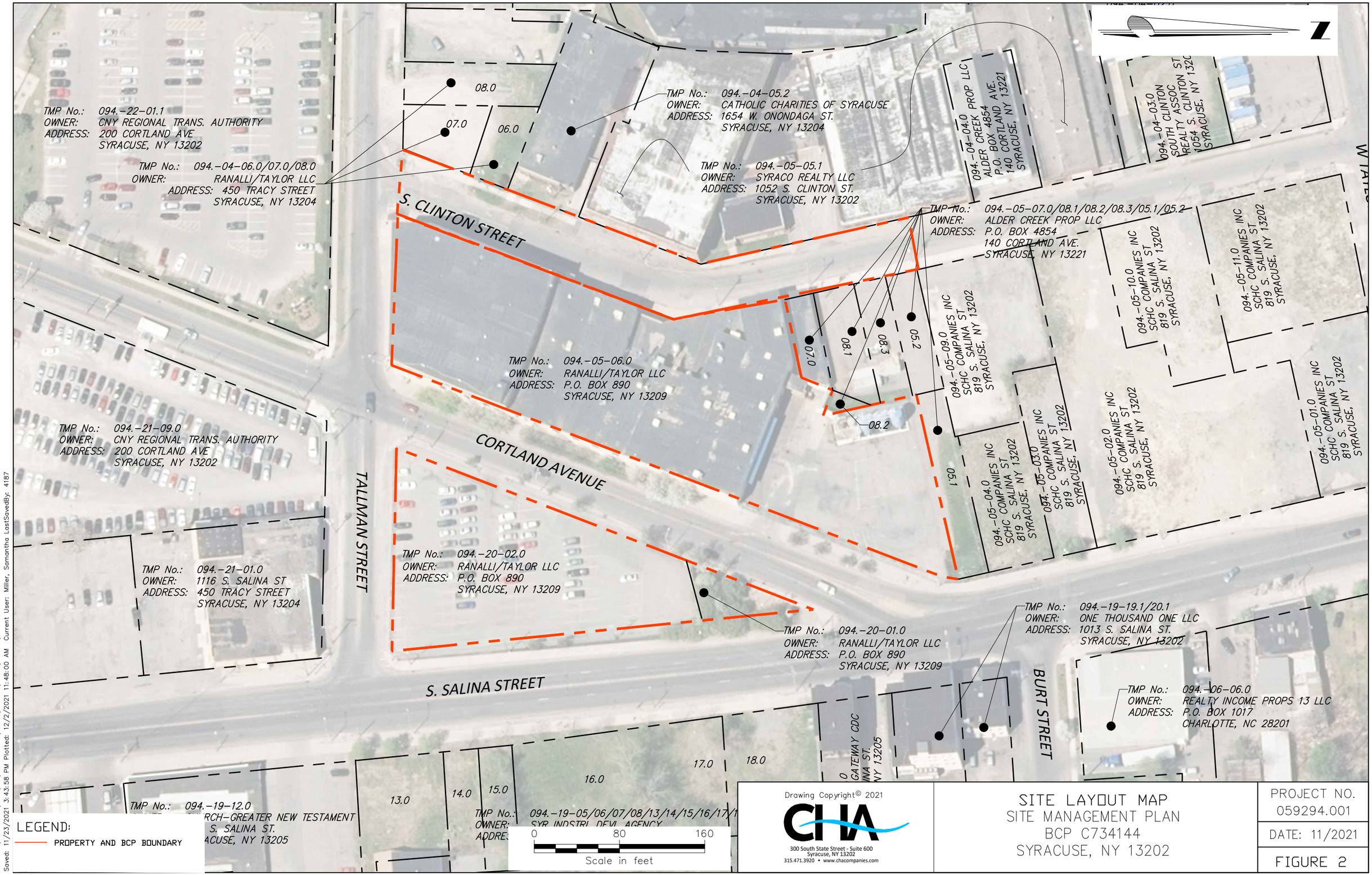
SITE LOCATION MAP

SITE MANAGEMENT PLAN
BCP C734144
140 CORTLAND AVE.
SYRACUSE, NEW YORK

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 1



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SITE LAYOUT MAP
SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NY 13202

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 2

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\SMP FIGURES.DWG
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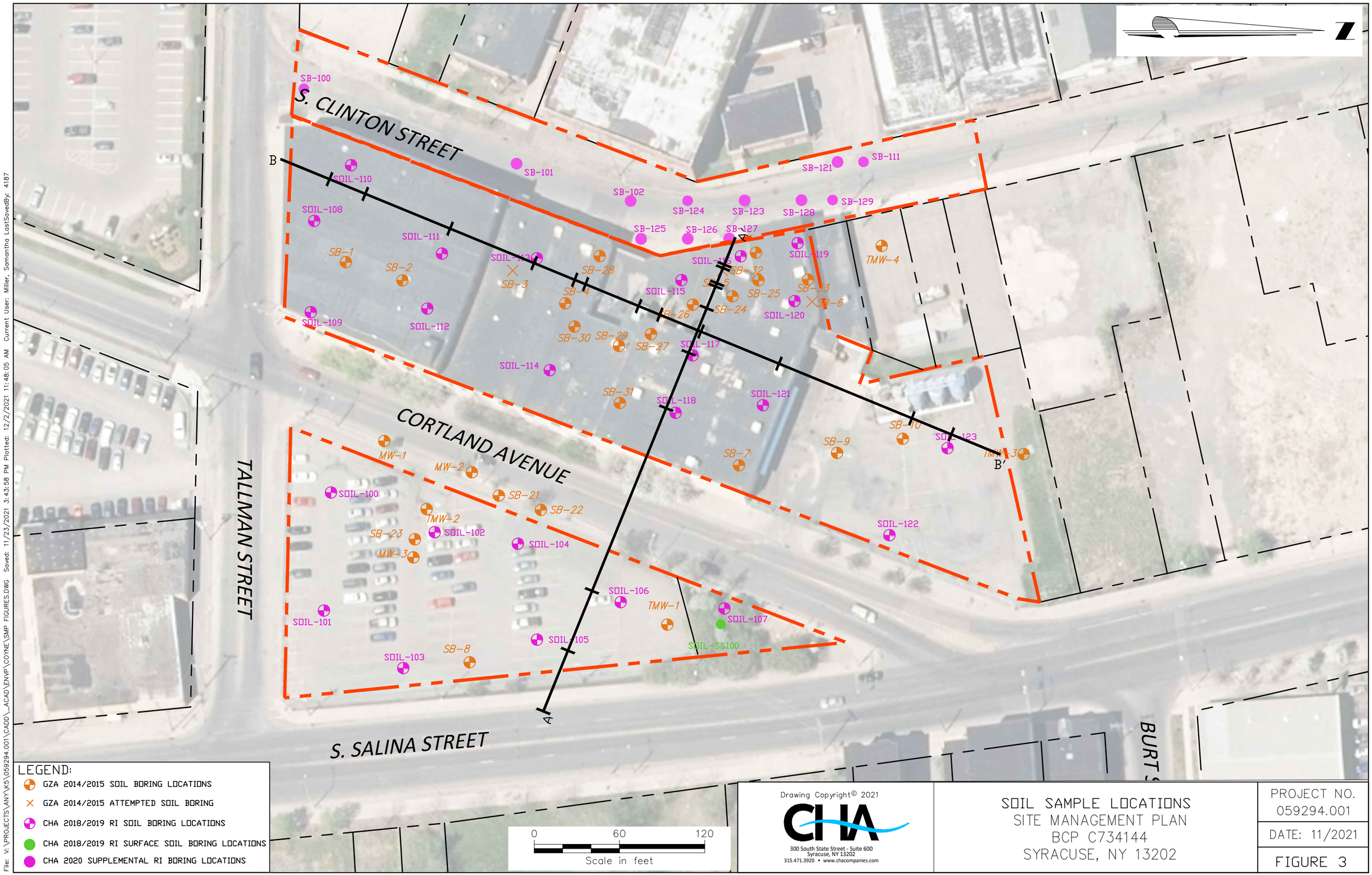

LEGEND:

- GZA 2014/2015 SOIL BORING LOCATIONS
- GZA 2014/2015 ATTEMPTED SOIL BORING
- CHA 2018/2019 RI SOIL BORING LOCATIONS
- CHA 2018/2019 RI SURFACE SOIL BORING LOCATIONS
- CHA 2020 SUPPLEMENTAL RI BORING LOCATIONS

0 60 120

Scale in feet

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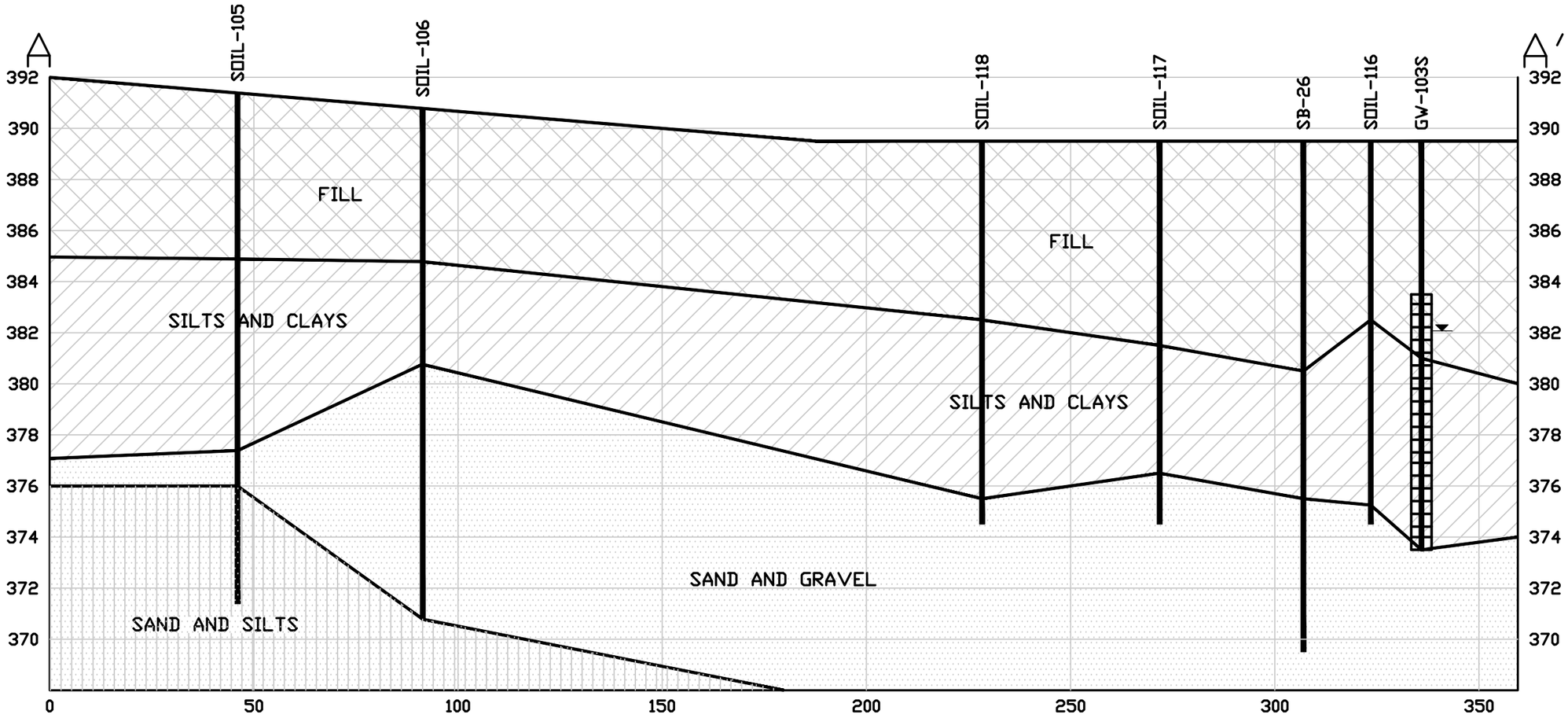
SOIL SAMPLE LOCATIONS
SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NY 13202

PROJECT NO. 059294.001

DATE: 11/2021

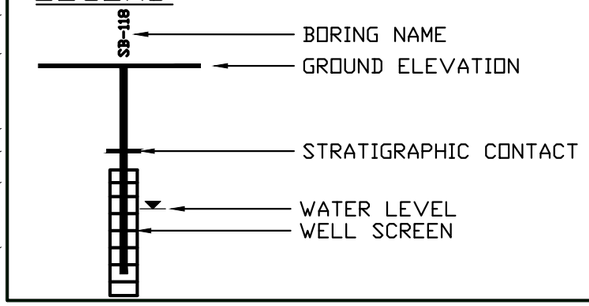
FIGURE 3

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\SMP FIGURES.DWG Saved: 11/23/2021 3:43:58 PM Plotted: 12/2/2021 11:48:05 AM Current User: Miller, Samantha LastSavedBy: 4187



SECTION A-A'

LEGEND



NOTES:

1. ALL BORING LOCATIONS ARE APPROXIMATE
2. STRATIGRAPHIC CONTACTS DASHED WHERE APPROXIMATE
3. SURFACE ELEVATIONS ARE APPROXIMATE

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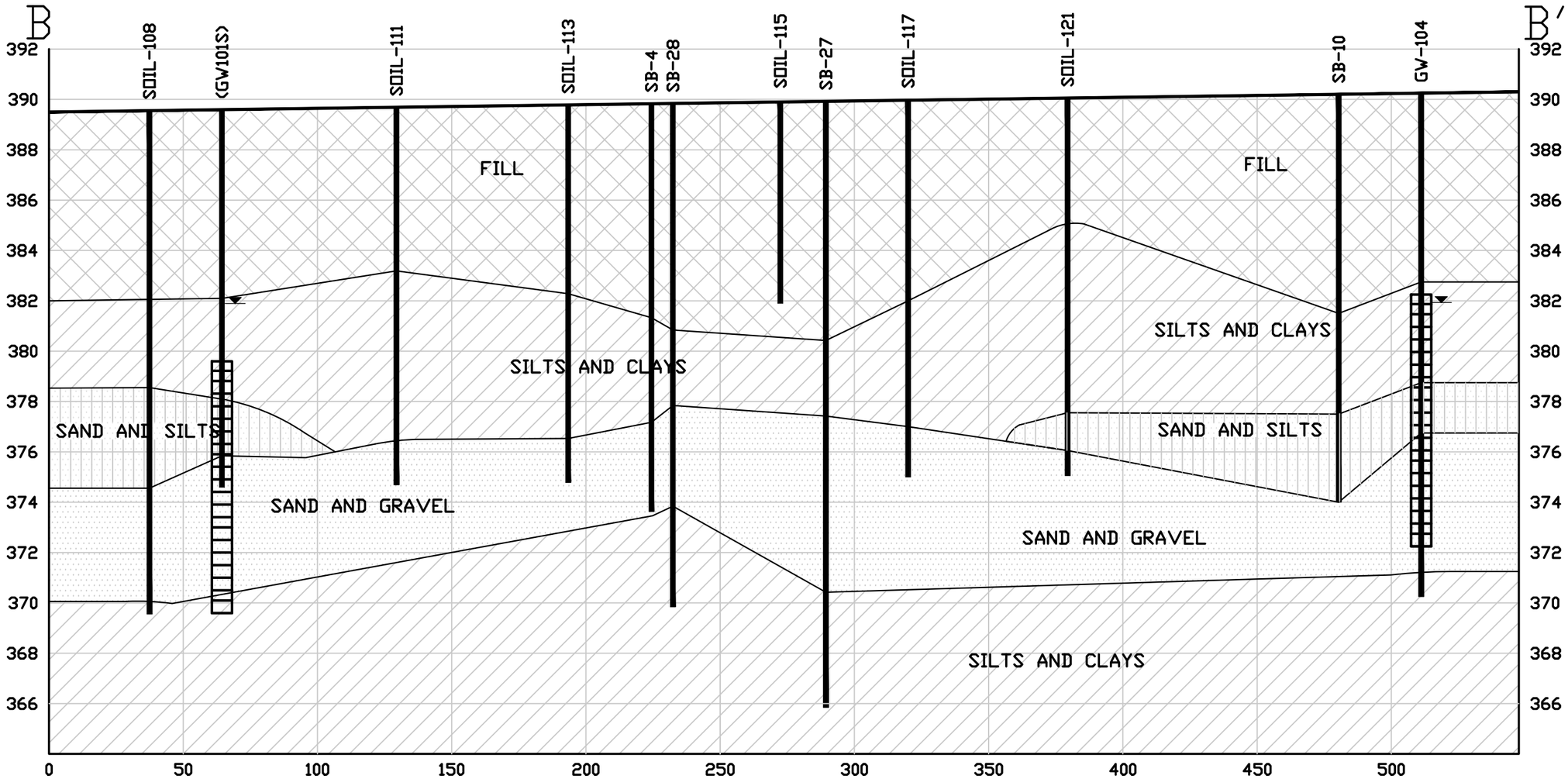
CROSS SECTION A–A'
SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NY 13202

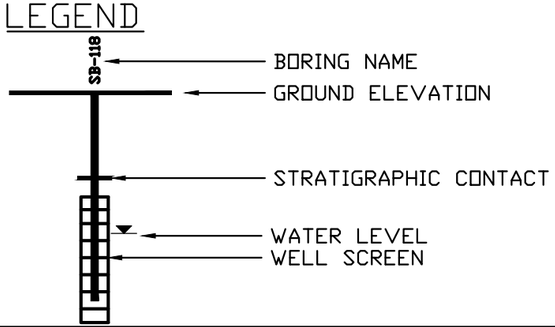
PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 4



LEGEND



SECTION B-B'

NOTES:

1. ALL BORING LOCATIONS ARE APPROXIMATE
2. STRATIGRAPHIC CONTACTS DASHED WHERE APPROXIMATE
3. SURFACE ELEVATIONS ARE APPROXIMATE

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CROSS SECTION A-A'
SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NY 13202

PROJECT NO. 059294.001
DATE: 11/2021
FIGURE 5

S. CLINTON STREET

CORTLAND AVENUE

TALLMAN STREET

S. SALINA STREET

381.5′

380.5′

382.0′

382.5′

383.0′

383.5′

GW–101S
GW–101I
GW–101D

GW–100

GW–102

MW–5A

MW–6A

MW–7A

MW–4

TEMP
GW–001

GW–103S
GW–103D

SB–32

SB–24

SB–30

TMW–4

GW–104

TMW–3

MW–1

MW–2

TMW–2

MW–3

GW–105S
GW–105D

TMW–1

LEGEND:

- GZA 2014/2015 GROUNDWATER WELL LOCATION (ELEV. MEASURED 8/2015
- CHA RIWP GROUNDWATER WELL LOCATION (ELEV. MEASURED 04/2018
- GROUNDWATER CONTOUR ELEVATION (FT. AMSL)

0 60 120
Scale in feet

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GROUNDWATER CONTOUR MAP
BCP C734144
SITE MANAGEMENT PLAN
SYRACUSE, NY 13202

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 6

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\SMP – CONTOUR MAP.DWG Saved: 12/2/2021 11:45:38 AM Plotted: 12/2/2021 11:48:24 AM Current User: Miller, Samantha LastSavedBy: 4187

SOUTH CLINTON STREET

TALLMAN ST.

CORTLAND AVE.

GEN.

MECH

DUMPSTER

TZ-2B

TZ-2C

TZ-2A

TREATMENT ZONE 1
SOIL EXCAVATION
5,000 sqft

TREATMENT ZONE 2
IN-SITU SOIL MIXING WITH ZVI
INJECTION (9-26ft bgs)
5,000 sqft TOTAL

TREATMENT ZONE 3
GROUNDWATER RECIRCULATION
WITH SODIUM PERMANGANATE
INJECTION
20,300 sqft

PETROLEUM IMPACTED
SOIL EXCAVATION
600 sqft
9-10 FT BGS

LOCATION OF TEMPORARY TREATMENT SYSTEM

0 40 80
Scale in feet

STATE OF NEW YORK
SCOTT M. SMITH
EXCELSIOR
83885
LICENSED PROFESSIONAL ENGINEER

NOTE: IRM WORK COMPLETED IN JUNE 2019 WAS CONDUCTED IN THE AREA SHOWN AS TZ-2B, THAT WAS LATER FURTHER REMEDIATED VIA IN-SITU SOIL MIXING WITH ZVI INJECTIONS

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REMEDIAL ZONES OVERVIEW

FINAL ENGINEER REPORT
BCP C734144
SYRACUSE, NEW YORK

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 8

S. CLINTON STREET

CORTLAND AVENUE

TALLMAN STREET

S. SALINA STREET

BURT S

LEGEND:

- FORMER UST AREA (SOURCE AREA)
- SITE-WIDE GROUNDWATER
- OFFICE VAPOR
- WAREHOUSE VAPOR

0 60 120

Scale in feet

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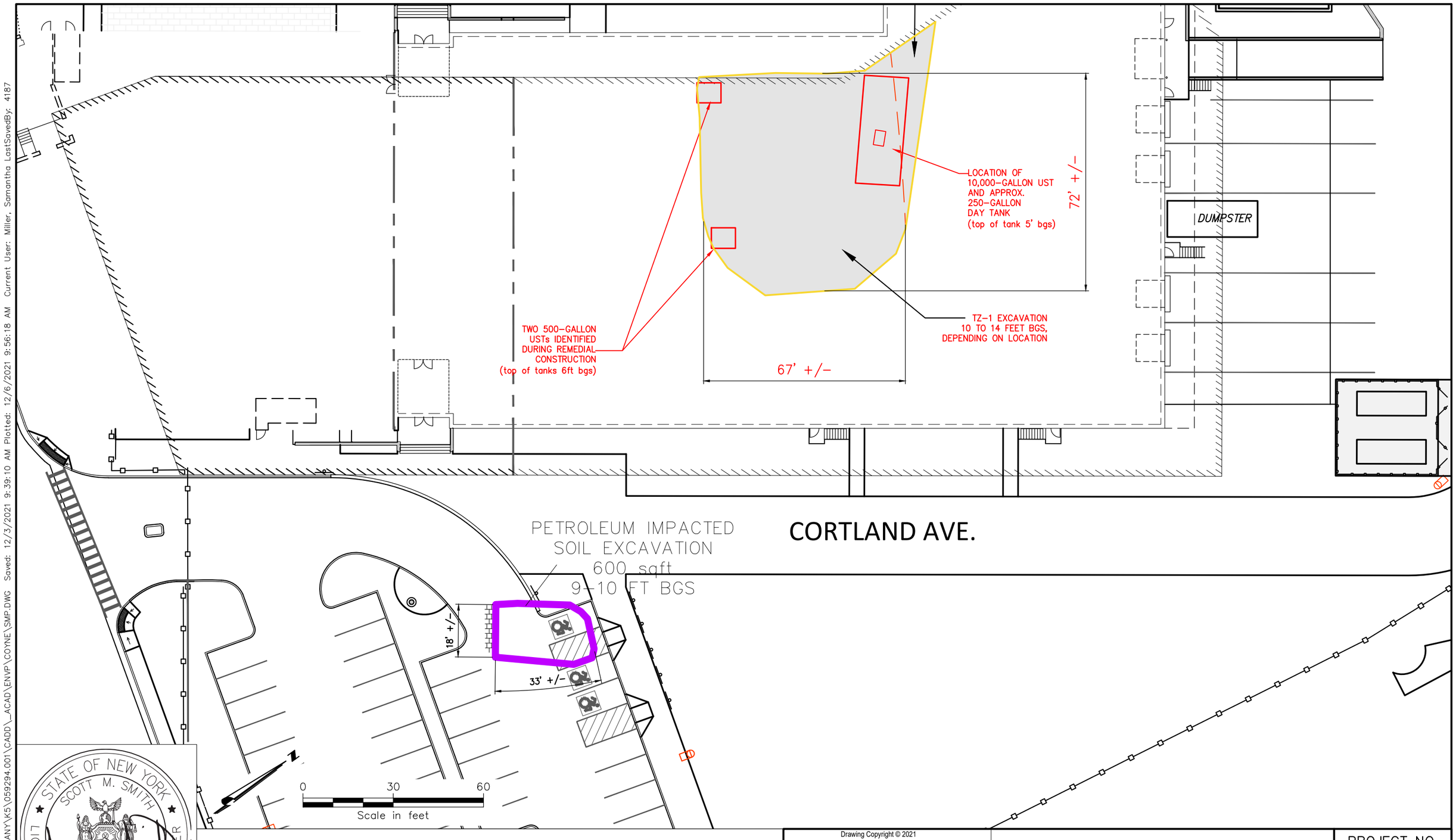
AREAS OF CONCERN
SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NY 13202

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 7

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\SMP FIGURES.DWG Saved: 11/23/2021 3:43:58 PM Plotted: 12/2/2021 11:48:37 AM Current User: Miller, Samantha LastSavedBy: 4187



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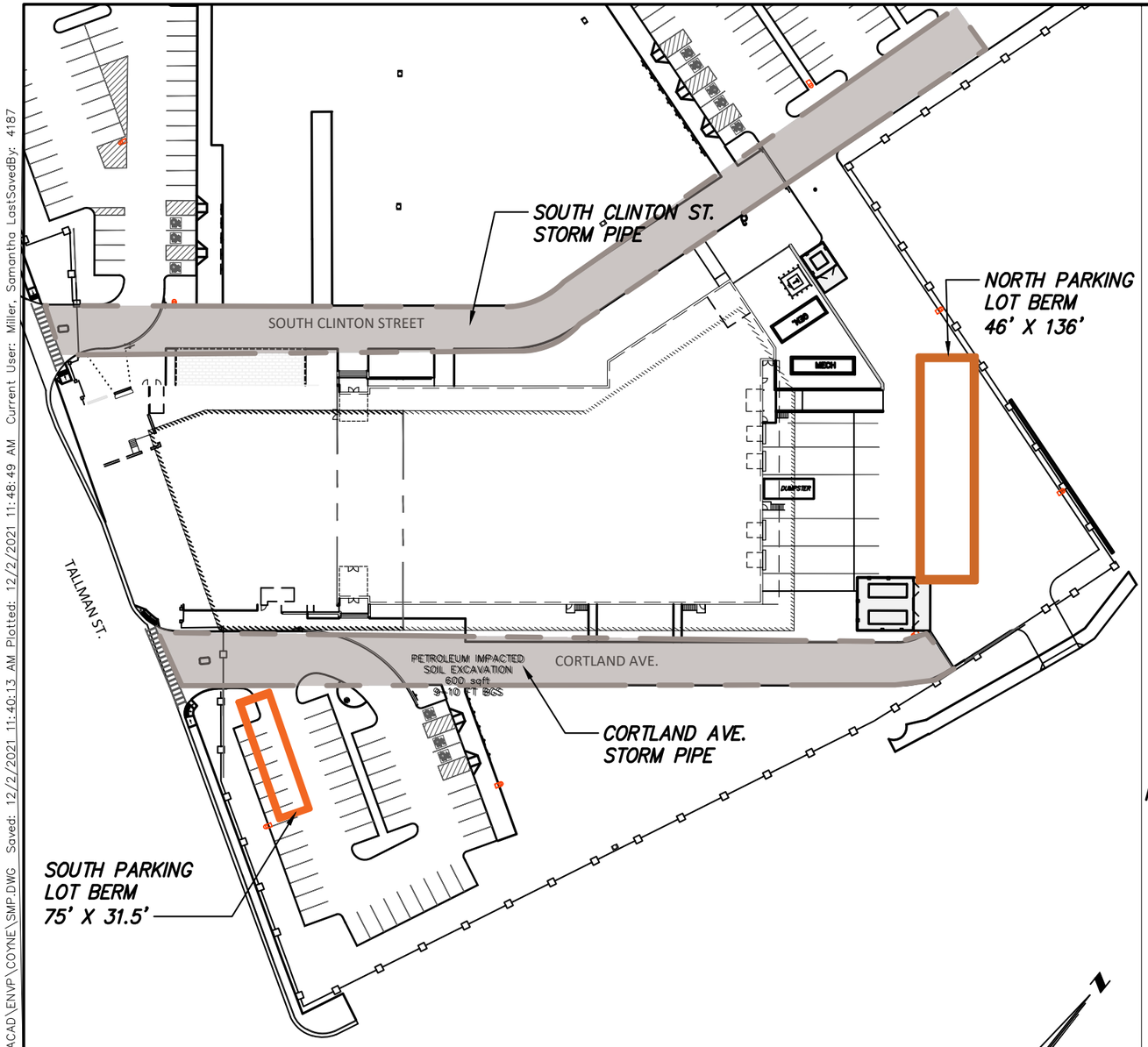
EXCAVATION LIMITS AND DIMENSIONS

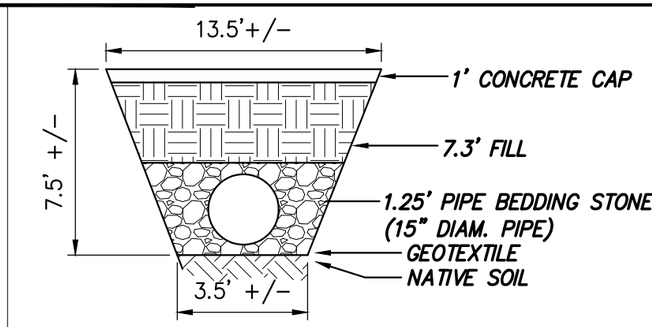
SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NEW YORK

PROJECT NO. 059294.001

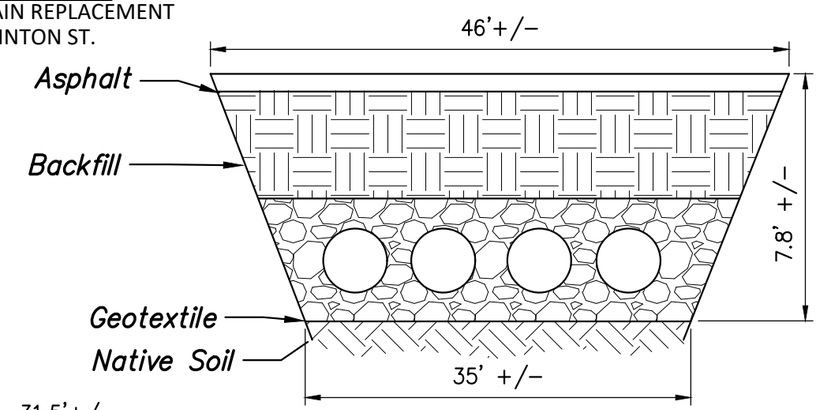
DATE: 11/2021

FIGURE 9

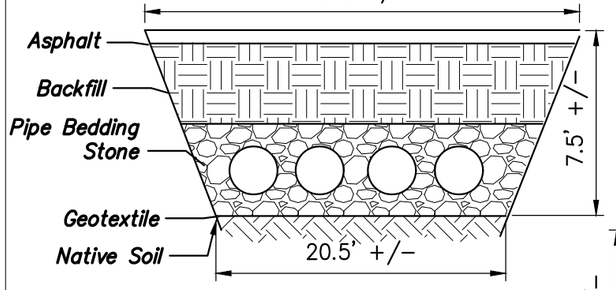




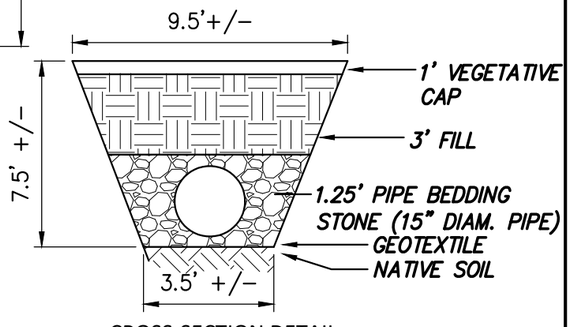
CROSS-SECTION DETAIL
STORMWATER MAIN REPLACEMENT
SOUTH CLINTON ST.



CROSS-SECTION DETAIL
STORMWATER DETENTION
NORTH PARKING LOT



CROSS-SECTION DETAIL
STORMWATER DETENTION
EAST PARKING LOT



CROSS-SECTION DETAIL
STORMWATER MAIN
REPLACEMENT
CORTLAND AVE.

STATE OF NEW YORK
SCOTT M. SMITH
LICENSED PROFESSIONAL ENGINEER
83885
EXCELSIOR

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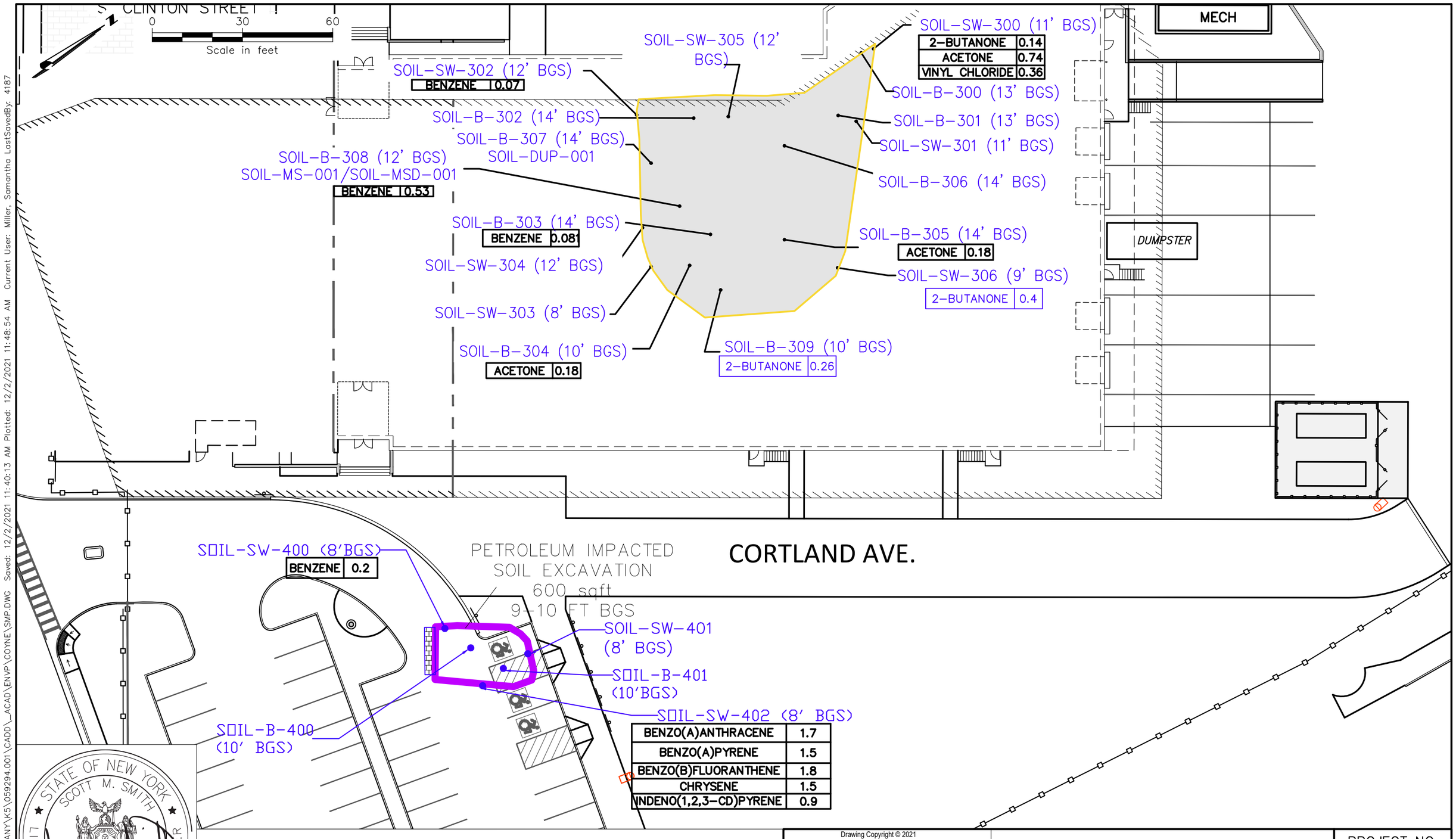
REDEVELOPMENT EXCAVATION AND LIMITS

SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NEW YORK

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 10



BENZO(A)ANTHRACENE	1.7
BENZO(A)PYRENE	1.5
BENZO(B)FLUORANTHENE	1.8
CHRYSENE	1.5
INDENO(1,2,3-CD)PYRENE	0.9

CONFIRMATORY SAMPLES WERE COLLECTED ON THE BOTTOM AND SIDEWALLS OF THE EXCAVATION, AS NOTED.
NO DETECTIONS WERE EXCEEDANCE OF THEIR APPLICABLE COMMERCIAL USE SOIL CLEANUP OBJECTIVES. ONLY DETECTIONS SHOWN ABOVE (IN PPM) EXCEED THE UNRESTRICTED USE SOIL CLEANUP OBJECTIVE

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REMAINING SOIL SAMPLE EXCEEDANCES

SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NEW YORK

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 11

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\SMP.DWG Saved: 12/2/2021 11:40:13 AM Plotted: 12/2/2021 11:48:54 AM Current User: Miller, Samantha LastSavedBy: 4187

TMW-112	
Bromomethane	6.6
cis-1,2-Dichloroethene	540
Isopropylbenzene	9.3
trans-1,2-Dichloroethene	6.5
Vinyl chloride	680
Benzo(a)anthracene	0.14
Benzo(a)pyrene	0.11
Benzo(b)fluoranthene	0.13
Benzo(k)fluoranthene	0.05
Chrysene	0.14
Indeno(1,2,3-cd)pyrene	0.08
Total Arsenic	37.3
Total Lead	49

MW-7				
	2020	2015		
	A	A	B	C
Bromomethane	7.5	NR	NR	NR
Vinyl Chloride	910	500	210	0.87[3]
cis-1,2-Dichloroethene	360	460	180	1.4[3]

MW-6				
	2020	2015		
	A	A	B	C
Tetrachloroethene	5.8	34	27	ND
Vinyl Chloride	1000	2000	3200	
1,1-Dichloroethene	8.2	ND	15	
trans-1,2-Dichloroethene	130	230	150	
Trichloroethene	96	260	290	
cis-1,2-Dichloroethene	2200	5300	5600	
1,4-Dioxane[2]	2.18	NR		
Total Cadmium	87.76			

MW-5				
	2020	2015		
	A	A	B	C
Tetrachloroethene	160	2900	5.7	2.7[3]
Benzene	ND	4.4	ND	ND
Vinyl Chloride	1.7	110	1.1[3]	0.5[3]
trans-1,2-Dichloroethene	0.7	12	ND	ND
Trichloroethene	29	1900	2.2[3]	1.6[3]
cis-1,2-Dichloroethene	22	2400	6.1	4.2[3]
Benzo(a)anthracene	0.05	NR		
Benzo(a)pyrene	0.02			
Benzo(b)fluoranthene	0.04			
Benzo(k)fluoranthene	0.1			
Chrysene	0.03			
Indeno(1,2,3-cd)pyrene	0.02			
Total Lead	27.67			

MW-4	
	2015
Vinyl Chloride	3.3

TMW-101	
Benzene	23
Tetrachloroethene	5.4
Benzo(a)anthracene	0.18
Benzo(a)pyrene	0.16
Benzo(b)fluoranthene	0.19
Benzo(k)fluoranthene	0.07
Chrysene	0.13
Indeno(1,2,3-cd)pyrene	0.09
Total Arsenic	63.36
Total Barium	2377

MW-7
TMW-112
MW-6
MW-5
MW-4
TMW-101

CORTLAND AVE.
SOUTH CLINTON STREET
SOUTH SALINA STREET
TALLMAN STREET

N

0 80 160
Scale in feet

▲ GROUNDWATER MONITORING WELL LOCATION
▲ TEMP. GROUNDWATER MONITORING WELL LOCATION
ND – PARAMETER NOT DETECTED
NR – PARAMETER NOT REPORTED
GROUNDWATER RESULTS DISPLAYED IN µg/l (ppb)
GROUNDWATER SAMPLES COLLECTED DECEMBER 2020
AS PART OF THE SIR ACTIVITIES (2 MONTHS POST–REMEDY)

PARAMETERS SHOWN EXCEED TOGS 1.1.1 AMBIENT
GROUNDWATER QUALITY CRITERIA FOR CLASS GA WATERS
[1] – GUIDANCE VALUES OBTAINED FROM THE NYSDEC OCT. 2020 GUIDANCE
[2] – GUIDANCE VALUE FROM NYSDOH SECTION 225 FOR DRINKING WATER
[3] – VALUE DOES NOT EXCEED TOGS 1.1.1

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REMAINING CONTAMINATION – Groundwater

SITE MANAGEMENT PLAN
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SYRACUSE, NEW YORK

PROJECT NO. 059294.001
DATE: 11/2021
FIGURE 12

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\FIGURE 12_SMP.DWG
Saved: 12/6/2021 9:45:39 AM Plotted: 12/6/2021 9:52:10 AM Current User: Miller, Samantha LastSavedBy: 4187

SOUTH CLINTON STREET

S. CLINTON STREET

GEN.

MECH

DUMPSTER

CORTLAND AVE.

0 30 60

Scale in feet

STATE OF NEW YORK
SCOTT M. SMITH
83885
LICENSED PROFESSIONAL ENGINEER

LOCATION OF SOIL VAPOR BARRIER INSTALLED AS PART OF THE ACTIVE SUB-SLAB DEPRESSURIZATION SYSTEM WHICH MITIGATES VAPORS WITHIN THE BUILDING FOOTPRINT

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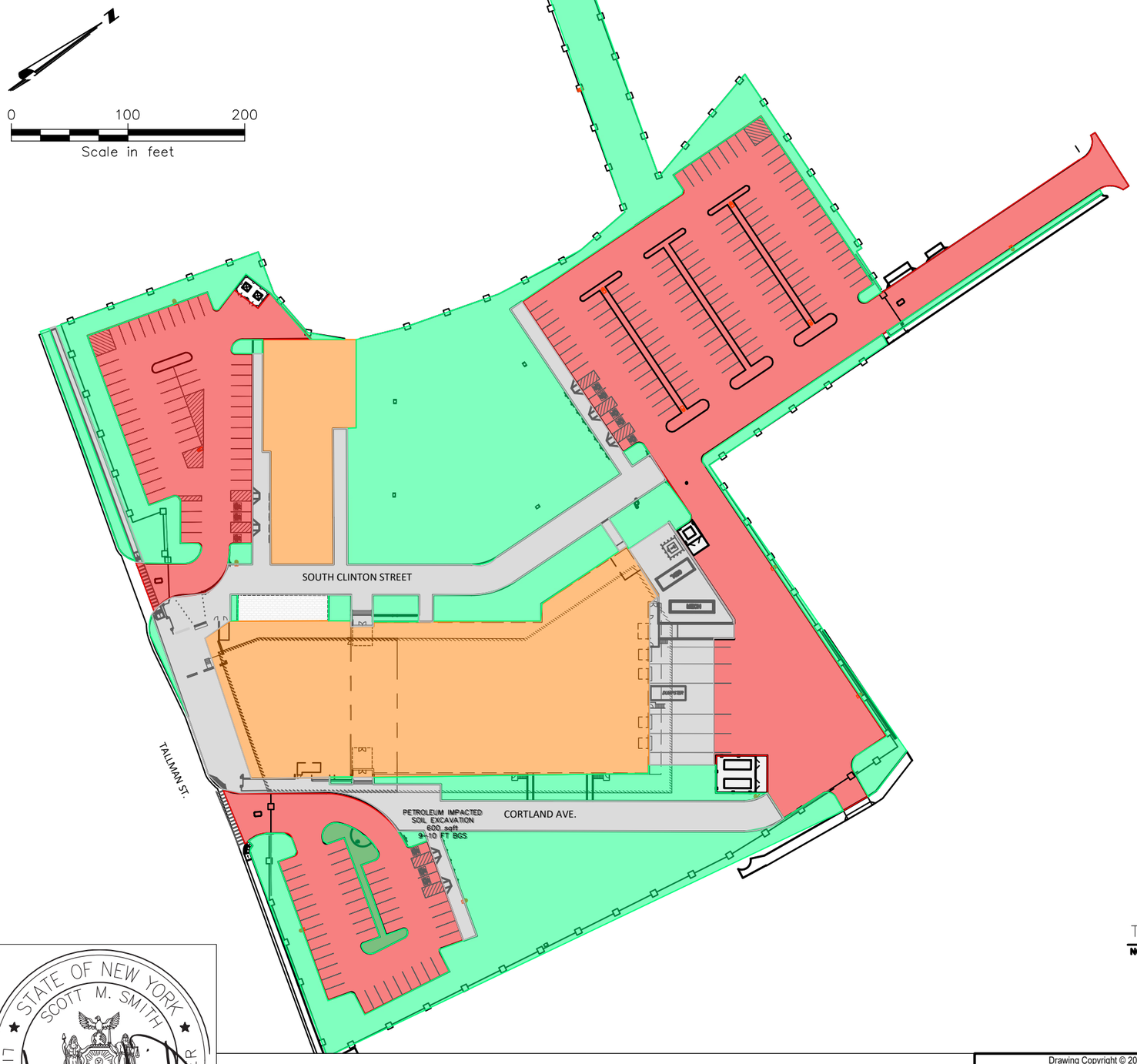
AREA OF SOIL VAPOR INTRUSION CONCERN

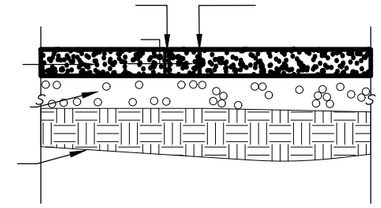
SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NEW YORK

PROJECT NO. 059294.001

DATE: 11/2021

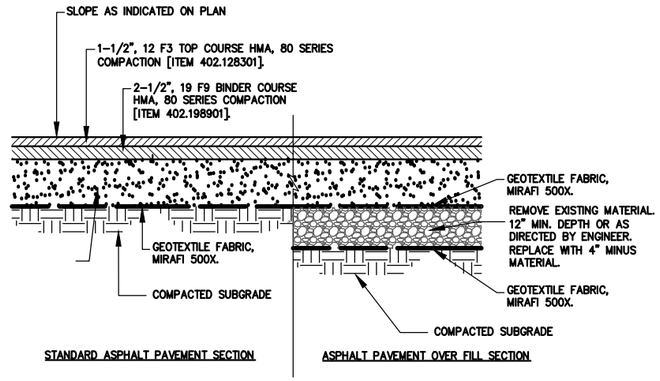
FIGURE 13





CONCRETE SIDEWALK DETAIL
NOT TO SCALE

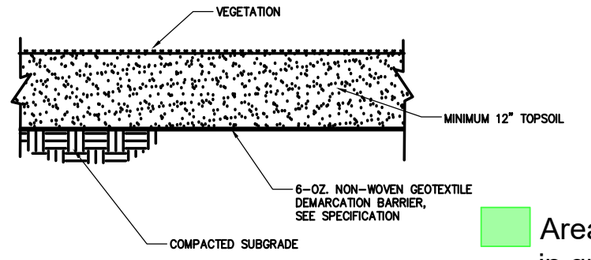
Areas identified in gray



NOTE: USE ASPHALT JOINT SEALER ALONG TRANSITION TO EXISTING PAVEMENT

ASPHALT DETAIL
NOT TO SCALE

Areas identified in red



TOPSOIL WITH DEMARCATION BARRIER DETAIL
NOT TO SCALE

Areas identified in green

Building footprint identified in orange

STATE OF NEW YORK
SCOTT M. SMITH
83885
LICENSED PROFESSIONAL ENGINEER
EXCELSIOR

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IC/EC BOUNDARIES

SITE MANAGEMENT PLAN
BCP C734144
SYRACUSE, NEW YORK

PROJECT NO. 059294.001

DATE: 11/2021

FIGURE 14

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\SMP.DWG Saved: 12/3/2021 9:39:10 AM Plotted: 12/6/2021 9:52:26 AM Current User: Miller, Samantha LastSavedBy: 4187

APPENDIX A

Environmental Easement

Lisa Dell, County Clerk
401 Montgomery Street
Room 200
Syracuse, NY 13202
(315) 435-2229

Onondaga County Clerk Recording Cover Sheet

Received From :
SIMPLIFILE

Return To :
SIMPLIFILE

Method Returned : ERECORDING

First PARTY 1
RANALLI TAYLOR ST LLC

First PARTY 2
YORK, THE PEOPLE OF THE STATE OF NEW

Index Type : Land Records

Instr Number : 2021-00048750

Book : **Page :**

Type of Instrument : Easement
Type of Transaction : Ease, R-Way
Recording Fee: $100.50

Recording Pages : 11

The Property affected by this instrument is situated in Syracuse, in the County of Onondaga, New York

Real Estate Transfer Tax

RETT # :	2891
Deed Amount :	$0.00
RETT Amount :	$0.00
Total Fees :	$100.50

State of New York

County of Onondaga

I hereby certify that the within and foregoing was recorded in the Clerk's office for Onondaga County, New York

On (Recorded Date) : 10/12/2021

At (Recorded Time) : 2:09:31 PM

Lisa Dell, County Clerk

This sheet constitutes the Clerks endorsement required by Section 319 of Real Property Law of the State of New York

Entered By: MMERRILL Printed On : 10/12/2021 At : 2:09:40PM

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 6th day of October, 2021 between Owner, Ranalli/Taylor St., LLC, having a mailing address of P.O. Box 678, Liverpool, New York 13088 (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the addresses of 1002-22 Salina Street and Cortland Avenue, and 1024-40 Salina Street and Tallman Street in the City of Syracuse, County of Onondaga and State of New York, known and designated on the tax map of the County Clerk of Onondaga as tax map parcel numbers: Section 094. Block 20 Lots 01 and 02, respectively, being a portion of the property conveyed to Grantor by deed dated June 2, 2016 and recorded in the Onondaga County Clerk's Office in Liber and Page 5377/159. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.862 acres +/- acres, and is hereinafter more fully described as "Parcel 2" in the Land Title Survey dated July 7, 2021 prepared by Timothy J. Coyer, L.L.S. of Ianuzi & Romans Land Surveying, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as "Parcel 2" in Schedule A; and

WHEREAS, Grantor, is the owner of real property located at the address of 120-154 Cortland Avenue and Tallman Street in the City of Syracuse, County of Onondaga and State of New York, known and designated on the tax map of the County Clerk of Onondaga as tax map parcel number: Section 094. Block 05 Lot 06, being a portion of the property conveyed to Grantor

by deed dated June 2, 2016 and recorded in the Onondaga County Clerk's Office in Liber and Page 5377/159. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 1.749 acres +/- acres, and is hereinafter more fully described as "Parcel 3" in the Land Title Survey dated July 7, 2021 prepared by Timothy J. Coyer, L.L.S. of Ianuzi & Romans Land Surveying, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as "Parcel 3" in Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C734144-05-17, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Onondaga County Department of Health to render it safe for use as drinking water or for industrial purposes, and

the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the

property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee

interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:
Site Number: C734144
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:
Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail

and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Ranalli/Taylor St., LLC:

By: _____

Print Name: Dino Peros

Title: VP Finance Date: 9.30.21

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Onondaga)

On the 30 day of September, in the year 20 21, before me, the undersigned, personally appeared Dino Peros, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Erin G. Hyatt
Notary Public - State of New York

ERIN G. HYATT
Notary Public • State of New York
No. 01HY6295050
Qualified in Cayuga County
My Commission Expires December 23, 2021

Certificate of good Standing
filed in Onondaga County 8.14.18

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting by and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 6th day of October in the year 2021, before me, the undersigned, personally appeared Michael J. Ryan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

Dale L. Thiel
Notary Public, State of New York
Qualified in Columbia County
No 01TH6414394
Commission Expires February 22/2025

SCHEDULE "A" PROPERTY DESCRIPTION

PARCEL 2 ENVIRONMENTAL EASEMENT DESCRIPTION:

Beginning at a point in the westerly boundary of South Salina Street at its intersection with the northerly boundary of Tallman Street; running thence N 5°47'20" W along said westerly boundary of South Salina Street, a distance of 397.36 feet to a point in the southeasterly boundary of Cortland Avenue; thence S 21°00'20" W along said southeasterly boundary of Cortland Avenue, a distance of 419.46 feet to a point in said northerly boundary of Tallman Street; thence S 88°52'10" E along said northerly boundary of Tallman Street, a distance of 190.47 feet to the point of beginning.

Area = 0.862± acres

Subject to any easements and restrictions of record.

A portion of property located in the City of Syracuse, Onondaga County, New York

Lot 1,2,3,11 & Pt C Blk 1 0 Tr Vg & L Fl 336 546.21x140x378x28 BldgxUnf

Lot 1 Bl 385 150x166.95 Triang Vac

Lot 3 & P2 Bl 385 253.84x193.25x256.86 Ang

PARCEL 3 ENVIRONMENTAL EASEMENT DESCRIPTION:

Beginning at a point in the northerly boundary of Tallman Street at its intersection with the westerly boundary of Cortland Avenue; running thence N 88°52'10" W along said northerly boundary of Tallman Street, a distance of 23.91 feet to an angle point therein; thence N 88°57'50" W continuing along said northerly boundary of Tallman Street, a distance of 116.58 feet to a point in the easterly boundary of Clinton Street; thence N 21°00'20" E along said easterly boundary of Clinton Street, a distance of 267.14 feet to an angle point therein; thence N 12°55'00" W continuing along said easterly boundary of Clinton Street, a distance of 112.67 feet to a point in the southerly boundary of lands conveyed to JMA Tech Properties LLC by deed recorded in the Onondaga County Clerk's Office as Instrument No. 2019-48292; thence easterly, northeasterly, southeasterly, northerly and easterly along said southerly boundary of lands conveyed to JMA Tech Properties LLC the following courses and distances: 1) N 77°09'30" E, 75.71 feet; 2) N 21°00'20" E, 32.51 feet; 3) S 64°47'54" E, 26.26 feet; 4) N 12°55'00" W, 89.93 feet; 5) N 77°09'30" E, 177. 54 feet to a point in the westerly boundary of South Salina Street; thence S 12°50'30" E along said westerly boundary of South Salina Street, 15.45 feet to a point in said westerly boundary of Cortland Avenue; thence S 21°00'20" W along said westerly boundary of Cortland Avenue, a distance of 546.13 feet to the point of beginning.

Area=1.749± acres

Subject to any easements and restrictions of record.

A portion of property located in the City of Syracuse, Onondaga County, New York

Lot 1,2,3,11 & Pt C Blk 1 0 Tr Vg & L Fl 336 546.21x140x378x28 BldgxUnf

Lot 1 Bl 385 150x166.95 Triang Vac

Lot 3 & P2 Bl 385 253.84x193.25x256.86 Ang

Lisa Dell, County Clerk
401 Montgomery Street
Room 200
Syracuse, NY 13202
(315) 435-2229

Onondaga County Clerk Recording Cover Sheet

Received From :
SIMPLIFILE

Return To :
SIMPLIFILE

Method Returned : ERECORDING

First PARTY 1
JMA TECH PROPERTIES LLC

First PARTY 2
PEOPLE OF THE STATE OF NEW YORK

Index Type : Land Records

Instr Number : 2021-00048743

Book : **Page :**

Type of Instrument : Easement
Type of Transaction : Ease, R-Way

Recording Fee:	$95.50
Recording Pages :	10

The Property affected by this instrument is situated in Syracuse, in the County of Onondaga, New York

Real Estate Transfer Tax

RETT # :	2890
Deed Amount :	$0.00
RETT Amount :	$0.00
Total Fees :	$95.50

State of New York

County of Onondaga

I hereby certify that the within and foregoing was recorded in the Clerk's office for Onondaga County, New York

On (Recorded Date) : 10/12/2021

At (Recorded Time) : 2:07:18 PM

Lisa Dell, County Clerk

This sheet constitutes the Clerks endorsement required by Section 319 of Real Property Law of the State of New York

Entered By: MMERRILL Printed On : 10/12/2021 At : 2:07:32PM

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 6th day of October, 2021, between Owner, JMA Tech Properties, LLC, having a mailing address at P.O. Box 678, Liverpool, New York 13088 (the "Grantor"), and The People of the State of New York (the "Grantee"), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property being known as the Abandoned Road Bed of a Portion of Clinton Street in the City of Syracuse, County of Onondaga and State of New York, known and designated on the tax map of the County Clerk of Onondaga as tax map parcel number: Section N/A Block N/A Lot N/A, being a portion of the property conveyed to Grantor by deed dated June 30, 2021 and recorded in the Onondaga County Clerk's Office in Instrument No. 2021-00030862. The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 0.644 +/- acres, and is hereinafter more fully described as "Parcel 1" in the Land Title Survey dated July 7, 2021 prepared by Timothy J. Coyer, L.L.S. of Ianuzi & Roman Land Surveying, P.C., which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as "Parcel 1" in Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: C734144-05-17, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement").

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Onondaga County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation Law.

F. Grantor covenants and agrees that this Environmental Easement shall be

incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common

law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C734144
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by

the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

11. Consistency with the SMP. To the extent there is any conflict or inconsistency between the terms of this Environmental Easement and the SMP, regarding matters specifically addressed by the SMP, the terms of the SMP will control.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

JMA Tech Properties, LLC:

By: _____

Print Name: Dino Peios

Title: VP Finance Date: 9.30.21

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF Onondaga)

On the 30 day of September, in the year 2021, before me, the undersigned, personally appeared Dino Peios, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Erin G. Hyatt
Notary Public - State of New York

ERIN G. HYATT
Notary Public • State of New York
No. 01HY6295050
Qualified in Cayuga County
My Commission Expires December 23, 2021

Certificate of good Standing
filed in Onondaga County 8.14.18

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting by and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: _____
Michael J. Ryan, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 6th day of October, in the year 2021 before me, the undersigned, personally appeared Michael J. Ryan, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public - State of New York

Dale L. Thiel
Notary Public, State of New York
Qualified in Columbia County
No 01TH6414394
Commission Expires February 22, 2025

SCHEDULE "A" PROPERTY DESCRIPTION

PARCEL 1 ENVIRONMENTAL EASEMENT DESCRIPTION:

Beginning at a point in the westerly boundary of Clinton Street at its intersection with the northerly boundary of Tallman Street; running thence N 21°00'20" E along said westerly boundary of Clinton Street, a distance of 299.66 feet to an angle point therein; thence N 12°55'00" W continuing along said westerly boundary of Clinton Street, a distance of 165.32 feet to a point therein; thence N 77°09'30" E through said Clinton Street, a distance of 50.00 feet to a point in the easterly boundary of said Clinton Street; thence S 12°55'00" E along said easterly boundary of Clinton Street, a distance of 209.17 feet to an angle point therein; thence S 21°00'20" W continuing along said easterly boundary of Clinton Street, a distance of 267.14 feet to a point in said northerly boundary of Tallman Street; thence N 88°57'50" W along the westerly prolongation of said northerly boundary of Tallman Street, a distance of 70.22 feet to the point of beginning.

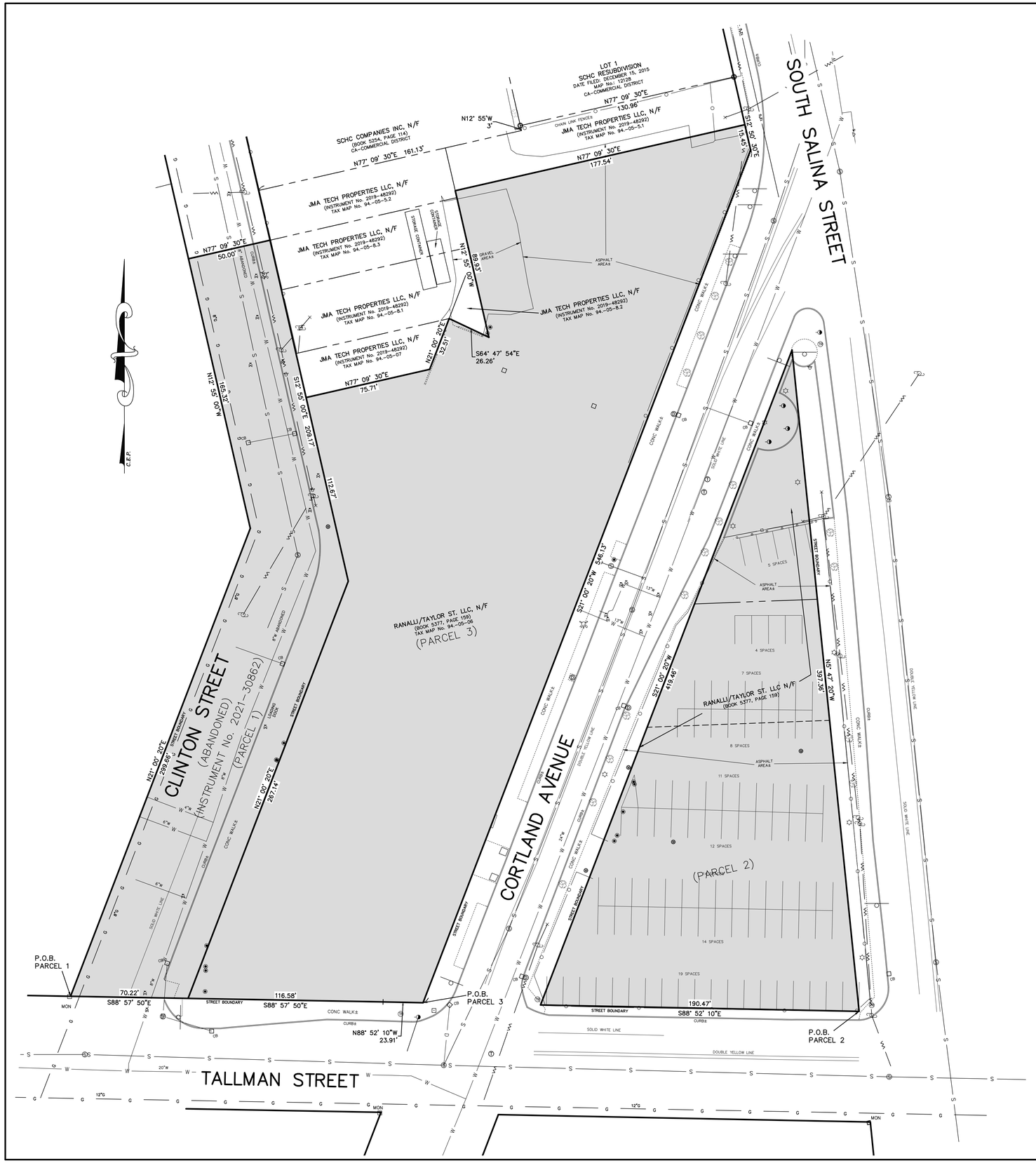
Area=0.644± acres

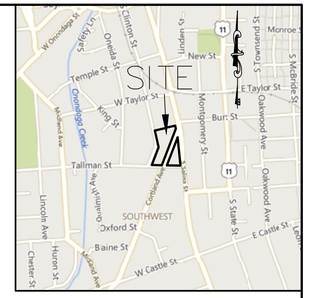
A portion of property located in the City of Syracuse, Onondaga County, New York

Lot 1,2,3,11 & Pt C Blk 1 0 Tr Vg & L Fl 336 546.21x140x378x28 BldgxUnf

Lot 1 Bl 385 150x166.95 Triang Vac

Lot 3 & P2 Bl 385 253.84x193.25x256.86 Ang





LOCATION PLAN
Scale: 1" = 1000'

ENVIRONMENTAL EASEMENT DESCRIPTION

PARCEL 1:
Beginning at a point in the westerly boundary of Clinton Street at its intersection with the northerly boundary of Tallman Street; running thence N 21°00'20" E along said westerly boundary of Clinton Street, a distance of 299.66 feet to an angle point therein; thence N 12°55'00" W continuing along said westerly boundary of Clinton Street, a distance of 165.32 feet to a point therein; thence N 77°09'30" E through said Clinton Street, a distance of 50.00 feet to a point in the easterly boundary of said Clinton Street; thence S 12°55'00" E along said easterly boundary of Clinton Street, a distance of 209.17 feet to an angle point therein; thence S 21°00'20" W continuing along said easterly boundary of Clinton Street, a distance of 267.14 feet to a point in said northerly boundary of Tallman Street; thence N 88°57'50" W along the westerly prolongation of said northerly boundary of Tallman Street, a distance of 70.22 feet to the point of beginning.
Area=0.644± acres

PARCEL 2:

Beginning at a point in the westerly boundary of South Salina Street at its intersection with the northerly boundary of Tallman Street; running thence N 5°47'20" W along said westerly boundary of South Salina Street, a distance of 397.36 feet to a point in the southeasterly boundary of Cortland Avenue; thence S 21°00'20" W along said southeasterly boundary of Cortland Avenue, a distance of 419.46 feet to a point in said northerly boundary of Tallman Street; thence S 88°52'10" E along said northerly boundary of Tallman Street, a distance of 190.47 feet to the point of beginning.
Area = 0.862± acres

PARCEL 3:
Beginning at a point in the northerly boundary of Tallman Street at its intersection with the westerly boundary of Cortland Avenue; running thence N 88°52'10" W along said northerly boundary of Tallman Street, a distance of 23.91 feet to an angle point therein; thence N 88°57'50" W continuing along said northerly boundary of Tallman Street, a distance of 116.58 feet to a point in the easterly boundary of Clinton Street; thence N 21°00'20" E along said easterly boundary of Clinton Street, a distance of 267.14 feet to an angle point therein; thence N 12°55'00" W continuing along said easterly boundary of Clinton Street, a distance of 112.67 feet to a point in the southerly boundary of lands conveyed to JMA Tech Properties LLC by deed recorded in the Onondaga County Clerk's Office as Instrument No. 2019-48292; thence easterly, northeasterly, southeasterly, northerly and easterly along said southerly boundary of lands conveyed to JMA Tech Properties LLC the following courses and distances: 1) N 77°09'30" E, 75.71 feet; 2) N 21°00'20" E, 32.51 feet; 3) S 64°47'54" E, 26.26 feet; 4) N 12°55'00" W, 89.93 feet; 5) N 77°09'30" E, 177. 54 feet to a point in the westerly boundary of South Salina Street; thence S 12°50'30" E along said westerly boundary of South Salina Street, 15.45 feet to a point in said westerly boundary of Cortland Avenue; thence S 21°00'20" W along said westerly boundary of Cortland Avenue, a distance of 546.13 feet to the point of beginning.
Area=1.749± acres

"This property is subject to an environmental easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law. The engineering and institutional controls for this Easement are set forth in more detail in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 *or at derweb@dec.ny.gov".*

NOTES:

Total area: 3.256± acres.
Present Zone: CA–Commercial District
Location of underground utilities taken by field measurement where practicable, otherwise taken from various other sources and are approximate only.
Tax Map Nos. 94.–05–6, 94.–20–1 & 2
C.E.P. 44

LEGEND:

- LS — indicates light stand
- indicates utility pole, anchor & overhead lines
- IPF / MON. FND — indicates iron pipe and/or monument found
- indicates bollard
- indicates sign
- 12" CMP — indicates storm culvert
- 6" G — GV, GLM — indicates gas main, gas valve & gas line marker
- 8" W — WV, HYD — indicates water main, water valve & hydrant
- 18" D — CB, D — indicates storm sewer, catch basin & manhole
- 8" S — SV, S — indicates sanitary sewer, sewer vent & manhole
- TEL MH — U-TEL — TEL — indicates underground telephone line, manhole & box
- UE — ELEC MH — indicates underground electric line & manhole
- CATV — TV — indicates underground television cable & box
- indicates 6" diameter bollard (typical)
- W — indicates 6" diameter monitoring well (typical)
- indicates boundary line
- indicates adjacent parcel line
- indicates old/original parcel line
- indicates easement line
- indicates centerline road

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

THE UNDERSIGNED HEREBY CERTIFIES THAT THIS IS A CORRECT MAP MADE FROM AN ACTUAL SURVEY.

N.Y.S. Licensed Land Surveyor

\\SERVER\Civil 3D Projects\ONONDAGA COUNTY\TRACTS\JMA WIRELESS\dwg\JMA_FP_DEC EASEMENT.dwg

REVISIONS	
	9-8-2021

DEC EASEMENT SURVEY
No. 140 CORTLAND AVENUE
JMA WIRELESS
PART OF BLOCK No. 140
CITY OF SYRACUSE
ONONDAGA COUNTY, NEW YORK

STATE OF NEW YORK · TIMOTHY J. COTTER · 050858 · LICENSED LAND SURVEYOR

IANUZI & ROMANS LAND SURVEYING, P.C.
5251 WITZ DRIVE
NORTH SYRACUSE, NY 13212
PHONE: (315) 457-7200
FAX: (315) 457-9251
EMAIL: mail@romanspc.com

DATE: JULY 7, 2021
SCALE: 1" = 30'
FILE No.: 2286.086
SHEET No.
F.B. No. 1658

APPENDIX B

List of Contacts for Persons Involved with the Site

LIST OF SITE CONTACTS

Title	Name	Phone	Email
Site Owner	Ranalli/Taylor St., LLC	315-432-5087	dpeios@jmawireless.com
Qualified Environmental Professional	Scott Smith, P.E., CHA Consulting, Inc.	315-257-7227	ssmith@chacompanies.com
Remedial Engineer	Samantha Miller, P.E., CHA Consulting, Inc.	315-257-7154	smiller@chacompanies.com
NYSDEC DER Project Manager	Michael Belveg	315-426-7446	Michael.belveg@dec.ny.gov
NYSDEC DER Project Manager's Supervisor	Joshua Cook	315-426-7411	Joshua.cook@dec.ny.gov
NYSDEC Site Control	Kelly Lewandowski	518-402-9569	Kelly.lewandowski@dec.ny.gov
NYSDOH Project Manager	Angela Martin	518-402-7860	beei@health.ny.gov
Remedial Party Attorney	Dean Sommer	518-438-9907	dsommer@youngsommer.com

APPENDIX C

Site Specific Boring Logs

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-100

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 10:10:00 AM
FINISH DATE and TIME: 4/6/2018 10:30:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		**ASPHALT PAVEMENT**, ASPHALT			
								SUBBASE, SAND & GRAVEL, grey and reddish brown, compact, moist **(SW)**			
								FILL:, Silty CLAY, some Sand, brown, stiff, moist **(CH)**			
1	5	3.8	0.0			2		**FILL:**, SAND & GRAVEL, brown, compact, moist **(SW)**			
						4		**FILL:**, BRICK FRAGMENTS, bright red, compact, moist **(SW)**			
								FILL:, SAND & GRAVEL, brown, compact, moist **(SW)**			
						6		**FILL:**, Silty CLAY, some Gravel, brown, stiff, moist **(CH)**			
								FILL:, ASPHALT FRAGMENTS, black, loose **(GW)**			
2	5	3.6	0.0			8		**Silty CLAY**, brown, stiff, wet **(CH)**			
						10		**SAND & GRAVEL**, brown, loose, saturated **(SW)**		Collected soil sample SOIL-100 from 9.0 - 10.0' bgs @ 10:40	
						12		**Silty CLAY**, some Gravel, gray, wet **(CL-ML)**			
3	5	3.5	0.0					**SILT**, some Shell Fragments, dark brown, stiff, moist **(ML)**			
						14					
						16					
4	5	3.2	0.0			18		**SAND & GRAVEL**, gray, compact, wet **(SW)**			

End of Boring at 20 ft

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-101

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/9/2018 8:30:00 AM
FINISH DATE and TIME: 4/9/2018 9:00:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT PAVEMENT, ASPHALT			
								SUBBASE, GRAVEL, gray, loose **(GW)**			
								FILL:, GRAVEL, some Sand, brown, compact, moist **(GW)**			
1	5	3.8	0.3			2		**FILL:**, SAND & GRAVEL, brown, compact, moist **(SW)**			
						4		**FILL:**, ROCK FRAGMENTS, white, compact **(GW)**			
						6					
2	5	2.1	0.3			8		**FILL:**, SAND, some gravel, brown, compact, moist **(SW)**			
								Silty CLAY, brown, compact, moist **(CH)**			
						10		**SILT**, brown to dark brown, compact, moist **(ML)**			
			0.2			12		**SILT**, white, soft, moist **(ML)**			
3	5	3.7						**SILT**, dark brown, stiff, moist **(ML)**			
						14		**SILT**, gray, soft, moist **(ML)**			
						16		**f. SAND**, some Silt, brown, loose, saturated **(SM)**		Collected soil sample SOIL-101 from 15.0 - 16.0' bgs @ 08:50	
			0.1			18					
4	5	4.5									

End of Boring at 20 ft

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-102

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 10:40:00 AM
FINISH DATE and TIME: 4/6/2018 11:00:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT PAVEMENT, ASPHALT			
								SUBBASE, GRAVEL & ASPHALT, loose **(GW)**			
								FILL:, SAND & GRAVEL, brown, compact, moist **(SW)**			
1	5	2.8	2.8			2					
						4					
								FILL:, SAND & GRAVEL, gray, compact, wet **(SW)**			
			156.2			6					
2	5	3.2									
			388.7			8					
						10		**SILT**, some Gravel, dark brown, soft, saturated **(ML)**			
			25.1			12					
3	5	4						**SILT**, some SAND, white w/ brown streaks, moist **(ML)**			
			357			14					
								Sandy SILT, brown, soft, saturated **(ML)**			
						16		**SILT**, some Sand, gray, saturated **(ML)**		Collected soil sample SOIL-102 from 15.0 - 18.0' bgs @ 11:20	
4	5	5	403.1			18		**SAND & GRAVEL**, gray, saturated **(SW)**			

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-102

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
5	5	5				22 24		**fmc SAND**, gray, wet **(SW)** **f. GRAVEL**, some Sand, rounded, brown, loose, moist **(GW)** **Silty CLAY**, brown, stiff, wet **(CH)**			
						26 28 30 32 34 36 38 40 42 44		End of Boring at 25 ft			

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-103

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 2:20:00 PM
FINISH DATE and TIME: 4/6/2018 2:40:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT PAVEMENT, ASPHALT			
								SUBBASE, GRAVEL, some Sand and Asphalt, loose **(GW)**			
						2		**FILL:**, SILT & GRAVEL, reddish brown, stiff, moist **(ML)**			
1	5	3.8	0.3					**FILL:**, SAND & GRAVEL, trace Silt, brown, compact, moist **(SW)**			
						4		**FILL:**, SILT & GRAVEL, trace Sand, brown, stiff, moist **(ML)**			
								FILL:, GRAVEL, gray, loose, moist **(GW)**			
						6		**FILL:**, SAND & GRAVEL, red, compact, moist **(SW)**			
2	5	3.6	0.0					**Silty CLAY**, gray, stiff, wet **(CH)**			
						8					
								SILT, dark brown to tan, stiff, wet **(ML)**			
						10		**Silty CLAY**, brown and gray, soft, saturated **(CH)**			
			0.0					**SILT**, dark brown, stiff, wet **(ML)**			
						12					
3	5	3.5									
						14		**SAND & SILT**, gray, compact, wet **(SM/ML)**			
								SILT, some Sand, gray, soft, wet **(ML)**			
						16		**SAND & SILT**, gray, medium compact, wet **(SM/ML)**		Collected soil samples SOIL-103, MS101, and MSD101 from 14.0 - 17.0' bgs @ 14:50	
4	5	3.2	0.0								
						18					

End of Boring at 20 ft

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-104

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 11:30:00 AM
FINISH DATE and TIME: 4/6/2018 11:50:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT PAVEMENT, ASPHALT			
								SUBBASE, GRAVEL, black and gray, loose **(GW)**			
			1.2			2		**FILL:**, SILTY CLAY, bluish gray, stiff, moist **(CH)**			
1	5	4									
						4		**FILL:**, SILT & SAND, some Gravel, moist **(ML)**			
						6		**FILL:**, SAND & GRAVEL, some silt, gray, compact, wet **(SM)**			
			641								
2	5	3.7				8					
			922					**Silty CLAY**, gray to dark brown, stiff, moist **(CH)**			
			106			10					
						12					
3	5	3.2									
						14					
						16		**Silty CLAY**, brown, moist **(CH)**		No PID readings 10 -25' due to instrument malfunction. Strong odors and sheen throughout interval.	
4	5	4.5				18				Collected soil sample SOIL-104 from 16.0 - 18.0' bgs @ 12:15	
								fm SAND, brown to gray, wet **(SW)**			

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-104

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			41.6					**SAND & SILT**, saturated **(SM/ML)**			
5	5					22		**SAND & GRAVEL**, saturated **(SW)**			
								SILT & SAND, saturated **(SM/ML)**			
			2.1			24					
								End of Boring at 25 ft			
						26					
						28					
						30					
						32					
						34					
						36					
						38					
						40					
						42					
						44					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-105

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 2:10:00 PM
FINISH DATE and TIME: 4/6/2018 2:30:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT PAVEMENT, ASPHALT **(ML)**			
								SUBBASE, GRAVEL and ASPHALT, black to gray **(GW)**			
						2		**FILL:**, SILTY CLAY, some Gravel, brown, stiff, moist **(CH)**			
1	5	3.2	0.0					**FILL:**, GRAVEL, gray **(GW)**			
						4		**FILL:**, SAND & GRAVEL, brown, compact, moist **(SW)**			
								FILL:, GRAVEL, angular, gray **(GW)**			
						6					
								Silty CLAY, gray to brown, stiff, moist **(CH)**			
2	5	3.3	0.0			8					
						10		**SILT & SAND**, small wood fragments, stiff, moist **(SM/ML)**			
								Silty CLAY, black, stiff, moist **(CH)**			
						12		**Silty CLAY**, dark brown and gray, moist **(CH)**			
3	5	3.1	0.0								
						14		**fm SAND**, trace Gravel, gray, compact, moist **(SW)**			
								SILT, some Sand, gray, soft, saturated **(ML)**			
						16					
4	5	3.5	0.0			18				Collected soil sample SOIL-105 from 17.0 - 19.0' bgs @ 14:40	

End of Boring at 20 ft

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-106

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 1:00:00 PM
FINISH DATE and TIME: 4/6/2018 1:20:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		**ASPHALT PAVEMENT**, ASPHALT			
								SUBBASE, GRAVEL and ASPHALT, gray, loose **(GW)**			
								FILL:, SAND & GRAVEL, brown, compact, moist **(SW)**			
1	5	1.5	0.1			2		**FILL:**, GRAVEL, some Sand, brown to gray, compact, moist **(GW)**			
						4					
								FILL:, SAND & GRAVEL, brown, compact, wet **(SW)**			
						6		**SILT**, some Gravel, brown, stiff, moist **(ML)**			
2	5	2.5	0.1			8					
								Silty CLAY, trace Gravel, brown, stiff, moist **(CH)**			
						10		**SAND & GRAVEL**, brown, loose, saturated **(SW)**			
						12					
3	5	4.5	0.0			14				Collected soil sample SOIL-106 from 12.0 - 15.0' bgs @ 13:30	
						16		**fmc SAND**, trace Gravel, brown, loose, saturated **(SW)**			
								SAND & SILT, brown, loose, saturated **(SM/ML)**			
4	5	3.5	0.0			18					

End of Boring at 20 ft

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-107

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Chris INSPECTOR: K. Ehmann
START DATE and TIME: 4/20/2018 12:20:00 PM
FINISH DATE and TIME: 4/20/2018 1:15:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								TOPSOIL, some roots, brown, compact, moist **(TOPSOIL)**			
1	4	2.8				2		**FILL:**, SILT & SAND, little Gravel, brown, compact, moist **(ML/SM)**			
								FILL:, SAND & GRAVEL, brown amd gray, compact, moist **(SW)**			
						4		**FILL:**, BRICK FRAGMENTS, red **(GW)**			
								FILL:, GRAVEL/ROCK FRAGMENTS **(GW)**			
								FILL:, SAND & GRAVEL, dark brown, compact, moist **(SW)**			
2	4	2				6		**Silty CLAY**, brown, stiff, moist **(CH)**			
						8		**Silty CLAY**, dark brown, stiff, moist **(CH)**			
								SILT, dark brown, medium stiff, moist **(ML)**			
3	4	4				10		**f SAND**, brown, compact, moist **(SP)**			
						12		**f SAND**, gray, loose, wet **(SP)**		Collected soil sample SOIL-107 from 11.0 - 12.0' bgs @ 13:00	
4	4	2.4				14		**f SAND**, gray, compact, moist **(SP)**			
						16		End of Boring at 16 ft			
						18					

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-108

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 2:00:00 PM
FINISH DATE and TIME: 4/5/2018 2:20:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			5.2					**CONCRETE**			
								SUBBASE, GRAVEL, gray, loose **(GW)**			
						2		**FILL:**, SAND & GRAVEL (angular), brown to light brown, loose, moist **(SW)**			
1	5	2	0.0			4					
						6		**FILL:**, SAND & GRAVEL, light brown, compact, moist **(SW)**			
			0.0								
2	5	3.2				8		**Silty CLAY**, gray, compact, moist **(CH)**			
						10					
			0.0					**SILT & SAND**, brown, wet **(SM/ML)**			
3	5	4.2				12					
						14		**SILT & SAND**, dark brown, wet **(SM/ML)**			
								SAND & GRAVEL, brown, saturated, loose **(SW)**			
			0.0			16				Collected soil sample SOIL-108 & DUP101 from 15.0 - 17.0' bgs @ 14:20	
4	5	4				18					
								Silty CLAY, brown, soft, wet **(CH)**			

End of Boring at 20 ft

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-109

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 1:50:00 PM
FINISH DATE and TIME: 4/5/2018 2:10:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			5.7					**CONCRETE**			
								SUBBASE, GRAVEL, gray, loose **(GW)**			
						2		**FILL:**, SAND & c GRAVEL, gray to brown, loose, moist **(SW)**			
1	5	2.3	0.0								
						4					
			0.0								
						6					
								Silty CLAY, brown, stiff, moist **(CH)**			
2	5	2.5									
						8		**Silty CLAY**, black, stiff, moist **(CH)**			
			0.0								
						10		**Silty CLAY**, brown to dark brown, soft, saturated **(CH)**			
			0.0								
						12					
3	5	5								Collected soil sample SOIL-109 from 12.0 - 13.0' bgs @ 14:10	
						14					
								SAND & GRAVEL, brown, compact, moist **(SW)**			
						16					
			0.0					**SAND & GRAVEL**, SAND & f GRAVEL, dark brown, compact, wet **(SW)**			
4	5	5									
						18					
								SAND & SILT, brown, compact, moist **(SM/ML)**			

End of Boring at 20 ft

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-110

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 3:00:00 PM
FINISH DATE and TIME: 4/5/2018 3:20:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			5.7					**CONCRETE**			
								SUBBASE, GRAVEL & CRUSHED STONE, gray, loose **(GW)**			
						2		**FILL:**, SILT & SAND, some Gravel, brown, compact, moist **(SM/ML)**			
1	5	2.3	0.0								
						4		**FILL:**, SILT & SAND, light brown, stiff, moist **(SM/ML)**			
			702.9			6		**FILL:**, SAND & GRAVEL, brown and black, compact, moist **(SW)**			
								FILL:, SAND & GRAVEL, gray, loose, wet **(SW)**			
2	5	2.5				8		**Silty CLAY**, gray, stiff, moist **(CH)**			
			273			10		**Silty CLAY**, black, stiff, moist **(CH)**			
			1,272			12		**SILT & SAND**, gray, medium compact, moist **(SM/ML)**			
3	5	5								Collected soil sample SOIL-110 from 12.0 - 13.0' bgs @ 15:30	
			123.1			14		**SAND & GRAVEL**, dark gray, compact, moist **(SW)**			
			5.9					End of Boring at 15 ft			
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-111

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 12:30:00 PM
FINISH DATE and TIME: 4/5/2018 12:50:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			11.5					**CONCRETE**			
								SUBBASE, GRAVEL & CRUSHED STONE, gray, loose **(GW)**			
						2		**FILL:**, SAND & GRAVEL, black, compact, moist **(SW)**			
1	5	4.6	0.0					**FILL:**, SILT & SAND, brown, compact, moist **(SM/ML)**			
						4					
			0.0					**FILL:**, SILT & SAND, some gravel, brown, compact, moist **(SM/ML)**			
			0.0					**FILL:**, SAND & SILT, some Gravel, brown, compact, moist **(SM/ML)**			
						6		**FILL:**, SAND & GRAVEL, black, compact, moist **(SW)**			
2	5	4						**Silty CLAY**, brown, soft, moist **(CH)**			
						8					
								Silty CLAY, black, stiff, moist **(CH)**			
						10		**Silty CLAY**, some Gravel, brown, compact, moist **(CL)**			
			0.0					**SILT & SAND**, some Gravel, brown, compact, moist **(SM/ML)**			
								Silty CLAY, brown, stiff, moist **(CH)**			
						12		**Silty CLAY**, dark brown, soft, moist **(CH)**			
3	5	4.8									
								SAND & GRAVEL, dark brown, compact, moist **(SW)**		Collected soil sample SOIL-111 from 13.0 - 14.0' bgs @ 12:50	
			1.6			14					
								End of Boring at 15 ft			
						16					
						18					

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-112

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 1:15:00 PM
FINISH DATE and TIME: 4/5/2018 1:30:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			3.9					**CONCRETE**			
								SUBBASE, GRAVEL, gray, loose **(GW)**			
			0.0					**FILL:**, SAND & GRAVEL, brown to light brown, compact, moist **(SW)**			
						2					
1	5	3.1						**FILL:**, SAND & GRAVEL, brown, compact, moist **(SW)**			
			0.0			4					
								FILL:, SAND, little PVC fragments, black, loose, moist **(SW)**			
						6		**FILL:**, SAND & GRAVEL, black, white, brown, to tan, loose, moist **(SW)**			
			0.0					**SILT & CLAY**, brown, stiff, moist **(ML/CL)**			
2	5	3.5				8					
			0.0					**Silty CLAY**, gray, stiff, moist **(CH)**			
								SILT & SAND, black, compact, moist **(SM/ML)**			
						10		**SAND**, some Silt and Gravel, brown, loose, wet **(SM)**			
			0.0					**SILT & SAND**, black, loose, wet **(SM/ML)**			
						12		**Silty CLAY**, dark brown, stiff, moist **(CH)**			
3	5	3.2									
						14					
			2.7					**Silty CLAY**, brown, soft, wet **(CH)**			
						16					
								SAND & GRAVEL, loose, brown, wet **(SW)**			
4	5	3.7				18				Collected soil sample SOIL-112 from 17.0 - 18.0' bgs @ 13:40	
			1.8					**Silty CLAY**, brown, stiff, wet **(CH)**			
								SAND & GRAVEL, black, compact, wet			

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-112

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								(SW) End of Boring at 20 ft			
						22					
						24					
						26					
						28					
						30					
						32					
						34					
						36					
						38					
						40					
						42					
						44					

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-113

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 11:15:00 AM
FINISH DATE and TIME: 4/5/2018 11:40:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			0.0			2		**CONCRETE** **SUBBASE**, SAND & ang. GRAVEL, gray, loose **(GW)**			
1	5	3.4	2.1					**FILL:**, SAND & mf GRAVEL, light brown, compact, moist **(SW)**			
			0.0			4		**FILL:**, SILTY CLAY & GRAVEL, brown, stiff, moist **(CL)** **FILL:**, GRAVEL, gray, compact, moist **(GW)** **FILL:**, GRAVEL, some Sand, black, compact, moist **(GW)**			
						6		**FILL:**, SAND & mf GRAVEL, black, compact, moist **(GW)**			
			0.0								
2	5	3.5				8		**Silty CLAY**, dark to light brown, stiff, moist **(CH)**			
						10		**Silty SAND**, light brown, compact, moist **(SM)**			
			0.0					**Silty CLAY**, dark brown, stiff, moist **(CH)**			
						12					
3	5	4									
						14		**SAND & GRAVEL**, dark brown, compact, moist **(SW)**		Collected soil sample SOIL-113 from 12.0 - 15.0' bgs @ 11:40	
			0.9					End of Boring at 15 ft		Large wood fragment in bottom of sleeve	
						16					
						18					

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-114

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 10:30:00 AM
FINISH DATE and TIME: 4/5/2018 10:50:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CONCRETE			
								SUBBASE, Silty SAND & f GRAVEL, brown, loose **(SM)**			
			0.0					**FILL:**, Clayey SILT, brown, stiff, moist **(ML)**			
1	5	3				2					
						4					
								FILL:, Silty CLAY, brown, stiff, moist **(CH)**			
						6		**FILL:**, fmc SAND, some Silt, Gravel, brown with lenses of black, compact, moist **(SM)**			
			0.0					**Silty CLAY**, gray, stiff, moist **(CH)**			
2	5	4.3				8					
						10		**Sandy SILT**, brown, stiff, moist **(ML)**			
			0.0					**Silty SAND & GRAVEL**, brown, compact, moist **(SM)**			
			0.0					**Silty CLAY**, dark brown, stiff, moist **(CH)**			
						12		**Silty CLAY**, brown, some black steaking, stiff, moist **(CH)**			
3	5	4	0.6								
			1.9			14					
								Silty CLAY, brown, soft, saturated **(CH)**			
			0.0			16		**SAND & GRAVEL**, dark brown, loose, wet **(SW)**			
								SILT & SAND, little Gravel, brown, stiff, wet **(SM/ML)**			
4	5	4.5	1.9			18		**SAND & GRAVEL**, dark brown, compact, wet **(SW)**		Collected soil samples SOIL-114/DUP-100 from 17.0 - 20.0' bgs @ 11:00/11:10	
			0.0								

End of Boring at 20 ft

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-115

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 8:05:00 AM
FINISH DATE and TIME: 4/5/2018 8:15:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CONCRETE			
								FILL:, Sandy SILT, some Gravel, brown, soft, moist **(ML)**			
1	3	1.3	0.0			2		**FILL:**, Silty SAND & GRAVEL, brown, compact, moist **(SM)**			
						4					
2	3	2.1	0.0					**FILL:**, Silty SAND, some Gravel, brown, compact, moist **(SM)**			
						6					
			2.5								
3	2	1.5						**FILL:**, Silty SAND, black, loose, wet **(SM)**			
			6.1			8		End of Boring at 8 ft		Collected soil sample SOIL-115 from 7.0 - 8.0' bgs @ 09:45 Refusal @ 8.0 ft bgs. Advance offset boring SOIL-115A ~6 ft E & 2 ft N of SOIL-115	
						10					
						12					
						14					
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-115A

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/5/2018 10:15:00 AM
FINISH DATE and TIME: 4/5/2018 10:20:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CONCRETE			
								SUBBASE, Silty SAND & GRAVEL, dark brown, loose, **(SM)**			
1	3	0.6	0.6			2		**FILL:**, GRAVEL, angular, gray, loose, moist **(GW)**			
2	3	0.9	2.1			4					
3	1	0.7	5.2			6		**FILL:**, SAND & GRAVEL, brown, compact, saturated **(SW)**			
								FILL:, SAND & GRAVEL, dark brown, compact, wet **(SW)**		Refusal @ 7.0 ft bgs.	
						8		End of Boring at 7 ft			
						10					
						12					
						14					
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-116

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/4/2018 12:00:00 PM
FINISH DATE and TIME: 4/4/2018 12:30:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			2.4					**CONCRETE**			
								SUBBASE, GRAVEL, gray, loose **(GW)**			
1	3	2	7.2			2		**FILL:**, SILT & GRAVEL, brown, compact, moist **(ML)**			
			22.4					**FILL:**, ROCK FRAGMENTS, gray **(GP)**			
								FILL:, Silty CLAY, some Gravel, brown, stiff, moist **(CL)**			
			106.8					**FILL:**, Silty CLAY & GRAVEL, brown, stiff, moist **(CL)**			
			195.5			4		**FILL:**, ROCK FRAGMENTS, red **(GP)**			
2	3	3	57.6					**FILL:**, Silty SAND, some Gravel, black, loose, moist **(SM)**			
			63.7					**FILL:**, Sandy SILT, little Gravel, dark gray, stiff, moist **(ML)**			
			72.8			6					
			136.8					**FILL:**, Sandy SILT, black, stiff, moist **(ML)**			
3	3	2.5	253.4					**SAND & GRAVEL**, light brown and red, compact, moist **(SW)**			
			>15,000			8		**SAND & GRAVEL**, gray and white, loose, wet **(SW)**		Collected soil sample SOIL-116 from 8.0 - 9.0' bgs @ 12:35	
			117.8					**SAND & GRAVEL**, black, loose saturated **(SW)**			
			>15,000			10					
3	3	3	255.1					**Silty SAND & GRAVEL**, black, compact, wet **(SM)**			
			138					**Silty CLAY**, black, stiff, moist **(CH)**			
			206.8			12		**SILT**, trace Gravel, brown, saturated **(ML)**			
			43.9								
			66.0					**SILT**, brown, stiff, wet **(ML)**			
3	3	3	22.8								
			35.1			14		**SILT**, brown, soft, saturated **(ML)**			
								End of Boring at 15 ft			
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-117

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/4/2018 1:10:00 PM
FINISH DATE and TIME: 4/4/2018 1:30:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			2.5					**CONCRETE**			
			2.5					**SUBBASE**, GRAVEL, little fines, gray, loose, dry **(GW)**			
						2		**FILL:**, SAND & GRAVEL, brown, compact, moist **(SW)**			
1	5	3.5	7.3					**FILL:**, Silty CLAY, red, stiff, moist **(CL)**			
			5.6			4		**FILL:**, SILT, brown, stiff, moist **(ML)**			
			0.6					**FILL:**, Silty CLAY, brown, stiff, moist **(CH)**			
			0.5			6		**FILL:**, SAND & GRAVEL, black, compact, moist **(SW)**			
			3.1					**FILL:**, SAND & GRAVEL, gray, loose, saturated **(SW)**			
2	5	3.8	2.5					**CLAY**, black, stiff, moist **(CH)**			
			3.3			8		**CLAY**, dark gray, stiff, wet **(CH)**		Collected soil sample SOIL-117 from 9.0 - 10.0' bgs @ 13:30	
			0.9					**SAND & GRAVEL**, dark gray, compact, wet **(SW)**			
			1.7			10		End of Boring at 15 ft			
			1.5								
3	5	5	0.6			12					
			2.3								
			2.1			14					
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-118

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/4/2018 3:00:00 PM
FINISH DATE and TIME: 4/4/2018 3:20:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CONCRETE			
								SUBBASE, GRAVEL, gray and black, loose, wet (from coring) **(GW)**			
			1.9			2		**FILL:**, GRAVEL, angular, gray, loose, moist **(GW)**			
1	5	3.5						**FILL:**, fmc SAND, some Silt, brown, compact, moist **(SM)**			
						4		**FILL:**, GRAVEL, angular, gray, loose **(GW)**			
			0.1			6		**FILL:**, GRAVEL, angular, gray, loose **(GW)**			
								Silty CLAY, gray, soft, moist **(CH)**		Collected soil sample SOIL-118 from 7.0 - 8.0' bgs @ 15:30	
2	5	3.8				8					
			0.1					**Silty CLAY**, black, soft, moist **(CH)**			
						10		**SILT & SAND**, brown, stiff, moist **(SM/ML)**			
								SILT & CLAY, gray, soft, moist **(ML/CL)**			
			0.0					**Silty CLAY**, black, stiff, moist **(CH)**			
						12		**Clayey SILT**, brown, soft, moist **(ML)**			
3	5	5									
			0.1					**Clayey SILT**, black, soft, moist **(ML)**			
						14		**SAND & GRAVEL**, black, compact, moist **(SW)**			
								End of Boring at 15 ft			
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-119

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/4/2018 1:45:00 PM
FINISH DATE and TIME: 4/4/2018 2:00:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			2.9					**CONCRETE**			
								SUBBASE, SAND & GRAVEL, brown, compact **(SW)**			
			8.3					**FILL:**, SAND, light brown, loose, moist **(SW)**			
						2		**FILL:**, Silty CLAY & SAND, brown, stiff, moist **(CL/SC)**			
1	5	3	69.9								
			18.3			4		**FILL:**, GRAVEL & SAND, black, loose, moist **(GW)**			
			1.6					**FILL:**, Silty CLAY, brown, stiff, moist **(CH)**			
			7.2					**FILL:**, BRICK FRAGMENTS, red **(SW)**			
						6		**FILL:**, SILT, black, stiff, moist **(ML)**			
			9.7					**FILL:**, Charcoal Fragments, black **(GW)**			
								FILL:, SAND & GRAVEL, red, compact, moist **(SW)**			
2	5	3.3	72					**FILL:**, SAND & GRAVEL, gray, loose, moist **(SW)**			
			32.3			8					
								Silty CLAY, some Sand, gray, stiff, moist **(CL)**		Collected soil sample SOIL-119 from 9.0 - 10.0' bgs @ 13:05	
						10		**Silty CLAY**, dark gray, stiff, moist **(CH)**			
			125.4								
			82.0			12					
3	5	1.3									
			37.0			14					
								End of Boring at 15 ft			
						16					
						18					

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-120

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/4/2018 2:15:00 PM
FINISH DATE and TIME: 4/4/2018 2:30:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			2.4					**CONCRETE**			
								SUBBASE, GRAVEL, gray, loose, wet (from coring) **(GW)**			
			0.8			2		**FILL**, SILT, trace Sand, brown, compact, moist **(ML)**			
1	5	1.3						**FILL**, GRAVEL, gray, loose, dry **(GW)**			
						4		**FILL**, Silty CLAY & GRAVEL, gray, compact, moist **(CL)**			
			3.9					**FILL**, SAND & GRAVEL, brown, compact, wet **(SW)**			
						6		**FILL**, SAND & GRAVEL, black, loose, moist **(SW)**			
			1.5					**FILL**, Silty SAND & GRAVEL, gray, wet **(SM)**			
2	5	3.6	0.3					**FILL**, Silty SAND, dark gray, wet **(SM)**			
						8		**FILL**, SAND & GRAVEL, gray, saturated **(SW)**			
			0.9					**CLAY & SILT**, dark gray, stiff, moist **(CL-ML)**			
			0.4			10		**SILT**, black & gray, stiff, moist **(ML)**		Collected soil sample SOIL-120 from 10.0 - 11.0' bgs @ 14:40	
			0.5								
			0.4			12					
3	5	4.5	0.5					**SILT**, gray, soft, moist **(ML)**			
			0.3			14		**Silty CLAY**, gray, stiff, moist **(CH)**			
								SILT, gray, soft, moist **(ML)**			
								End of Boring at 15 ft			
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-121

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/4/2018 3:30:00 PM
FINISH DATE and TIME: 4/4/2018 3:50:00 PM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								CONCRETE			
								SUBBASE, GRAVEL, gray, loose, wet (from coring) **(GW)**			
1	5	1.8	0.1			2		**FILL**, SAND & GRAVEL, little Brick Fragments, red, black, orange, and brown, moist **(SW)**			
						4		**FILL**, SAND, brown, loose, moist **(SW)**			
								FILL, Silty CLAY, brown, stiff, moist **(CH)**			
			0.2			6		**Silty CLAY**, trace Gravel, brown, stiff, moist **(CH)**			
2	5	4	0.3			8		**SILT**, Black, stiff, moist **(ML)**		Collected soil sample SOIL-121 from 9.0 - 10.0' bgs @ 16:00	
						10		**CLAY & GRAVEL**, black, stiff, moist **(CL)**			
								SILT, light brown, stiff, wet **(ML)**			
3	5	4.4	0.1			12		**SILT & SAND**, black, wet **(SM/ML)**			
						14		**SAND & GRAVEL**, black to brown, wet **(SW)**			
								End of Boring at 15 ft			
						16					
						18					

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PROJECT NUMBER: 33525 04/24/2018

Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-122

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 10:00:00 AM
FINISH DATE and TIME: 4/6/2018 10:20:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
			0.0					**ASPHALT PAVEMENT**			
								SUBBASE, GRAVEL & ASPHALT, gray to black, medium compact **(GW)**			
						2		**FILL**, SAND & GRAVEL, grayish brown to black, compact, moist **(SW)**			
1	5	3.4						**FILL**, SAND, some Brick Fragments, red to orange, compact, moist **(SW)**			
						4		**FILL**, SAND & GRAVEL, brown, compact, moist **(SW)**			
								Silty CLAY, brown, stiff, moist **(CH)**			
						6		**Silty CLAY**, gray to brown, stiff, moist **(CH)**			
			0.0								
2	5	3.8				8					
								SAND & SILT, gray, compact, wet **(SM/ML)**		Collected soil sample SOIL-122 from 9.0 - 10.0' bgs @ 10:10	
						10		**SAND & GRAVEL**, brown, loose to compact, saturated to wet **(SW)**			
			0.0								
3	5	4.8				12					
						14					
								End of Boring at 15 ft			
						16					
						18					

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Former Coyne Laundry
SUBSURFACE LOG
HOLE NUMBER SOIL-123

PROJECT NUMBER: 33525 04/24/2018

LOCATION: Syracuse, New York
CLIENT: Ranalli/Taylor St., LLC
CONTRACTOR: NYEG
DRILLER: Tom/Jesse INSPECTOR: K. Ehmann
START DATE and TIME: 4/6/2018 9:30:00 AM
FINISH DATE and TIME: 4/6/2018 9:50:00 AM
SURFACE ELEV: CHECKED BY:

DRILL FLUID: DRILLING METHOD: Direct Push - Macrocore

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								ASPHALT PAVEMENT			
								SUBBASE, GRAVEL mixed with ASPHALT, loose **(GW)**			
			0.0			2		**FILL**, SAND & GRAVEL, brown, compact, moist **(SW)**			
1	5	3.8						**FILL**, SAND & GRAVEL, gray, compact, moist **(SW)**			
						4		**FILL**, Silty CLAY, brown, stiff, moist **(CH)**			
								FILL, Silty CLAY, brown, stiff, moist, debris material at 7.5' **(CH)**			
			0.0			6					
2	5	4				8		**Silty CLAY**, dark brown, stiff, moist **(CH)**			
								Silty CLAY, gray, stiff, moist **(CH)**			
						10		**Silty CLAY**, gray, stiff, moist **(CH)**			
								SAND, some Silt, gray, loose, wet **(SM)**			
			0.0			12					
3	5	4.5								Collected soil sample SOIL-123 from 12.0 - 14.0' bgs @ 09:50	
						14		**SAND & GRAVEL**, gray, compact, wet **(SW)**			
								SAND & GRAVEL, gray, loose, wet **(SW)**			
						16		**SAND**, gray, loose, wet **(SW)**			
4	5	4.5									
						18		**SAND & GRAVEL**, gray, wet **(SW)**			
								Silty CLAY, brown, stiff, wet **(CH)**			

End of Boring at 20 ft

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Phase II Clinton and Cortland
SUBSURFACE LOG
HOLE NUMBER SB-100

PROJECT NUMBER: 059294.001.0008500 12/20/2020

LOCATION: Syracuse, New York
CLIENT: JMA Wireless
CONTRACTOR: NYEG Drilling
DRILLER: J. Rauscher INSPECTOR: K. Ehmann
START DATE and TIME: 12/7/2020 8:55:00 AM
FINISH DATE and TIME: 12/7/2020 9:20:00 AM
SURFACE ELEV: CHECKED BY: K. Ehmann

DRILL FLUID: None DRILLING RIG:

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		**ASPHALT PAVEMENT**, **(FILL)**			
								SUBBASE, **(FILL)**			
								f.m.c. SAND and f. GRAVEL, brown, compact, moist **(FILL)**			
S1	5	2.9	0.2			2					
						4					
						6		**f. GRAVEL**, Some f. Sand, light brown, loose, wet **(GP)**		Soil lithology is interpreted based on soil recovery amount. The depth of fill material is estimated relative to the soil recovery amount.	
S2	5	2	0.0					**SILT**, dark brown, medium stiff, moist **(ML)**			
						8					
						10					
								Silty CLAY, brown, soft, moist **(CL-ML)**			
						12		**SILT**, Some f. Gravel, grey, soft, moist **(ML)**			
S3	5	5	0.2							Collected soil sample SOIL-SB-100 from 12ft to 14ft bgs at 09:20.	
								f. SAND, grey, medium compact, moist **(SM)**			
						14					
								f.m.c. SAND and SILT, loose, saturated **(SM)**			
						16					
S4	5	5	0.0								
						18		**f. SAND**, grey, medium compact, wet **(SM)**			
								lense of f. Gravel			

End of Boring at 20 ft

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Phase II Clinton and Cortland
SUBSURFACE LOG
HOLE NUMBER SB-101

PROJECT NUMBER: 059294.001.0008500 12/20/2020

LOCATION: Syracuse, New York
CLIENT: JMA Wireless
CONTRACTOR: NYEG Drilling
DRILLER: J. Rauscher INSPECTOR: K. Ehmann
START DATE and TIME: 12/7/2020 9:35:00 AM
FINISH DATE and TIME: 12/7/2020 10:05:00 AM
SURFACE ELEV: CHECKED BY: K. Ehmann

DRILL FLUID: None DRILLING RIG:

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	12-11-20	11:30	8.7		

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	DEPTH (Feet)	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.
					0	**ASPHALT PAVEMENT**, **(FILL)**		
						SUBBASE, **(FILL)**		
S1	5	2.5	0.0		2	**c. GRAVEL**, little c. sand, grey, loose, moist **(FILL)**		
					4	**f.c. GRAVEL**, Some f.m.c. Sand, grey, medium compact, moist **(FILL)**		
					6	**c. GRAVEL**, little f.m.c. sand, grey, loose, moist **(GP)**		Soil lithology is interpreted based on soil recovery amount. The depth of fill material is estimated relative to the soil recovery amount.
S2	5	3.8	0.0			**f. SAND**, tan, white, grey and black, medium compact, moist **(SP)**		
					8	**Silty CLAY**, light brown, stiff, moist **(CL-ML)**		
						becomes dark brown		
					10	**SILT**, grey, soft, moist **(ML)**		
					12	**f. SAND**, Some Silt, grey, loose, moist **(SM)**		
S3	5	4.4	0.0			wood		
						f.m.c. SAND, little gravel, grey, loose, moist **(SP)**		
					14	**f.c. GRAVEL**, little f.m.c. sand, brown, compact, moist **(GP)**		
					16	**f.m. SAND**, grey, loose, saturated **(SP)**		
S4	5	3.8	0.0			**f.m.c. SAND**, trace f. gravel, grey, loose, saturated **(SP)**		
					18			

End of Boring at 20 ft

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PROJECT NUMBER: 059294.001.0008500 12/20/2020

Phase II Clinton and Cortland
SUBSURFACE LOG
HOLE NUMBER SB-102

LOCATION: Syracuse, New York
CLIENT: JMA Wireless
CONTRACTOR: NYEG Drilling
DRILLER: J. Rauscher INSPECTOR: K. Ehmann
START DATE and TIME: 12/7/2020 10:30:00 AM
FINISH DATE and TIME: 12/7/2020 10:55:00 AM
SURFACE ELEV: CHECKED BY: K. Ehmann

DRILL FLUID: None DRILLING RIG:

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		**ASPHALT PAVEMENT**, **(FILL)**			
								SUBBASE, **(FILL)**			
S1	5	4.1	0.0			2		**f.m.c. SAND**, black and brown, compact, moist **(FILL)**			
								BRICK, red brick **(FILL)**			
						4		**f.m.c SAND**, black and brown, compact, moist **(FILL)**			
								BRICK, **(FILL)**			
								f.m.c. SAND, trace f. gravel, brown, compact, moist **(FILL)**			
						6		**Silty CLAY**, brown, stiff, moist **(CL-ML)**		Soil lithology is interpreted based on soil recovery amount. The depth of fill material is estimated relative to the soil recovery amount.	
S2	5	1.3	0.0			8					
						10					
						12		becomes grey			
S3	5	5	0.0					**f.m. SAND**, Some Silt, grey, medium compact, moist **(SM)**			
						14		wood			
								Silty CLAY, grey, soft, wet **(CL-ML)**			
						16		**f. SAND**, grey, loose, saturated **(SM)**			
S4	5	4	0.5			18		**m.c. SAND and f. GRAVEL**, rounded, dark grey, loose, saturated **(SP)**			

End of Boring at 20 ft

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PROJECT NUMBER: 059294.001.0008500 12/20/2020

Phase II Clinton and Cortland
SUBSURFACE LOG
HOLE NUMBER SB-111

LOCATION: Syracuse, New York
CLIENT: JMA Wireless
CONTRACTOR: NYEG Drilling
DRILLER: J. Rauscher INSPECTOR: K. Ehmann
START DATE and TIME: 12/8/2020 11:30:00 AM
FINISH DATE and TIME: 12/8/2020 12:00:00 PM
SURFACE ELEV: CHECKED BY: K. Ehmann

DRILL FLUID: None DRILLING RIG:

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
						0		**ASPHALT PAVEMENT**, **(FILL)**			
								SUBBASE, **(FILL)**			
								f. SAND, Some Silt, orange and brown, medium compact, moist **(FILL)**			
S1	5	3.5	0.2			2		**Silty CLAY**, Some f. Gravel, black and brown, stiff, moist **(FILL)**			
						4		**Silty CLAY**, black, stiff, moist, slight petroleum odor **(FILL)**		Soil lithology is interpreted based on soil recovery amount. The depth of fill material is estimated relative to the soil recovery amount.	
						6		**BRICK**, brick, metal, other debris **(FILL)**			
S2	5	3	1.6			8		**Silty CLAY**, black, stiff, moist **(CL-ML)**			
						10		**f.m.c. SAND**, Some f. Gravel, dark grey, loose, saturated **(SP)**			
S3	5	4	3.4			12		**Silty CLAY**, grey and white, stiff, moist, slight petroleum odor **(CL-ML)**		Collected soil sample SOIL-SB-111 from 11 ft - 13 ft bgs at 11:50.	
						14		becomes soft and wet			
S4	5	5	0.0			16					
						18		wood			

End of Boring at 20 ft

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Phase II Clinton and Cortland
SUBSURFACE LOG
HOLE NUMBER SB-112

PROJECT NUMBER: 059294.001.0008500 12/20/2020

LOCATION: Syracuse, New York
CLIENT: JMA Wireless
CONTRACTOR: NYEG Drilling
DRILLER: J. Rauscher INSPECTOR: K. Ehmann
START DATE and TIME: 12/8/2020 12:50:00 PM
FINISH DATE and TIME: 12/8/2020 1:30:00 PM
SURFACE ELEV: CHECKED BY: K. Ehmann

DRILL FLUID: None DRILLING RIG:

WATER LEVEL OBSERVATIONS	DATE	TIME	WATER DEPTH (ft)	CASING BOTTOM (ft)	HOLE BOTTOM (ft)
	12-11-20	10:20	9.9		

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	DEPTH (Feet)	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.
S1	5	3.4	0.0		0	**TOPSOIL**, **(FILL)**		
						f. GRAVEL, Some f.m.c Sand, black and orange, compact, moist **(FILL)**		
					2	**Silty CLAY**, light brown, stiff, moist **(FILL)**		
						BRICK, **(FILL)**		
						Silty CLAY, brown, medium stiff, moist **(FILL)**		
					4			
						No Recovery		
S2	5	0			6			Soil lithology is interpreted based on soil recovery amount. The depth of fill material is estimated relative to the soil recovery amount.
					8			
					10	**Silty CLAY**, dark brown, stiff, moist **(CL-ML)**		
S3	5	5	3.2		12	**SILT**, tan and grey, soft, moist **(ML)**		
					14			
						f. SAND, Some Silt, trace f. gravel, grey, medium compact, wet **(SM)**		
S4	5	4	15.2		16			
					18	**f.m.c. SAND**, Some f. gravel, grey, loose, wet **(SP)**		

WATER LEVELS AND/OR WELL DATA

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PROJECT NUMBER: 059294.001.0008500 12/20/2020

Phase II Clinton and Cortland
SUBSURFACE LOG
HOLE NUMBER SB-112

SAMP./CORE NUMBER	SAMP. ADV. (ft) LEN. CORE (ft)	RECOVERY (ft)	PID Readings (ppm)	"N" Value or RQD%	SAMPLE	DEPTH (Feet)	GRAPHICS	DESCRIPTION AND CLASSIFICATION	ELEVATION (Feet)	Remarks on Character of Drilling, Water Return, etc.	WATER LEVELS AND/OR WELL DATA
								SILT, Some f. Sand, grey, soft, wet **(SM)**			
S5	5	5	1.1			22		**f.m.c. SAND**, Some f. Gravel, grey, wet **(SP)**			
								Silty CLAY, brown, soft, wet **(CL-ML)**			
						24		End of Boring at 25 ft			
						26					
						28					
						30					
						32					
						34					
						36					
						38					
						40					
						42					
						44					

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CHA	PROBE LOG – DELINEATION
PROJECT & LOCATION: Phase II Cortland and S. Clinton	PROJECT NO.: 059294.001.0008500
CLIENT: GEC Consulting	DATE: 12/7/2020 – 12/10/2020
CONTRACTOR: NYEG Drilling LLC	INSPECTOR: K. Ehmann
DRILLER: Joel Rauscher	RIG TYPE/MODEL: 7822DT Geoprobe

Date	Soil Boring No.	Odors (Y/N)	Staining (Y/N)	PID Readings (ppm)	Vertical Interval Impacted (ft. bgs)	Depth Groundwater Encountered (ft. bgs)	Soil Sample Collected (Sample name, depth interval)	Comments/Other Observations
12/9/2020	SB-121	Y	Y	9 24.1	9-10 14-15	~9	SOIL-SB-121 collected from 13 – 15 ft bgs at 14:25	Slight black staining from 9 – 10 ft bgs. Odors from 13 – 16 ft bgs
12/9/2020	SB-122	N	N	0.0	N/A	~9	No Sample	No recovery 10 – 15 ft bgs. No odors in the empty macrocore
12/9/2020	SB-123	N	N	0.0	N/A	~9	No Sample	No odors or evidence of contamination through 20 ft bgs
12/9/2020	SB-124	N	N	0.2 0.0	N/A	~9	SOIL-SB-124 collected from 17 – 20 ft bgs at 15:50	Mild, indistinguishable odor at 14 ft bgs, PID = 0.2 ppm
12/10/2020	SB-125	Y	N	32.6	10-12	~9	SOIL-SB-125 collected from 10 – 12 ft bgs at 09:10	Soil fell out of macrocore upon removal from the borehole from 10 – 15 ft bgs. PID reading of soil on ground = 0.8 ppm

Date	Soil Boring No.	Odors (Y/N)	Staining (Y/N)	PID Readings (ppm)	Vertical Interval Impacted (ft. bgs)	Depth Groundwater Encountered (ft. bgs)	Soil Sample Collected (Sample name, depth interval)	Comments/Other Observations
12/10/2020	SB-126	Y	Y	25.4 57.0 395.6	9-10 12-14 15-18	~9	SOIL-SB-126 collected from 15 – 18 ft bgs at 10:30	Odors noticeable from 9 – 18 ft bgs
12/10/2020	SB-127	Y	N	5.5	14-15	~9	No Sample	Soil fell out of macrocore upon removal from the borehole from 15 -20 ft bgs. PID reading of soil on ground= 2.8 ppm
12/10/2020	SB-128	N	N	0.2 0.0	13-15 15-20	~9	SOIL-SB-128 collected from 15 – 17 ft bgs at 11:15	No evidence of contamination
12/10/2020	SB-129	Y	Y	22.7	8-10	~9	SOIL-SB-129 collected from 9 – 10 ft bgs at 12:05	No recovery 10 – 15 ft bgs

APPENDIX D

Groundwater Monitoring Well Construction Logs

WELL CONSTRUCTION LOG

PROJECT & LOCATION:	Former Coyne Textile Facility, 140 Cortland Ave, Syracuse, NY
CLIENT:	Ranalli/Taylor St. LLC
CONTRACTOR:	NYEG

BORING NO.

WELL NO. GW-105 S

PROJECT NO.: 33525.1002.46000

SHEET NO.: 1 OF 1

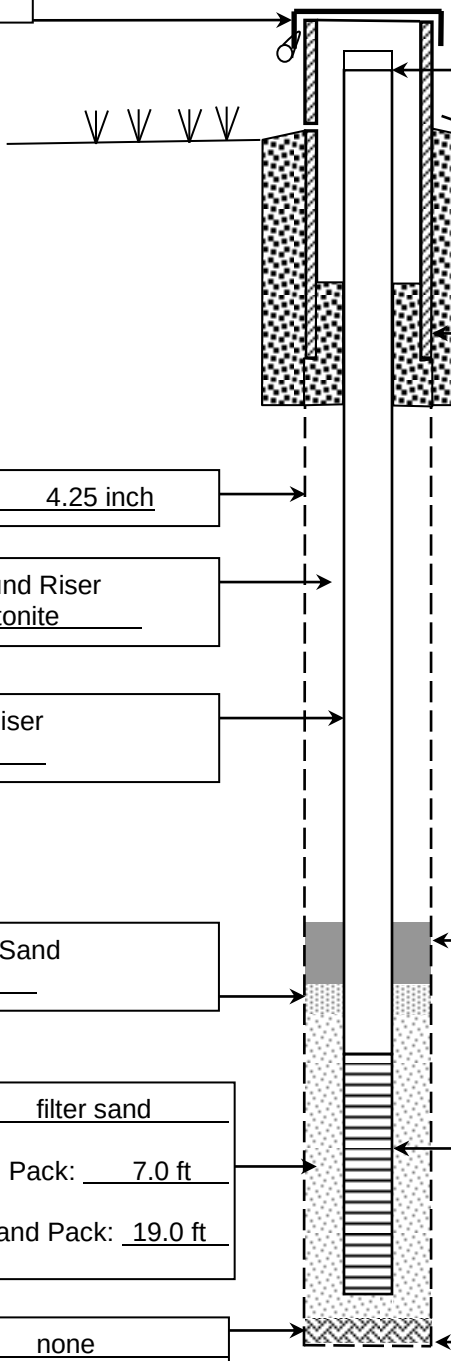
ELEVATION: Top of Rim = 392.00
Top of Riser = 391.370

START DATE: 4/17/2018 TIME: 1250

FINISH DATE: 4/17/2018 TIME: 1400

DRILLER: Tom/Chris, of NYEG

INSPECTOR: K.Ehmann



Bolted Steel Cap

Depth Above/Below Ground of Riser Pipe: below ~ 0.5 ft

Type of Cap: J-plug

Type of Surface Seal: concrete

Thickness of Surface Seal: 2 ft thick

Type of Protective Casing: flushmount

Inside Dia. Of Casing: 6 inches

Depth Above Ground of Casing: 0 inches

Depth Below Ground of Casing: 8 inches

Diameter Borehole: 4.25 inch

Type of Backfill Around Riser Pipe: bentonite

Inside Diameter of Riser Pipe: 2”

Type of Bentonite Seal: sodium bentonite clay

Depth to Top of Bentonite Seal: 2.0 ft

Depth to Top of Fine Sand Choke: 5 ft

Type of Screen: PVC

Screen Diameter: 2 inch

Screen Slot Size: (10 slot) 0.01 inch

Depth to Top of Screen: 8.0 ft

Depth to Bottom of Screen: 18.0 ft

Type of Sand Pack: filter sand

Depth to Top of Sand Pack: 7.0 ft

Depth to Bottom of Sand Pack: 19.0 ft

Backfill (if any): none

Depth to Bottom of Borehole: 19.0 ft

WELL CONSTRUCTION LOG

PROJECT & LOCATION:	Former Coyne Textile Facility, 140 Cortland Ave, Syracuse, NY
CLIENT:	Ranalli/Taylor St. LLC
CONTRACTOR:	NYEG

BORING NO.

WELL NO. GW-105 D

PROJECT NO.: 33525.1002.46000

SHEET NO.: 1 OF 1

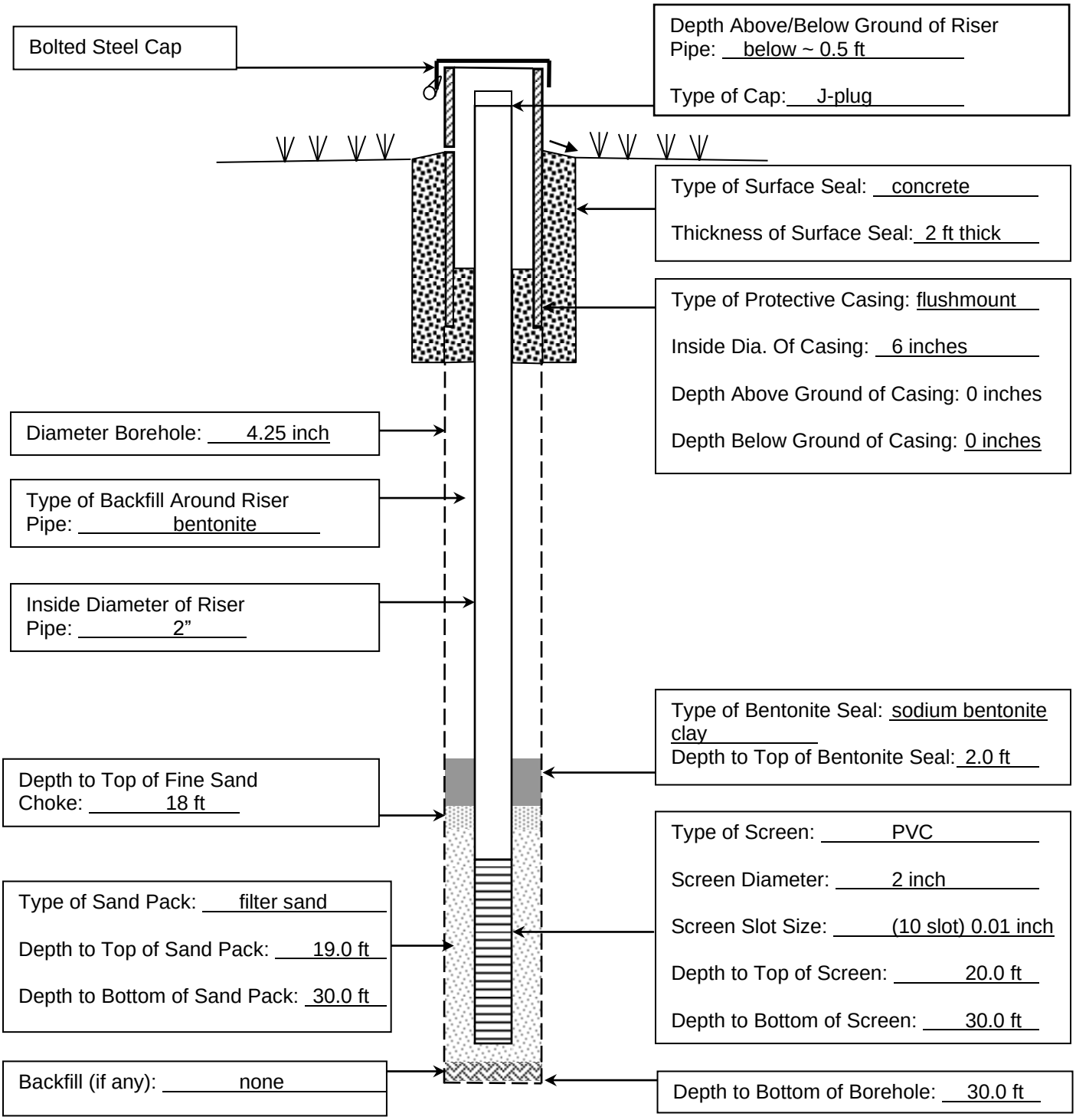
ELEVATION: Top of Rim = 392.210
Top of Riser = 391.450

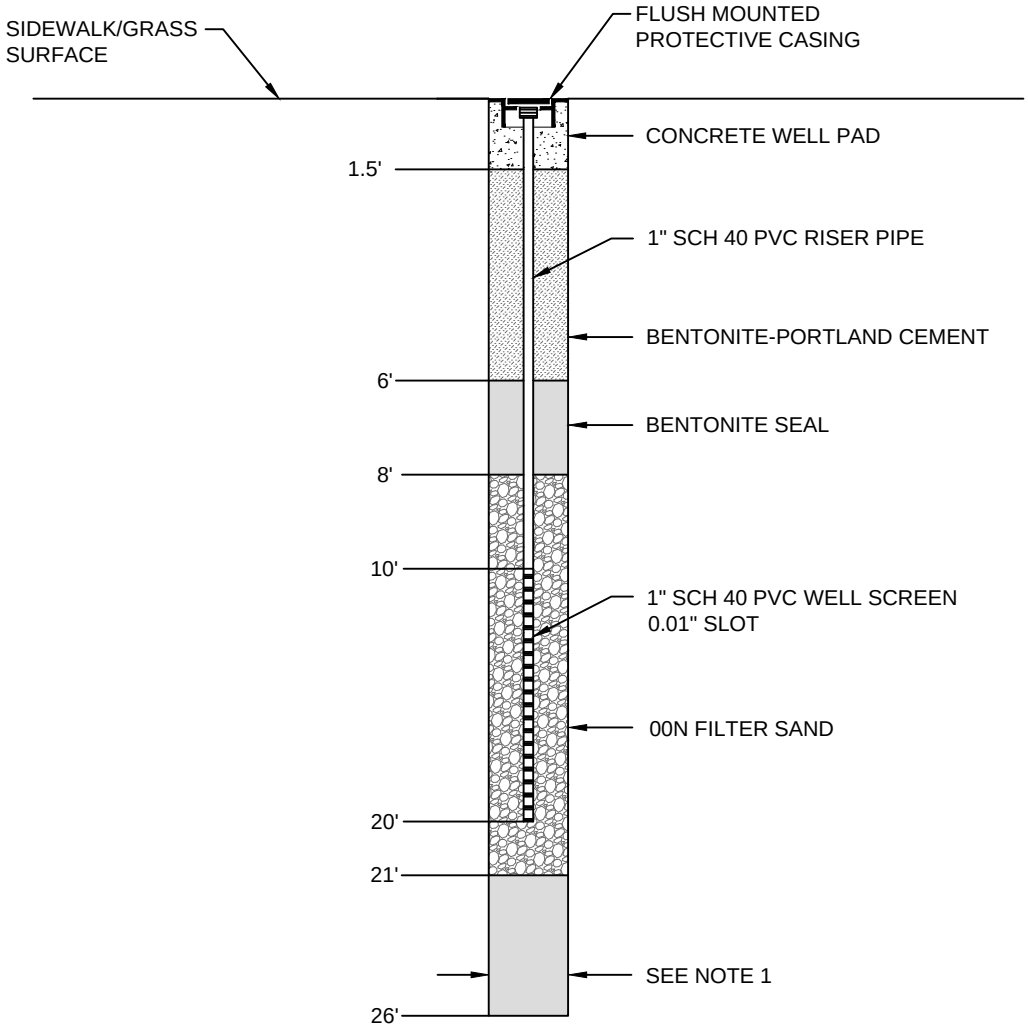
START DATE: 4/18/2018 TIME: 0730

FINISH DATE: 4/18/2018 TIME: 0850

DRILLER: Tom/Jesse, of NYEG

INSPECTOR: K.Ehmann





NOTES:.

1. OVERBURDEN DRILLED WITH 6 1/4 INCH I.D. HOLLOW STEM AUGERS TO A DEPTH OF 26.0 FEET BELOW GROUND SURFACE.

2. DRAWING IS NOT TO SCALE. WELL HAS BEEN DEPICTED WITH HORIZONTAL EXAGGERATION FOR PURPOSES OF PRESENTATION.

PREPARED FOR: COYNE TEXTILE SERVICES

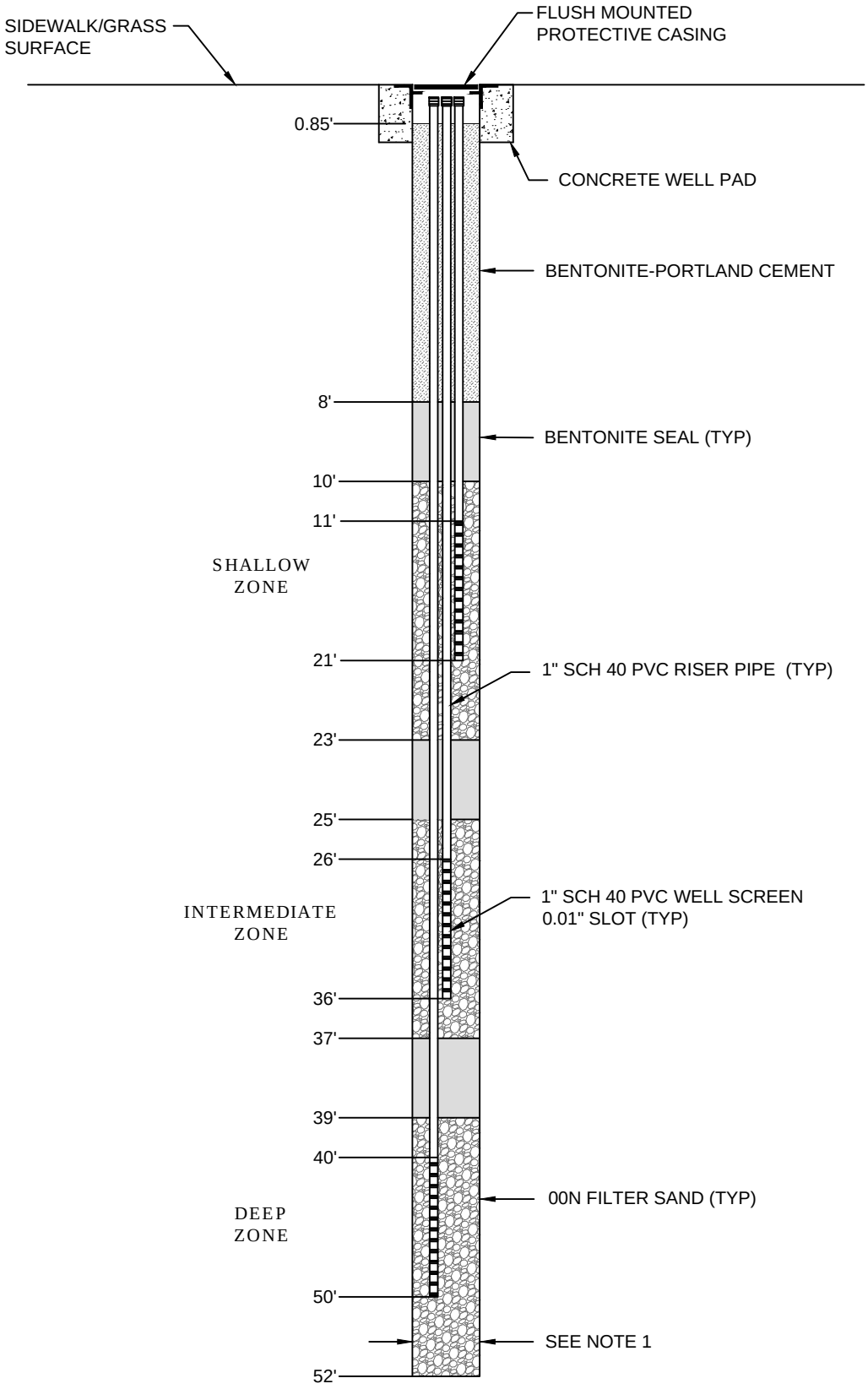
PREPARED BY: GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com

PROJ MGR: TB	REVIEWED BY: TB	CHECKED BY: BK	FIGURE 3A
DESIGNED BY: TGB	DRAWN BY: MR	SCALE: NOT TO SCALE	
DATE: AUGUST 2015	PROJECT NO. 21.0056730.40	REVISION NO.	

COYNE TEXTILE SERVICES
140 CORTLAND AVENUE
CITY OF SYRACUSE, NEW YORK

MW-4 MONITORING WELL
INSTALLATION DIAGRAM

NO.	ISSUE/DESCRIPTION	BY	DATE



NOTES:.

1. OVERBURDEN DRILLED WITH 6 1/4 INCH I.D. HOLLOW STEM AUGERS TO A DEPTH OF 52.0 FEET BELOW GROUND SURFACE.
2. DRAWING IS NOT TO SCALE. WELL HAS BEEN DEPICTED WITH HORIZONTAL EXAGGERATION FOR PURPOSES OF PRESENTATION.

PREPARED FOR: COYNE TEXTILE SERVICES

FIGURE 3B

PREPARED BY: GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com

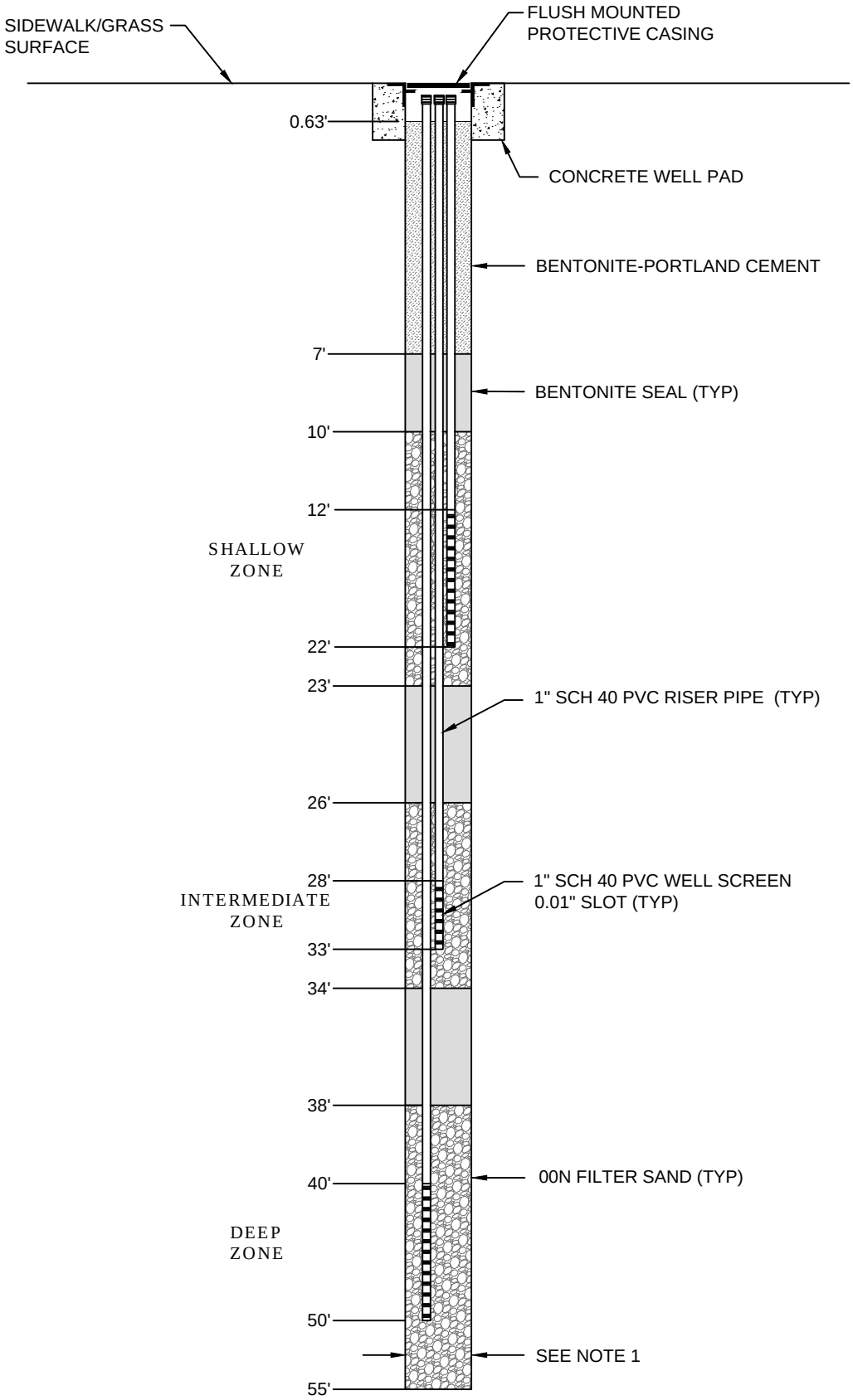
PROJ MGR:	TB	REVIEWED BY:	TB
DESIGNED BY:	TGB	DRAWN BY:	MR
DATE:	AUGUST 2015	PROJECT NO.	21.0056730.40

CHECKED BY: BK
SCALE: NOT TO SCALE
REVISION NO.

COYNE TEXTILE SERVICES
140 CORTLAND AVENUE
CITY OF SYRACUSE, NEW YORK

MW-5 NESTED MONITORING WELL INSTALLATION DIAGRAM

NO.	ISSUE/DESCRIPTION	BY	DATE



NOTES:.

1. OVERBURDEN DRILLED WITH 6 1/4 INCH I.D. HOLLOW STEM AUGERS TO A DEPTH OF 55.0 FEET BELOW GROUND SURFACE.

2. DRAWING IS NOT TO SCALE. WELL HAS BEEN DEPICTED WITH HORIZONTAL EXAGGERATION FOR PURPOSES OF PRESENTATION.

PREPARED FOR: COYNE TEXTILE SERVICES

PREPARED BY: GZA GeoEnvironmental of NY Engineers and Scientists www.gza.com

PROJ MGR:	TB	REVIEWED BY:	TB
DESIGNED BY:	TGB	DRAWN BY:	MR
DATE:	AUGUST 2015	PROJECT NO.	21.0056730.40

CHECKED BY: BK
SCALE: NOT TO SCALE
REVISION NO.

FIGURE 3C

COYNE TEXTILE SERVICES
140 CORTLAND AVENUE
CITY OF SYRACUSE, NEW YORK

MW-6 NESTED MONITORING WELL INSTALLATION DIAGRAM

NO.	ISSUE/DESCRIPTION	BY	DATE

APPENDIX E

Excavation Work Plan

APPENDIX E – EXCAVATION WORK PLAN (EWP)

The Former Coyne Textile facility (Site), New York State Department of Environmental Conservation (NYSDEC) Site Number C734144, contains contamination left after the completion of the remedial action. The specific types and concentrations of remaining contaminants are described in the Site Management Plan (SMP). This EWP will be implemented for all intrusive activities at the Site following the completion of the remedial action. Specifically, intrusive activities beneath the Site cover and/or potentially beneath the Site demarcation barrier and/or the groundwater table will necessitate the implementation of this EWP as well as the preparation of a site-specific, task specific, health an safety plan (HASP). Such activities may include, but are not limited to the following:

- The excavation of Site soils to install new structures, such as building foundations, light pole bases, stormwater systems, etc.
- The excavation of Site soils to install new underground utilities or repair-maintenance associated with subsurface utilities
- The excavation of Site soils to alter Site surfaces and/or change the Site grades
- The installation of landscaping, particularly trees or shrubs, that will require excavation deeper than 12-inches

The objective of this EWP is to set guidelines for the management of soil, groundwater, and air quality during future intrusive activities at the Site. Following the guidelines in the EWP will provide protection of human health and the environment during intrusive activities.

1.0 NOTIFICATION

At least 15 days prior to the start of any activity that is anticipated to encounter remaining contamination or breach or alter the site's cover system, the site owner or their representative will notify the NYSDEC contacts listed in the table below. Table 1 includes contact information for the above notification. The information on this table will be updated as necessary to provide accurate contact information. A full listing of site-related contact information is provided in Appendix A of the SMP.

Table 1: Notifications*

Name	Contact Information
Michael Belveg, NYSDEC Project Manager	315-426-7446, michael.belveg@dec.ny.gov
Kelly Lewandowski, NYSDEC Chief Site Control	518-402-9569, kelly.lewandowski@dec.ny.gov
Joshua Cook, P.E. NYSDEC Professional Engineer 1	315-426-7411, joshua.cook@dec.ny.gov

* Note: Notifications are subject to change and will be updated as necessary.

This notification will include:

- A detailed description of the work to be performed, including the location and areal extent of excavation, plans/drawings for site re-grading, intrusive elements or utilities to be installed below the soil cover, estimated volumes of contaminated soil to be excavated, any modifications of truck routes, and any work that may impact an engineering control;
- A summary of environmental conditions anticipated to be encountered in the work areas, including the nature and concentration levels of contaminants of concern, potential presence of grossly contaminated media, and plans for any pre-construction sampling;
- A schedule for the work, detailing the start and completion of all intrusive work;
- A summary of the applicable components of this EWP;
- A statement that the work will be performed in compliance with this EWP and 29 CFR 1910.120;
- A copy of the contractor's health and safety plan (HASP), in electronic format, if it differs from the HASP provided in Appendix F of this SMP;
- Identification of disposal facilities for potential waste streams; and
- Identification of sources of any anticipated backfill, along with the required request to import form (Attachment A of this EWP) and all supporting documentation including, but not limited to, chemical testing results.

The NYSDEC project manager will review the notification and may impose additional requirements for the excavation that are not listed in this EWP.

1.1 REPORTING AND MONITORING REQUIREMENTS

For any potentially intrusive activities performed by the current Site owner that trigger this SMP, the current Site owner's representative or qualified environmental professional will be responsible for observing the activities for compliance with this SMP and preparing appropriate documentation to include in the Periodic Review Report. As part of this obligation, the lessee, tenant, or occupant of the Site will be responsible for providing appropriate documentation to the Site owner following the completion of activities for which they are responsible for (e.g. construction of a new on-Site structure, modifications to Site features such as parking lots or landscaping, subsurface utility repairs, etc.). At a minimum, a summary report including the following information will be provided to the Site owner:

1. A certification statement at the beginning of the document indicating that all elements of this SMP as well as previously prepared contractor's health and safety plan were complied with. If variation from the plan was necessitated, any such variations must be clearly identified in the certification statement. Certification shall be made by a qualified environmental professional, as defined in the SMP.

2. A summary of the activity performed along with a map or sketch depicting the location of the activity.

3. A summary of analytical results, including waste characterization samples and any confirmatory soil samples that were collected as part of the work.

4. All air monitoring data with a summary of any action level exceedances along with a description of potential causes and mitigation measures implemented.

5. A summary of any field screening results (e.g. visual, olfactory and photoionization detector screening results of soils beneath the demarcation barrier.

6. A summary of all materials disposed off-site including type s and quantities of each material. Additionally, all waste profile sheets, manifests, weight tickets, etc. should be included in an appended to the report.

7. A summary of all materials imported to the Site, including types and quantities of each. Certifications, as discussed in the SMP, must also be provided for each borrow source.

2.0 SOIL SAMPLING AND SCREENING METHODS

2.1 SOIL SAMPLING

Depending on the anticipated amount of soil that will be excavated for off-site disposal and the amount of space available on-site to stage the excavated soils, it may be preferrable to direct load the material to be disposed of off-site directly into trucks for immediate hauling to the disposal facility. Direct loading of the materials requiring off-site disposal will also reduce the need to handle the material multiple times. If direct loading of materials is determined to be desirable, pre-excavation sampling and analysis will be required.

Regardless of whether pre-excavation samples are collected or whether characterization samples are collected from on-Site stockpiles, the sampling frequency will be specified by the disposal facility based upon the total volume of material requiring disposal. For larger projects, the sampling frequency should be one (1) sample per very 1,000 cubic yards (CY) of material requiring disposal at a minimum; however, in no case should the frequency be less than one (1) sample per work area. The sampling program will require the collection of both grab samples and composite samples. Unless otherwise specified by the disposal facility, samples collected for VOC analysis will be discrete grab samples and other analyses will be performed on composite samples. The basic sampling methodology is described below.

Grab Samples

The grab samples shall be collected by personnel wearing a freshly donned pair of latex gloves (or equivalent) and appropriately decontaminated, stainless steel hand tools. The samples should be immediately placed into the appropriately pre-preserved laboratory containers and labeled. The labeled containers should then be placed on ice and cooled to 4° Fahrenheit.

Composite Sampling

The composite samples shall be collected from various depths and locations in each work area that is representative of the entire work zone. Each composite will be formed from five equally sized, discrete sub-sample soil samples. The samples can be collected by hand with a fresh pair of gloves or with appropriately decontaminated stainless steel hand tools. The sub-samples will then immediately be placed into a stainless steel bowl and covered with aluminum foil between the additions of each subsample. While composite sampling will not be utilized for samples collected for VOC analysis, the bowl will be covered between the additions of each sub-sample to minimize

the potential for volatilization of any semivolatile contaminates that may have been present in the soil.

Once all five of the sub-samples are added to the bowl, the soil samples will be thoroughly homogenized using a stainless steel spoon/scoop and immediately transferred to the appropriate laboratory containers and managed in a similar manner as the grab samples. The locations of each soil sample should be identified on a map or sketch and submitted to the NYSDEC along with the analytical results.

The soil samples will be submitted to a laboratory certified under the NYSDOH's ELAP for analysis following appropriate chain-of-custody protocols, in accordance with Section 3.3 of this SMP. The specific analytical waste characterization requirements of the waste disposal facility may vary and shall be verified prior to sampling. The parameters required for waste disposal characterization will likely include following:

- Target compound list (TCL) VOCs by EPA Method 8260.
- TCL SVOCs by EPA Method 8270.
- TCL PCBs by EPA Method 8082.
- Pesticides by EPA Method 8081
- Herbicides by EPA Method 8151
- Target Analyte List (TAL) metals and cyanide by EPA Methods 6010/7471.
- Toxicity Leaching Characteristic Procedure (TCLP) Extraction
- Hazardous Waste Characteristics as defined under the Resource Conservation and Recovery Act (RCRA), including ignitability, corrosivity, and reactivity.
- pH via EPA Method 9045
- Percent Solids via Method 160.3
- Paint Filter Test via Method 9095
- Additional analyses as required by the disposal facility.

2.2 FIELD SCREENING METHODS

Visual, olfactory and instrument-based (e.g. photoionization detector) soil screening will be performed during all excavations into known or potentially contaminated material (remaining contamination) or a breach of the cover system. A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will perform the screening. Soil screening will be performed when invasive work is done and will include all

excavation and invasive work performed during development, such as excavations for foundations and utility work, after issuance of the COC.

Soils will be segregated based on previous environmental data and screening results into material that requires off-site disposal and material that requires testing to determine if the material can be reused on-site as soil beneath a cover or if the material can be used as cover soil. The following soil criteria will be used:

- Soil that screens greater than 50 parts per million (ppm) will be transported off-site for disposal at a permitted facility
- Soil that screens greater than 25ppm but less than 50ppm will be sampled for potential re-use on-site as cover soil. If analytical results do not meet the criteria for cover soil, the soil may be used beneath a cover.
- Soil that screens less than 25ppm may be used as a cover soil without additional testing.

Further discussion of off-site disposal of materials and on-site reuse is provided in Section 6.0 of this Appendix.

3.0 SOIL STAGING METHODS

If temporary stockpiling of Site soils is determined to be necessary, all excavated materials beneath the demarcation barrier will be required to be stockpiled on temporary containment pads within the exclusion zone. The temporary containment pads will be of sufficient size to store up to a minimum of 110 percent of the maximum amount of soil that will be stockpiled prior to re-use or off-site disposal. At a minimum, any soil containment pads will include the following:

1. A sufficiently large area with accessibility for trucks and construction equipment. The area shall be relatively flat and away from drainage inlets on the waterfront.

2. A 10-mil thick polyethylene sheeting liner with a minimum of two-foot wide overlaps between successive rows.

3. A minimum of a one-foot high soil berm shall be constructed around the perimeter of each pad to control runoff/run-on to and from the stockpiles. Gravel/stone ramps with gentler slopes will be constructed at locations of ingress and egress for each pad.

4. Some excavations may involve the handling of saturated soils (e.g. soils below the groundwater table). When handling saturated soils, a minimum of a continuous (no laps permissible unless the seams are sealed/welded) 15-mil thick polyethylene sheeting must be used to line the containment area and the side berms must be a minimum of two (2) feet high. The contractor will be responsible for sizing the containment pad area and berm height to ensure that all water on the pad is contained and no water drains into the River, Site stormwater drainage systems, or un-impacted outside the work zone (i.e. into areas of the Site where the final cover system is in place). The berms must be of sufficient height to contain the soils, any water draining from the material, and still provide sufficient freeboard (a minimum of six (6) inches) for precipitation events. All water on the pad will be collected and handled in accordance with the SMP.

5. Soil stockpiles that will remain in place for more than one (1) week will also be continuously encircled with silt fence.

6. Soil stockpiles will be continuously encircled with a berm and/or silt fence. Hay bales will be used as needed near catch basins, surface waters and other discharge points.

7. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

8. Stockpiles shall be maintained at a maximum height of 15 feet above surrounding surface subgrade elevation with a maximum slope of 1.5:1 to maintain stability. However, the appropriate slope may vary by material and the contractor performing stockpiling activities will be responsible for determining the safe allowable slopes for each material stockpiled on Site in accordance with all applicable regulations.

Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

4.0 MATERIALS EXCAVATION AND LOAD-OUT

A qualified environmental professional as defined in 6 NYCRR Part 375, a PE who is licensed and registered in New York State, or a qualified person who directly reports to a PE who is licensed and registered in New York State will oversee all invasive work and the excavation and load-out of all excavated material.

The owner of the property ~~and remedial party (if applicable)~~ and its contractors are responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the site will be investigated by the qualified environmental professional. It will be determined whether a risk or impediment to the planned work under this SMP is posed by utilities or easements on the site. A site utility stakeout will be completed for all utilities prior to any ground intrusive activities at the site.

4.1 GENERAL REQUIREMENTS

The following minimum procedures will be required for all intrusive activities extending beneath the demarcation barrier at the Site:

1. Provide a minimum of three (3) working days of notice to Dig Safely New York (1-800-962-7962) for utility clearance.

2. Establish Site Controls, including, but not limited to the following:

    - Installation of appropriate sediment and erosion controls
    - Setup of appropriate work zones
    - Setup of air monitoring stations as required to comply with the requirements of the CAMP – Refer to Section 6.14 of the SMP for details.
    - Construction of containment pads
    - Construction of decontamination pads

3. Excavate all soil cover materials above the demarcation barrier and stage them separately. Erosion and sediments controls should be established around these stockpiles, but covering of the piles is not required unless covers are utilized as an erosion control measure or a means to control dust. These soils may be re-used on Site without characterization sampling.

4. Cut through the demarcation barrier in the excavation area with caution. Effort should be made to minimize the area of disturbance. The demarcation barrier must not be "pulled" or "ripped" from areas adjacent to the excavation. Such damage would result in the need for additional restoration of the soil cover system following completion of the intrusive activity.

5. Excavate Site soils utilizing field screening procedures. To minimize potential cross-contamination on-Site via tracking and reduce the amount of required decontamination, the following work practices should be implemented:

    - Efforts will be made to advance the excavation face towards the excavator such that the tracks on the machine do not come into contact with the petroleum impacted soils.

    - Where possible, all trucks will be loaded adjacent to the excavation. Care will be taken to ensure that impacted soil is not spilled on the sides of the trucks as they are loaded and that the trucks do not drive through contaminated soils. If wet soils are encountered, dry soils will be placed near the rear tailgate of the truck and wetter soils will be placed near the front of the truck. If the soils are saturated, liners will need to be installed in the dump box or the soils will be stabilized prior to loading to avoid drippage out of the truck during the hauling process.

    - Efforts will be made to minimize the amount of equipment and machinery that comes into contact with the impacted soils.

6. If field screening processes indicate a change in material is encountered (e.g. change in color, noticeable odors, etc.), the newly encountered material should be stockpiled and characterized separately.

7. If excavation beneath the water table is required, the material will need to be dewatered prior to placement back on-Site or transportation off-site for disposal. Additional measures should be implemented to collect all water on the containment pads for future off-site disposal (e.g. construction of a sump on containment pad).

8. All excavations faces must be covered with a minimum of 10-mil polyethylene sheeting at the end of each work day at a minimum. Additionally, all excavations shall be backfilled within 48-hours of commencement, unless special circumstances require the excavation to be open longer. In such cases, the anticipated duration of the open excavation should be identified to the NYSDEC during the notification process.

9. Loaded vehicles leaving the site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).

10. Locations where vehicles enter or exit the site shall be inspected daily for evidence of off-site soil tracking.

4.2 DECONTAMINATION PAD REQUIREMENTS

A truck wash and decontamination pad will be operated on-site, as appropriate. The qualified environmental professional will be responsible for ensuring that all outbound trucks will be washed at the truck wash before leaving the site until the activities performed under this section are complete. ~~Truck~~ All wash waters will be collected and disposed of off-site in an appropriate manner.

The qualified environmental professional will be responsible for ensuring that all egress points for truck and equipment transport from the site are clean of dirt and other materials derived from the site during intrusive excavation activities. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to site-derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed off-site at a permitted landfill facility in accordance with all applicable local, State, and Federal regulations.

5.0 MATERIALS TRANSPORT OFF-SITE

The following requirements have been established for all materials being transported off-site:

1. All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded. In addition to the Part 364 permit, all haulers will maintain appropriate shipping papers and/or waste manifests (6 NYCRR Part 372). Emergency response procedures and emergency telephone numbers

will be maintained in all vehicles, and operators will be trained in emergency response procedures.

2. Loaded vehicles will be in compliance with load height and weight regulations.
3. Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements).
4. Material transported by trucks exiting the site will be secured with tight-fitting covers. Loose-fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.
5. All trucks will be washed prior to leaving the Site. Truck wash waters will be collected and disposed of off-site in an appropriate manner.
6. Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.
7. Egress points for truck and equipment transport from the site will be kept clean of dirt and other materials during site remediation and development.
8. Queuing of trucks will be performed on-site in order to minimize off-site disturbance. Off-site queuing will be prohibited.

Truck transport routes will consist of entering from the northeast side of the Site off of South Salina Street through a designated entrance. Trucks leaving the site will exit the same location, turn left onto South Salina Street and proceed to East Adams Street toward Interstate 81. There will be no access to the site from any other location for trucks.

All trucks loaded with site materials will exit the vicinity of the site using only these approved truck routes. This is the most appropriate route and takes into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

6.0 MATERIALS DISPOSAL OFF-SITE

All material excavated and removed from the site will be treated as contaminated and regulated material and will be transported and disposed off-site in a permitted facility in accordance with all local, State and Federal regulations. If disposal of material from this site is proposed for unregulated off-site disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC project manager. Unregulated off-site management of materials from this site will not occur without formal NYSDEC project manager approval.

Off-site disposal locations for excavated soils will be identified in the pre-excavation notification. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, (e.g. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility) Actual disposal quantities and associated documentation will be reported to the NYSDEC in the Periodic Review Report. This documentation will include, but will not be limited to: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

Non-hazardous historic fill and contaminated soils taken off-site will be handled consistent with 6 NYCRR Parts 360, 361, 362, 363, 364 and 365. Material that does not meet Unrestricted SCOs is prohibited from being taken to a New York State C&D debris recovery facility (6 NYCRR Subpart 360-15 registered or permitted facility).

7.0 MATERIALS REUSE ON-SITE

"Reuse on-Site" means reuse on-Site of material that originates from the Site and which does not leave the Site during the excavation. Soils excavated above the demarcation barrier and segregated from Site soils containing remaining contamination may be reutilized on-Site without restriction; however, the top six (6) inches of soil cover in vegetated areas must be capable of supporting vegetation (e.g. topsoil). Under no circumstances shall any materials such as large boulders, vegetation (e.g. trees, stumps, brush, lawn clippings, etc.), construction and demolition debris (e.g.

brick, concrete foundations, or other building materials) or other waste materials be buried or reused on-Site. Any such materials must be disposed off-site at a properly permitted facility. The following table summarizes the requirements for allowable reuse of material on-Site.

Table 1. Requirements for Reuse of Existing Materials On-Site

Original Location of Soil	Allowable Reuse
Above Demarcation Layer	Reuse allowed without restriction provided that soils are properly segregated. Additionally, the top six (6) inches of soil cover in vegetated areas must be capable of supporting vegetation.
Below Demarcation Layer	Reuse allowed beneath the demarcation layer, provided that the soil exhibits no evidence of gross-contamination and there are no contaminants detected at concentrations in excess of the restricted use-commercial SCO concentrations, as further described in subsequent paragraphs of this section. As previously indicated, soils that exhibit gross contamination will be properly stockpiled, characterized, and disposed offsite at a properly permitted facility.

All materials excavated from beneath the demarcation barrier shall be directly loaded into trucks (if pre-excavation characterization samples indicated that need for off-site disposal) or placed onto temporary soil containment pads. All soil desired for reuse on-Site must be sampled for the following criteria at a frequency of one (1) sample per very 1,000 CY of material excavated; however, in no case should the frequency be less than one (1) sample per work area:

- TCL VOCs by EPA Method 8260
- TCL SVOCs by EPA Method 8270
- TCL PCBs by EPA Method 8082
- RCRA-8 metals by EPA Methods 6010 and 7471

Many of these parameters are the same as those collected for waste characterization purposes. If the material has already been characterized in preparation of the potential need for off-site disposal, additional sampling may not be necessary. However, should the material be staged on-Site for reuse initially, the material must be sampled in accordance with the above requirements. If the samples do not meet the chemical criteria established in this section of the EWP, additional sampling of the material may be required for waste characterization purposes.

Chemical criteria for on-Site reuse of material have been approved by NYSDEC. In order for soil to be reused on-Site, the contaminant concentrations for the soil samples must be free of gross-contamination and below the restricted use SCOs for the protection of public health for commercial use, as established in Table 375-6.8(b) of 6 NYCRR Subpart 375-6. Grossly-contaminated media is defined by the NYSDEC as "soil, sediment, surface water or groundwater which contains sources of substantial quantities of mobile contamination in the form of NAPL that is identifiable either visually, though strong odor, by elevated contaminant vapor levels, or is otherwise readily detectable without laboratory analysis."

The qualified environmental professional as defined in 6 NYCRR part 375 will ensure that procedures defined for materials reuse in this SMP are followed and that unacceptable material (i.e. contaminated) does not remain on-site. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface, and will not be reused within a cover soil layer, within landscaping berms, or as backfill for subsurface utility lines.

Proposed materials for reuse on-site must be sampled for full suite analytical parameters including per- and polyfluoroalkyl substances (PFAS) and 1,4-dioxane. The sampling frequency will be in accordance with DER-10 Table 5.4(e)10 unless prior approval is obtained from the NYSDEC project manager for modification of the sampling frequency. The analytical results of soil/fill material testing must meet the site use criteria presented in NYSDEC DER-10 Appendix 5 – Allowable Constituent Levels for Imported Fill or Soil for all constituents listed, and the NYSDEC Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances October 2020 or date of current version, whichever is later guidance values. Approvals for modifications to the analytical parameters must be obtained from the NYSDEC project manager prior to the sampling event.

Soil/fill material for reuse on-site will be segregated and staged as described in Sections 2.0 and 3.0 of this EWP. The anticipated size and location of stockpiles will be provided in the 15-day notification to the NYSDEC project manager. Stockpile locations will be based on the location of site excavation activities and proximity to nearby site features. Material reuse on-site will comply

with requirements of NYSDEC DER-10 Section 5.4(e)4. Any modifications to the requirements of DER-10 Section 5.4(e)4 must be approved by the NYSDEC project manager.

Any demolition material proposed for reuse on-site will be sampled for asbestos and the results will be reported to the NYSDEC for acceptance. Concrete crushing or processing on-site will not be performed without prior NYSDEC approval. Organic matter (wood, roots, stumps, etc.) or other solid waste derived from clearing and grubbing of the site will not be reused on-site.

8.0 FLUIDS MANAGEMENT

All liquids to be removed from the site, including but not limited to, excavation dewatering, decontamination waters and groundwater monitoring well purge and development waters, will be handled, transported and disposed off-site at a permitted facility in accordance with applicable local, State, and Federal regulations. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the site, and will be managed off-site, unless prior approval is obtained from NYSDEC.

Pumping and collection of water on-Site will be done in a manner to prevent the migration of particulates or soil/fill, and to prevent damage to the existing subgrade materials. The collected water will be collected and stored in drums or temporary storage tanks (e.g. polyethylene tanks or frac tanks) that are approved and labeled in accordance with USDOT requirements.

The water collected will be sampled by the contractor or persons performing the intrusive activity on a frequency of one sample per every ten drums or one sample per every 2,000 gallons of water collected in larger vessels. However, more frequent sampling may be directed by the NYSDEC or the disposal facility (e.g. a local publicly-owned treatment works (POTW)), should observable changes in the water quality be identified in the field. The water samples will be analyzed for TCL VOCs and TCL SVOCs, TCL PCBs, pesticides, herbicides and the TAL metals and any other parameters required by the selected disposal facility for characterization purposes. It is anticipated that pretreatment of particulate matter in the water will be required such that the turbidity of the water is at or below 50 Nephelometric turbidity units (NTUs) through filtering of settling processes prior to shipment.

Oil-absorbent pads will be deployed on the water surface if sheens or NAPLs are observed in the groundwater within the excavation area to remove product. If absorbent pads are ineffective at removing the product, additional measures will be required to control the product, including, but not limited to the following or combinations of the following:

- Dewatering of the excavation in its entirety, if feasible (preferred method)
- The use of floating booms with solid curtains to isolate the product
- The use of blower systems to try to control the spread of product on the water surface
- The use of pumps and floating oil skimmers to extract the product
- The use of vacuum trucks to extract the product
- The installation of extraction wells with oil recovery systems installed around the perimeter of the excavation.

Under no circumstances will the use of any type of dispersant be permitted to control product observed on water surfaces.

Additionally, appropriate controls will be used to prevent spills and overflows, including but not limited to, monitoring, gauging, quick-close shut-off valves, and secondary containment. All storage containers will be decontaminated following disposal or discharge activities. Any residual sediment in the storage containers will be dewatered/stabilized, if necessary, and disposed of off-site in a similar manner as other materials requiring off-site disposal.

Discharge of water generated during large-scale construction activities to surface waters (i.e. a local pond, stream or river) will be performed under a SPDES permit.

9.0 COVER SYSTEM RESTORATION

After the completion of soil removal and any other invasive activities the cover system will be restored in a manner that complies with the decision document. The existing cover system is comprised of a minimum of 12 inches of clean soil, asphalt pavement, concrete covered sidewalks and concrete building, etc. The demarcation layer, consisting of orange geotextile or equivalent material will be replaced to provide a visual reference to the top of the remaining contamination zone, the zone that requires adherence to special conditions for disturbance of remaining contaminated soils defined in this SMP. Figure 12 of the SMP shows the cover system types in

place at the time of this SMP. If the type of cover system changes from that which exists prior to the excavation (i.e., a soil cover is replaced by asphalt), this will constitute a modification of the cover element of the remedy and the upper surface of the remaining contamination. A figure showing the modified surface will be included in the subsequent Periodic Review Report and in an updated SMP.

10.0 BACKFILL FROM OFF-SITE SOURCES

All materials proposed for import onto the site will be approved by the qualified environmental professional, as defined in 6 NYCRR Part 375, and will be in compliance with provisions in this SMP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review. A copy of the form is presented in Appendix A. Material from industrial sites, spill sites, other environmental remediation sites, or potentially contaminated sites will not be imported to the site.

All imported soils will meet the backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d) and DER-10 Appendix 5 for commercial use. Based on an evaluation of the land use, protection of groundwater and protection of ecological resources criteria, the resulting soil quality standards are listed in Table 375-6.8(b). Soils that meet 'general' fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC project manager. Soil material will be sampled for the full suite of analytical parameters, including PFAS and 1, 4-dioxane. Solid waste will not be imported onto the site.

The following documentation should be submitted to the NYSDEC to demonstrate compliance with these requirements and with the NYSDEC's DER-10:

1. **General documentation for <u>all</u> sources of fill:**

    a. The name of the person providing the documentation and relationship to the source of the fill.

b. The location of where the fill is to be obtained.

c. Identification of any state or local approvals as a fill source.

d. A brief history of the use of the property for the proposed fill source.

2. **Imported soil for use as backfill or cover material:** All soil imported for use as soil cover material or as backfill must be:

   a. Free of extraneous debris and solid waste.

   b. Be recognizable soil or other unregulated material as set forth in 6 NYCRR Part 360 and materials for which the NYSDEC has issued a beneficial use determination (BUD). Soils that meet 'exempt' fill requirements under 6 NYCRR Part 360, but do not meet backfill or cover soil objectives for this Site, will not be imported onto the Site without prior approval by NYSDEC. Solid waste will not be imported onto the Site.

   c. Free of contaminant concentrations exceeding the lower of the NYSDEC's SCOs for the protection of groundwater and the SCOs for the protection of public health for commercial use as established in Table 375-6.8(b) of 6 NYCRR Subpart 375-6.

   Sampling is also required for all imported soils, with a minimum of one (1) sample analyzed for every new source of material, at the following frequency:

   a. Soil or sand imported from a "virgin" mine or pit, at least one round of characterization samples for the initial 1,000 cubic yards of material imported in accordance with Table 6-2 on the following page. For material designated as "virgin," written documentation shall be provided to the Site owner or owner's representative and the NYSDEC to document that the soil is native material from areas not having supported any known prior industrial or commercial development or agricultural use and is not now, nor has ever been, identified as a suspected depository for chemical, toxic, hazardous, or radioactive wastes.

   b. Material sources other than virgin mine/pit (e.g. a formerly developed site) must be sampled in accordance with Table 6-2 on the following page.

   c. The sampling frequency can be reduced from those specified in Table 6-2 on the following page for projects involved large amounts of cover material and/or backfill, once a trend of compliance is established and the NYSDEC provides written authorization to reduce the sampling frequency.

Table 2. Sampling Frequency Requirements for Imported Soils

Analysis Required	VOCs	SVOCs, PCBs, Pesticides & Inorganics	
Soil Quantity (Cubic Yards)	**Discrete Samples**	**Composite Samples**	**Requirements for Preparation of Composite Samples**
0-50	1	1	Five (5) discrete samples from different locations within the fill being provided will comprise a composite sample for analysis. Additional requirements for composite sampling are described in Section 6.3.1 of this SMP.
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1,000	7	2	
>1,000	Add an additional two (2) VOC grab samples and one (1) composite sample for each additional 1,000 cubic yards of material required, unless otherwise approved in writing by the NYSDEC.		

As indicated in Table 2, VOC analysis must be performed on discrete samples only, while all other testing parameters will be analyzed for from composite samples. The testing frequency may be modified by the NYSDEC project manager in accordance with Section 1.6 of the NYSDEC's DER-10.

The following analyses will be performed on the imported fill characterization samples:

- TCL VOCs by EPA Method 8260 (grab samples only)
- TCL SVOCs by EPA Method 8270
- TCL PCBs by EPA Method 8082
- Pesticides by EPA Method 8081
- TAL metals and cyanide by EPA Methods 6010 and 7471

The results of this chemical testing will be compared to the lower of the NYSDEC's SCOs for the protection of groundwater and protection of public health for commercial use as established in Table 375-6.8(b) of 6 NYCRR Subpart 375-6 as well as the supplemental soil cleanup objectives in the NYSDEC's *CP-51: Soil Cleanup* Guidance dated October 2010 and/or any future pertinent soil cleanup guidance document. The source shall be rejected if any of these SCO's are exceeded.

3. **Non-soil Material Imported to the Site:** The following material may be imported without chemical testing, to be used as backfill beneath paved surfaces, buildings, or as part of the final soil cover layer, provided that it contains less than ten (10) percent by weight material which would pass through a size No. 80 sieve and consists of:

    a. Gravel, rock or stone, consisting of virgin material from a permitted mine or quarry; or

b. Recycled concrete or brick from a NYSDEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the NYSDOT *Standard Specifications Construction and Materials - Volume 1 (2002).*

For material designated as "virgin," written documentation shall be provided to the Site owner or owner's representative and the NYSDEC to document that the soil is native material from areas not having supported any known prior industrial or commercial development or agricultural use and is not now, nor has ever been, identified as a suspected depository for chemical, toxic, hazardous, or radioactive wastes.

The environmental professional and/or engineer will be responsible for determining the need for additional material testing, such as particle size analysis, maximum dry density determination, moisture content, Atterberg limits, etc. for geotechnical purposes.

Trucks entering the Site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases. Stockpiles will be limited to a maximum size of 500 cubic yards. Stockpiles will be kept covered at all times with appropriately anchored tarps. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced.

Bill of ladings should be provided to the Site owner or owner's representative to document that the fill was delivered from a NYSDEC approved source. The bill of ladings will be included with Periodic Review Reports.

11.0 STORMWATER POLLUTION PREVENTION

Although much of the Site has been redeveloped, prior to beginning any intrusive activities, appropriate erosion and sediment controls (ESCs) will be installed. This section is intended to provide general guidelines for installing and maintaining ESCs; however, the appropriate ESCs need to be selected on a case-by-case basis given the location of the activity, the size on the disturbance, etc. For activities resulting in a disturbance of one (1) acre or more of land, a Notice of Intent (NOI) should be filed with NYSDEC seeking to gain coverage under State Pollution Discharge Elimination System (SPDES) General Permit GP-02-01 and a Stormwater Pollution Prevention Plan (SWPPP) describing the intended ESCs to be utilized should be submitted to NYSDEC for approval. All erosion and sediment controls should be designed and installed in

accordance with the NYSDEC's Standards and Specifications for Erosion and Sediment Control, dated August 2005 or later.

All SWPPPs, if required, must fulfill all permit requirements and will provide the following minimum information:

- A background discussion of the scope of the construction/remedial project.
- A description of proposed soil erosion and sediment controls.
- A description of the type and frequency of maintenance activities required to support the control measure.
- Spill prevention measures
- Certifications

All descriptions of proposed features and structures at the Site will include a description of structure placement, supporting engineering data, construction scheduling, and references to established detailed design criteria. The SWPPP will conform to all requirements as established by applicable regulatory agencies.

Proven soil conservation practices will be incorporated in future work plans involving intrusive activities to mitigate soil erosion, off-site sediment migration, and water pollution from erosion. These practices may combine both vegetative and structural measures. Some measures will be permanent in nature and become part of the completed project (design features such as drainage channels and grading). Other measures will be temporary and serve only during the construction stage. The contractor will remove temporary measures at the completion of construction and stabilization of the Site. The selection of erosion and sediment control measures will be based on several general principles, including:

- The minimization of erosion through project design (maximum slopes, phased construction, etc.).
- The incorporation of temporary and permanent erosion control measures.
- The removal of sediment from sediment-laden storm water before it leaves the Site.

The use of appropriate temporary erosion control measures such as silt fencing and/or hay bales will be required around all soil/fill stockpiles and un-vegetated soil surfaces during redevelopment activities. These methods are described below. Stockpiles shall be graded and compacted as necessary to provide positive surface water runoff and dust control. Stockpiles of soil/fill will be placed a minimum of twenty feet from the Site boundaries and as far away from the Hudson River as practical.

Temporary Erosion Control Measures

Prior to any intrusive activity, temporary erosion and sediment control measures shall be installed and maintained until such time that permanent erosion control measures are installed and effective. Additional sediment control measures may also be necessary. Structural measures, such as those described below, will be designed and installed to provide the required sediment and erosion control:

- Silt fencing
- Straw bales
- Temporary vegetation/mulching
- Fiber reinforced plastic sheeting and turbidity curtains (work adjacent to River)

Re-grading and cover activities may result in sheet flow to various areas of the Site, and therefore, silt fencing will be used as the primary sediment control measure for disturbed areas. Prior to extensive clearing, grading, excavation, and placement of cover soils, silt fences will be installed along all construction perimeter areas to prevent sedimentation in low areas and drainage areas. The location and orientation of silt fencing will be determined based upon the planned intrusive activities, drainage pathways, etc. Breaks and overlaps in the silt fencing may be required to allow construction vehicles access to the construction areas, but will be minimized. Intermediate silt fencing will be used upslope of perimeter areas where phased construction activities are occurring. This measure will effectively lower sheet flow velocities and reduce sediment loads to perimeter fencing. In addition, silt fencing around soil stockpiles will be required. The perimeter silt fences will remain in place until construction activities in the area are completed and vegetative cover or other erosion control measures are adequately established.

Straw bales will be used to intercept sediment-laden runoff from storm water channels as needed during various phases of intrusive activities. Additional straw bale dikes may be

necessary in some areas during some phases of construction. Use of straw bales will be limited to swales and/or diversion ditches where the anticipated flow velocity will not be greater than five feet per second (FPS). Where flows may eventually exceed five (5) FPS along a swale or diversion ditch, an intermediate straw bale barrier will be installed up-gradient of the final bale barrier. The intermediate bale barrier will effectively reduce flow velocities and sediment load to the final barrier. Straw bale barriers will remain in place until construction activities contributing sediment to the barrier are complete and vegetative cover or other erosion control measures are adequately established.

In areas where activities will not resume for a period in excess of two weeks, the disturbed areas will be seeded with a quick germinating variety of grass or covered with a layer of straw mulch. The temporary cover will act to stabilize the soil and reduce erosion. As construction progresses, areas containing temporary vegetation or straw mulch can be covered without removal of the temporary vegetation or mulch.

The following minimal checks will be made throughout the duration of intrusive activities to ensure the continued performance of the ESCs:

- Barriers and hay bale checks will be installed and inspected once a week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC. All necessary repairs shall be made immediately.
- Accumulated sediments will be removed as required to keep the barrier and hay bale check functional.
- Accumulated sediment will be removed when fifty (50) percent of the storage capacity of the straw bale barrier has been reached in order to maintain performance of the barrier and prevent overtopping or failure of the straw bale barrier.
- All undercutting or erosion of the silt fence toe anchor shall be repaired immediately with appropriate backfill materials. Accumulated sediment on the up-gradient side of the silt fence will be removed whenever fifty (50) percent of the storage capacity of the fence has been reached in order to maintain performance of the fence and reduce the likelihood of a structural failure of the fence.
- Removed sediment will be stockpiled and characterized for the same parameters as the excavated soils screened for reuse at a rate of one sample per every 500 cubic yards of sediment collected. Sediment that meets the criteria in Section 6.8 can be stockpiled and

reused as fill at the Site; however, any sediment exceeding the criteria in Section 6.7 will be managed as impacted and will be disposed of off-site. Sediment laden straw bales that have lost their structural integrity and/or effectiveness will be disposed of off-site as a solid waste.

- Manufacturer's recommendations will be followed for replacing silt fencing damaged due to weathering.

- Erosion and sediment control measures identified in the SMP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters

- Silt fencing or hay bales will be installed around the entire perimeter of the construction area.

Permanent Erosion Control Measures

Permanent erosion control measures and facilities have been incorporated into the Site as part of the redevelopment of the property and will be incorporated into all future intrusive activities as appropriate. Permanent ESCs and facilities will be installed as early as possible during construction phases. Parking and building systems associated with redevelopment will not be permitted to include dry wells or other subsurface injections/disposal piping or facilities. Preventing erosion and scour of the final soil cover system will be a critical component of all future intrusive activities. Therefore, permanent erosion control measures will incorporate a combination of design features to limit overall erosion and sediment problems by ensuring that the restored soil cover is designed based on the following criteria, particularly in greenspace areas:

- Maximum slope of 33 percent (3 Horizontal: 1 Vertical) to limit erosion.
- Minimize the potential contact with, and migration of, waste fill.
- Provide a medium for the growth of vegetation to control erosion.

Design features incorporated into the construction plans to control erosion will include limiting steep slopes, routing runoff to surface water collection channels, limiting flow velocities in the collection channels to the extent practical, and lining collection channels, where appropriate. In areas where flow will be concentrated (i.e.; collection channels) the channel slopes and configuration will be designed to maintain channel stability.

Following the placement of final cover soils over re-graded areas, a re-vegetation program will be implemented to establish permanent vegetation in pervious areas. Vegetation serves to reduce erosion, enhance evapotranspiration, and improve runoff water quality. Future lawn areas will be seeded in stages as construction is completed with a minimum of one-hundred pounds of seed per acre.

In addition to the above seed mixture, mulch, mulch blankets, or synthetic fabric will be placed as appropriate to prevent erosion during turf establishment. Mulch will be placed on all slopes less than fifteen percent and a mulch blankets will be used on all slopes greater than fifteen percent. Synthetic erosion control fabric will only be placed in drainage ditches and swales. As an aid to turf establishment, seeded areas will be fertilized with a starter fertilizer.

12.0 EXCAVATION CONTINGENCY PLAN

If underground tanks or other previously unidentified contaminant sources are found during post-remedial subsurface excavations or development related construction, excavation activities will be suspended until sufficient equipment is mobilized to address the condition. The NYSDEC project manager will be promptly notified of the discovery.

Sampling will be performed on product, sediment and surrounding soils, etc. as necessary to determine the nature of the material and proper disposal method. Chemical analysis will be performed for a full list of analytes TAL metals, TCL volatiles and semi-volatiles (including 1,4-dioxane), TCL pesticides and PCBs, and PFAS, unless the site history and previous sampling results provide sufficient justification to limit the list of analytes. In this case, a reduced list of analytes will be proposed to the NYSDEC project manager for approval prior to sampling. Any tanks will be closed as per NYSDEC regulations and guidance.

Identification of unknown or unexpected contaminated media identified by screening during invasive site work will be promptly communicated by phone within two hours to NYSDEC's

Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in the Periodic Review Report.

13.0 COMMUNITY AIR MONITORING PLAN

Air monitoring will be performed at the Site during all intrusive activities in accordance with the New York State Department of Health (NYSDOH) *Generic Community Air Monitoring Plan (CAMP)*, and Appendix 1A and 1B of DER-10. All air monitoring will be conducted on a real-time basis using both hand-held field instruments and perimeter air monitoring stations. All air monitoring readings will be recorded in a logbook and/or recorded by data loggers, and made available for review by both the NYSDEC and NYSDOH. The CAMP developed for the Site consists of two primary components. The fugitive dust control plan and the vapor control plan. The presence of petroleum-related and chlorinated solvent-related contaminants remaining at the Site necessitates the need for vapor monitoring while the presence of metals is the primary contaminant that necessitates the need for dust monitoring. Air monitoring will be conducted both upwind and downwind of the construction areas and will be compared to assess if the construction activities are causing potential airborne migration of contaminants. See Appendix G of the SMP for additional details on the CAMP.

Exceedances of action levels listed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers.

14.0 ODOR CONTROL PLAN

This odor control plan is capable of controlling emissions of nuisance odors off-site. Specific odor control methods to be used on a routine basis will include the following:

1. Limiting the area of open excavations and size of soil stockpiles.
2. Reducing the speed of excavation activities.
3. Shrouding open excavations with tarps and other covers.
4. Consider weather factors when planning daily activities (e.g. wind direction).
5. Using foams to cover exposed odorous soils.
6. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include:

a. Direct load-out of soils to trucks for off-site disposal.
b. Use of chemical odorants via spray or misting systems.
c. Use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors are identified at the site boundary, or if odor complaints are received, work will be halted and the source of odors will be identified and corrected. Work will not resume until all nuisance odors have been abated. NYSDEC and NYSDOH will be notified of all odor events and of any other complaints about the project. Implementation of all odor controls, including the halt of work, is the responsibility of the remedial party's Remediation Engineer, and any measures that are implemented will be discussed in the Periodic Review Report.

All necessary means will be employed to prevent on- and off-site nuisances. At a minimum, these measures will include: (a) limiting the area of open excavations and size of soil stockpiles; (b) shrouding open excavations with tarps and other covers; and (c) using foams to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors in surrounding neighborhoods.

If nuisance odors develop during intrusive work that cannot be corrected, or where the control of nuisance odors cannot otherwise be achieved due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering the excavation and handling areas in a temporary containment structure equipped with appropriate air venting/filtering systems.

15.0 DUST CONTROL PLAN

Particulate monitoring must be conducted according to the Community Air Monitoring Plan (CAMP) provided Appendix G of the SMP. If particulate levels at the site exceed the thresholds listed in the CAMP or if airborne dust is observed on the site or leaving the site, the dust suppression techniques listed below will be employed. The remedial party will also take measures listed below to prevent dust production on the site.

A dust suppression plan that addresses dust management during invasive on-site work will include, at a minimum, the items listed below:

- Dust suppression will be achieved using a dedicated on-site water truck for road wetting. The truck will be equipped with a water cannon capable of spraying water directly onto off-road areas including excavations and stockpiles. Fire hoses and/or garden hoses equipped with sprayers will be utilized for smaller type projects. All water utilized for dust control must be potable water from municipal water systems. The use of groundwater from the Site will not be permitted.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-site roads will be limited in total area to minimize the area required for water truck sprinkling.
- Paved areas will be swept clean on a daily basis or more frequently as needed, to reduce the potential for dust generation.
- Traffic speeds, particularly for construction traffic will be reduced.
- Stockpiles and excavations will be covered with tarps and polyethylene sheets will be used reduce the potential for dust generation.

ATTACHMENT A

Request to Import Fill

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e). Use of this form is not a substitute for reading the applicable Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that would pass a size 80 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

_____ _____

Signature Date

_____

Print Name

_____

Firm

Revised August 2014

APPENDIX F

Health and Safety Plan

SITE HEALTH AND SAFETY PLAN

PROJECT INFORMATION

Project Name: Post-Installation Monitoring of Sub-Slab Depressurization System and Groundwater Monitoring in accordance with the SMP	**CHA Project No.** 059294.001
Project Start Date: **Completion Date:**	**Weather:**
Project Location: 140 Cortland Avenue Syracuse, New York 13202	**Project Task:** Inspection of sub-slab depressurization system and groundwater monitoring
Description of Work: *Be Specific*	Quarterly inspection and intermittent sub-slab vapor and indoor air sampling per the Site Management Plan; Groundwater monitoring in accordance with the procedures and schedule outlined in the Site Management Plan

Key Personnel: *Responsibilities:*	Samantha Miller *Project Manager*	Karyn Ehmann *Field Team Leader*	Karyn Ehmann *Site Safety Officer*

Description of Hazards: Potential exposure to elevated levels of chlorianted solvent and petroleum compound vapors in the sub-slab soil vapor.
Slips, trips associated with general field work.
Electrical hazards associated with the sub-slab depressurization system configuration.
Field work hazards associated with sampling groundwater monitoring wells in an outdoor environment including ticks, bees, sun exposure, hot or cold temperatures, inclement weather, and proximity to vehicles in the parking lot/roadway.
Minimal risk of exposure to site contaminants of concern during groundwater purging and sampling

TASK HAZARDS				TASK SAFETY MEASURES & PPE	
Eye	Chemical Exposure	Yes ☐	No ☒	☒ Safety Glasses	
	High Heat/Cold	Yes ☐	No ☒	☐ Safety Goggles	
	Dust/Flying Debris	Yes ☒	No ☐	☐ Face Shield	
	Impact	Yes ☐	No ☒	☐ Shaded Lenses	
	Light/Radiation	Yes ☐	No ☒		
Head	Impact	Yes ☒	No ☐	☒ Hard Hat: ☐ Orange or ☐ White or ☐ Blue	
	Electrical Shock	Yes ☐	No ☒	☐ Reflector Tape (Required for night operations)	
	Lack of Visibility	Yes ☐	No ☒		
Foot	Chemical Exposure	Yes ☐	No ☒	☒ Work Boots	☐ Steel Toed Boots
	High Heat/Cold	Yes ☐	No ☒	☐ Ankle Protection	☐ I/75 C/75 (Impact/Compression)
	Impact/Compression	Yes ☐	No ☒	☐ Rubber Boots	☐ Cd Type 1 or 2 (Conductive)
	Slips/Trips	Yes ☒	No ☐	☐ Insulated Boots	☐ PR (Puncture Resistant)
	Puncture	Yes ☐	No ☒	☐ Non-slip Soles	☐ Mt/70 or 50 or 30 (Metatarsal)
	Slippery/Wet Surface	Yes ☐	No ☒	☐ Chemical resistant	☐ EH (Electrical Hazard)
	Explosive/Flammable Atmospheres	Yes ☐	No ☒		☐ SD Type I or II (Static Dissipative)
	Electrical	Yes ☐	No ☒		
Hand	Chemical Exposure	Yes ☒	No ☐	☐ Work Gloves	☐ Rubber Gloves
	High Heat or Cold	Yes ☐	No ☒	☐ Leather Gloves	☒ Nitrile Gloves
	Cuts/Abrasion	Yes ☐	No ☒	☐ Latex Gloves	☐ Insulated Gloves
	Puncture	Yes ☐	No ☒	☐ Vinyl Gloves	☐ Metal Mesh Gloves
	Electrical Shock	Yes ☐	No ☒	☐ Neoprene Gloves	
	Bloodborne Pathogen	Yes ☐	No ☒	☐ Butyl Gloves	
Body/Torso	Chemical Exposure	Yes ☐	No ☒	☐ Tyvek Suits: ☐ White or ☐ Yellow	
	Extreme Heat/Cold	Yes ☐	No ☒	☐ UV Protection	☐ Cooling/Heating Vests
	Abrasion	Yes ☐	No ☒	☐ Coveralls	
	Impact	Yes ☐	No ☒	☐ Reflective Vest	
	Electrical Arc	Yes ☐	No ☒	☐ Electrical Safety PPE	

Fall	Fall Hazard	Yes ☐	No ☒	☐ Harness ☐ Fall Protection Lanyard
Noise	Noise Hazard	Yes ☐	No ☒	☐ Ear Plugs ☐ Ear Muffs
Respiratory	Chemical Exposure	Yes ☐	No ☒	☐ Respirator: ☐ ½ Face or ☐ Full Face
	Confined Spaces	Yes ☐	No ☒	☐ Cartridge: ☐ P or ☐ OV or ☐ C
	Particulate Exposure	Yes ☐	No ☒	☐ PA/PR
Biohazards	Dry Weather (e.g. wildfires)	Yes ☐	No ☒	
	Poisonous Plants	Yes ☐	No ☒	☐ Ivy Block ☐ Long Pants/Sleeves
	Ticks	Yes ☒	No ☐	☐ Insect Repellent ☒ Tick Removal Kit
	Bee Stings	Yes ☒	No ☐	☒ Allergy Kits ☐ Epipen
	Poisonous Snakes	Yes ☐	No ☒	☐ Chaps ☒ Be Alert/Observant
	Pigeon Guano	Yes ☐	No ☒	☐ PPE ☐ Dust/Nuisance Respirator
	Large Mammals	Yes ☐	No ☒	☐ SOPs
Additional Equipment	As Needed			☐ Traffic Cones ☐ Signage ☐ Flags ☐ 2- Way Radios ☐ Flashlight/Floodlights ☒ First Aid Kit ☒ Hand/Power Tools ☐ Beacon Light ☐ Ladders

SITE CONTROL

Site Control/Site Security[1]: ***Describe Measures***	Check-in with Site security or front desk workers upon arrival	M & PT: ☐ Y ☒ N *If yes, sketch information on separate sheet*
Confined Space Entry: *If Yes, Attach Permit*	☐ Y ☒ N	
Decontamination: *If Yes, Describe Procedures*	☒ Y ☐ N Decontaminate all non-disposable equipment between purging/sampling at each groundwater monitoring well.	
Site Monitoring[2]: *If Yes, Describe Procedures*	☐ Y ☒ N	

CONTINGENCY PLAN

Emergency Contacts: *Provide Telephone Numbers*	Police: 911 Ambulance: 911 Fire: 911 Hospital: 911	Client Contact: Gail Cawley Client Phone #: 315-431-7248 CHA PM Phone #: 315-257-7154 Poison Control: 1-800-222-1222
Route to Hospital:	See Attached	
Communication:	☒ Cell Phone ☐ Nearest Pay Phone ☐ Pager	

Comments:

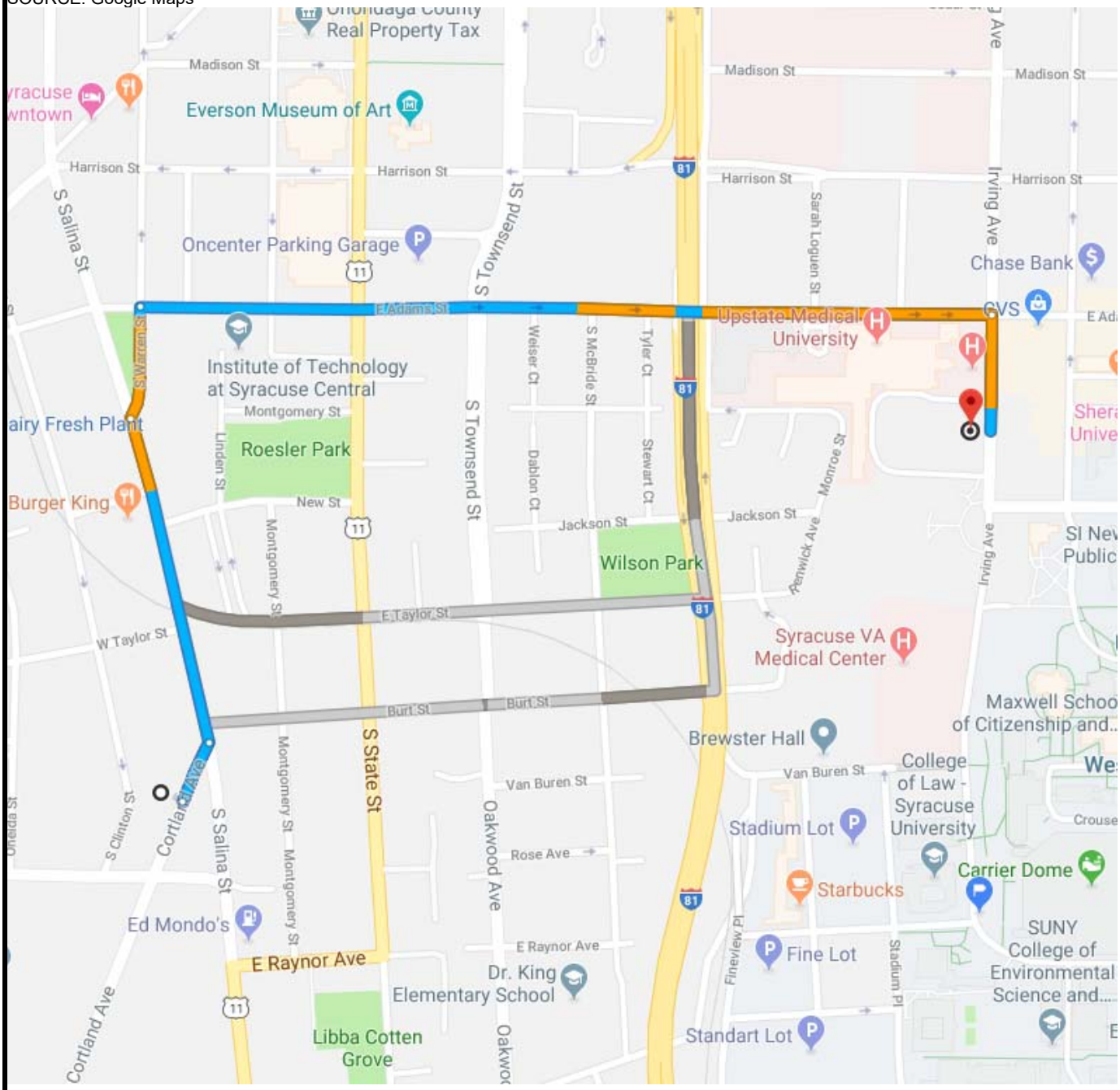
PLAN SIGN-OFF

Name:	Name:	Name:	Name:
X:	X:	X:	X:
Date:	Date:	Date:	Date:
Name:	Name:	Name:	Name:
X:	X:	X:	X:
Date:	Date:	Date:	Date:

SAFETY TRAINING/MEDICAL MONITORING			
Type:	Type:	Type:	Type:
Date:	Date:	Date:	Date:
Type:	Type:	Type:	Type:
Date:	Date:	Date:	Date:

1. Who is providing site control/site security, if any, for this task? Examples of Site Control/Site Security include police, client representative(s), owner(s), CHA or client supervisors
2. What are you monitoring on site, if any, for this task? Examples of Site Monitoring include air monitoring, like carbon monoxide or oxygen levels or wet bulb temperatures

SOURCE: Google Maps



140 Cortland Ave
Syracuse, NY 13202

1. Head north on Cortland Ave toward S. Salina St.
2. Turn left onto S. Salina St.
3. Slight right onto S. Warren St.
4. Turn right onto E. Adams St.
5. Turn right onto Irving Ave

Crouse Hospital
Syracuse, NY 13210

CHA ©2020
300 South State Street Suite 600, Syracuse, NY 13202
www.chacompanies.com

NOT TO SCALE | DATE: June 2020

FIGURE 1
DIRECTIONS TO NEAREST HOSPITAL
Former Coyne Textile Facility
City of Syracuse, New York
Onondaga County, New York

Health and Safety Plan

Former Coyne Textile Facility
140 Cortland Avenue
Syracuse, New York

NYSDEC BCP Site No. C734144

CHA Project Number: 059294.001

Prepared for:
JMA Wireless d/b/a GEC Consulting
168 Brampton Road
Syracuse, New York 13205

Prepared by:

300 South State Street, Suite 600
Syracuse, New York 13202
Phone: (315) 471-3920

June 2020

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LIST OF ACRONYMS & ABBREVIATIONS

6NYCRR	Title 6 New York Codes, Rules and Regulations
APR	Air Purifying Respirator
C	Ceiling Value
Ca	Potentially Cancerous
CAMP	Community Air Monitoring Plan
CFR	Code of Federal Regulations
CHA	CHA Consulting, Inc.
CO	Carbon Monoxide
CPR	Cardiopulmonary Resuscitation
CRZ	Contaminant Reduction Zone
Cis-1,2-DCE	cis-1,2-dichloroethene
EZ	Exclusion Zone
FLT	Field Team Leader
H2S	Hydrogen Sulfide
HASP	Health and Safety Plan
HAZWOPER	Hazardous Waste Operations and Emergency Response
HSC	Health and Safety Coordinator
IDLH	Immediately Dangerous to Life and Health
IRM	Interim Remedial Measure
JSA	Job Safety Assessment
LEL	Lower Explosive Limit
NIOSH	National Institute for Occupational Health and Safety
NYSDEC	New York State Department of Environmental Conservation
O2	Oxygen
OSHA	Occupational Safety and Health Administration
PCE	Tetrachloroethene
PEL	Permissible Exposure Limit
PID	Photoionization Detector
PM	Project Manager
PPE	Personal Protection Equipment
RD Report	Remedial Design Report
REL	Recommended Exposure Limit
RI	Remedial Investigation
SOP	Standard Operating Procedures
SSO	Site Safety Officer
ST/STEL	Short Term Exposure Limit
SZ	Support Zone
TCE	Trichloroethene
TWA	Time Weighted Average
UST	Underground Storage Tank

ft^2	Square Foot
ppm	Part per Million
mg/Kg	Milligram per Kilogram
mg/L	Milligram per Liter
mg/m^3	Milligram per Cubic Meter
µg/Kg	Microgram per Kilogram
µg/L	Microgram per Liter

1.0 INTRODUCTION

The following Health and Safety Plan (HASP) has been created for the protection of CHA Consulting, Inc. (CHA) staff conducting remedial activities at the Former Coyne Textile Facility (Site), located at 140 Cortland Avenue in the City of Syracuse, New York. Remedial activities will be performed in accordance with an approved work plan. This project's various assignments require CHA employees to perform tasks where personal safety could be endangered due to chemical, physical, and/or biological hazards. While conducting field work, CHA employees may be exposed to hazards including but not limited to:

- Chemical exposure due to the presence of subsurface contamination during intrusive activities such as the installation of extraction/injection wells, underground storage tank (UST) removal or soil excavation
- Slip/Trips/Falls
- Cold Stress/Heat Stress
- Excessive noise for certain operations
- Heavy equipment operation
- Environmental and Biological hazards (e.g. insects, plants, ultra-violet exposure, etc.)

The requirements and guidelines in this HASP are based on a review of available information and an evaluation of potential on-Site hazards, including: Environmental Site Assessments conducted by GZA GeoEnvironmental, a Remedial Investigation (RI) conducted by CHA in 2018, and experience from the Source Area interim remedial measures (IRM) conducted by CHA in June 2019. This HASP will be discussed with Site personnel and will be available on-Site for review while work is underway. CHA personnel will report to the Project Manager (PM) and consult with the Health and Safety Coordinator (HSC) in matters of health and safety. The Site Safety Officer (SSO) and Field Team Leader (FTL) is the same person for this project and is responsible for compliance with this HASP, stopping work when necessary, and for implementation of this HASP for daily site activities.

Non-intrusive activities within CHA's Scope of work are those that do NOT have the potential to jeopardize the health and safety of Site workers, the public, or the environment with respect to Site contaminants in the soil or groundwater.

Intrusive activities within CHA's Scope of Work are those that have the potential to cause health and safety concerns to Site workers, the public, or the environment in regards to Site contaminants.

These activities and any non-intrusive activities conducted in an Exclusion Zone require training per 29 CFR 1910.120 on a NYSDEC Brownfield hazardous waste site.

2.0 KEY PERSONNEL

2.1 OFF-SITE PERSONNEL

Title: CHA Corporate Director of Health & Safety
Description: Responsible for the CHA's corporate health and safety program and developing procedures, policies, and coordinating training programs. Additionally, provides senior level guidance on development of HASPs and interpretation of regulations.
Contact:
Anthony Tremblay
(518) 302-9452(Office)

Title: Project Manager
Description: Reports to upper level management, provides sufficient authority and resources to satisfy health and safety requirements, and assumes total control over site activities. The Project Manager is ultimately responsible for ensuring field implementation of this HASP.
Contact:
Samantha Miller
(315) 257-7154 (Office)
(915) 329-9898 (Cell)

2.2 ON-SITE PERSONNEL

Title: Site Safety Officer
Description: Advises the field team on all aspects of health and safety issues, recommends stopping work if any operation threatens worker or public health and safety.
Contact:
Karyn Ehmann
(315) 257-7250 (Office)
(585) 721-2402 (Cell)

Title: Field Team Leader/Work Party
Description: Responsible for coordinating project requirements in the field. The Field Team Leader oversees daily activities of the project and is, therefore, responsible for implementing health and safety requirements and following safety procedures in the field. The Field Team Leader will contact the local emergency response organizations to notify concerned affiliates of the hazards associated with this project.

Contact:
Karyn Ehmann
(315) 257-7250 (Office)
(585) 721-2402 (Cell)

2.3 ON-SITE OPTIONAL PERSONNEL

Title: Health and Safety Coordinator
Description: Responsible for making recommendations regarding the work area to the SSO. Inspections may be periodically conducted to monitor worker health and safety and will address such issues as appropriate personal protection equipment (PPE), required air monitoring, decontamination procedures, and worker safety.
Contact:
Anthony Tremblay
(518) 302-9452(Office)

Title: Project Engineer
Description: Guides the Project Team in design implementation.
Contact:
Samantha Miller, P.E.
(315) 257-7154 (Office)
(915) 329-9898 (Cell)

Title: Scientific Advisor
Description: Guides the Project Team in scientific matters.
Contact:
Christopher Burns, Ph.D., P.G.
(804) 412-8841 (Office)
(804) 822-0406 (Cell)

2.4 AS-NEEDED PERSONNEL

Title: Fire Department
Description: Responds to fires and performs rescues.
Contact:
911

Title: New York State DEC Spill Hotline
Description: Responds to all petroleum and other hazardous releases into the environment, anywhere in New York State.

Contact:
(800) 457-7362

Title: EPA National Response Center
Description: Responds to all oil, chemical, radiological, biological and etiological discharges into the environment, anywhere in the United States and its territories.
Contact:
(800) 424-8802

3.0 SITE ENTRY

3.1 OBJECTIVES

This HASP has been developed for the protection of CHA employees on the Site. Subcontractors will be responsible for developing a HASP to protect their employees. Modifications to this HASP and its PPE requirements must occur if Site activities indicate higher levels of exposure than previously encountered or anticipated.

3.2 SAFETY MEETINGS

The SSO shall conduct a safety meeting prior to entry to the Site or the initiation of any Site activity, if any conditions change, and before each workday. The Daily Job Site Safety Brief form in Appendix A will be utilized to document the daily job Site safety briefings.

3.3 SAFETY TRAINING

The SSO will confirm that every person assigned to a task has had adequate training for that task and that the training is up-to-date by checking with the CHA Safety Coordinator and online database. CHA staff working on this project shall have a minimum of:

- 40-Hour Initial Hazardous Waste Operations and Emergency Response (HAZWOPER) training in accordance with 29 CFR 1910.120;

- Current 8-hour HAZWOPER Refresher Training;
- Excavation Awareness Training;
- CHA Respiratory Protection Plan;
- Field equipment safety training where applicable; and
- Applicable Job Hazard Analyses (JHAs).

Training will have been conducted and certified by CHA in accordance with Occupational Safety and Health Administration (OSHA) regulations.

3.4 MEDICAL SURVEILLANCE

CHA personnel will have had a medical surveillance physical consistent with CHA Procedures and/or OSHA regulations and performed by a qualified occupational health physician. The SSO shall confirm, prior to initiation of work on this site, that CHA personnel assigned to a task have had an annual occupational physical and respiratory fit test, and has been determined medically fit by the occupational health physician for respirator use and this type of work, if deemed necessary by the PM.

3.5 SITE MAPPING

Location mapping has been included in the Figures section of the RD Report: Figure 1 illustrates the location of the Site. Appended to this HASP is the route to the nearest hospital from the subject Site, included as Figure 1. Anticipated truck routing and loading zone, and zones of work, including the exclusion zone, contaminant reduction zone, and the support zone, are identified on Figure 2. Note that much of the work will be conducted outside, therefore the work zones may change on a daily basis depending on the wind direction and area of the site in which work is being conducted.

4.0 SITE CHARACTERIZATION

4.1 SITE DESCRIPTION

The Former Coyne Textile Facility is located in an urban area at 140 Cortland Avenue in the City of Syracuse, Onondaga County, New York. The Site is currently unoccupied, contains one building with an approximately 52,000-square foot (ft^2) footprint, and is zoned for commercial use. The Site is identified as two non-contiguous areas as described below:

- The former main laundry facility and offices are known as 140 Cortland Avenue (Tax Map No. 094.-05-06.0) and consist of one parcel of land totaling approximately 1.75-acres in size. 7 This parcel will be referred to as the main parcel. The parcel consists of the currently

vacant former laundering facility and offices, and concrete sidewalks. The building is a concrete block building with a slab-on-grade foundation.

- The park area and employee parking area are known as 1002-1022 South Salina Street/Cortland Avenue (Tax Map No. 094.-20-01.0) and 10247-1040 South Salina Street/Tallman Street (Tax Map No. 094.-20-02.0) and consist of two parcels totaling approximately 1.70-acres (0.57 and 1.13 acres, respectively) in size. These parcels consist of a small park and a fenced in asphalt parking lot, referred to as Coyne Park and the former employee parking area, respectively.

The contaminants of concern have been described in previous reports and are summarized in the RD Report. Generally, volatile organic compounds including tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride, and benzene are prevalent at various locations across the Site.

4.2 NEIGHBORING PROPERTIES

The Site is bordered by the following:

- North: Vacant lot
- South: Tallman Street, parking lots, Central New York Regional Transportation Authority
- East: South Salina Street, vacant lot currently registered in the Brownfield Cleanup Program as Site Code C734140
- West: Warehouse and manufacturing buildings

4.3 SITE TOPOGRAPHY

The topography of the Site is relatively flat, with an elevation of approximately 390 feet above mean sea level. Onondaga Creek is approximately 600 feet to the west of the site and flows north to Onondaga Lake. The project area is relatively flat, but surface and groundwater movement is generally westward towards Onondaga Creek.

4.4 METEROLOGIC DATA

Time of year work is to be conducted is during between August and October. The weather and temperature for that time of year is expected to vary, but warmer temperatures are typically expected this time of year. Prior to each day's activities, the daily forecast should be monitored for indications of adverse work conditions. If poor weather hinders the continuation of the day's activities the Field Team Leader may notify the PM and stop work for the day. Information on heat and cold stress are included in Appendix B.

5.0 SITE CONTROL MEASURES

Exclusion Zone (EZ): Will include a 25-foot buffer around Treatment Zones 1, 2 and 3 during active intrusive work. The approximate location of the EZ is labelled in red on Figure 2. Hazards within the EZ include inhalation of hazardous vapors, explosive potential, open excavations, excessive noise, slips/trips/falls, contact with heavy equipment, direct contact with contaminated soil or groundwater, and direct contact with chemical oxidants used in treatment.

Contamination Reduction Zone (CRZ): Will be established immediately adjacent to the Exclusion Zone and will be utilized for management of soil samples, documentation of contractor activities, decontamination of personnel and equipment, and donning and doffing of PPE. The approximate location of the CRZ is labelled in yellow on Figure 2.

Hazards within the CRZ include contact with contaminated soil or water, inhalation of vapors from contamination, contact with heavy equipment, and slips/trips/falls. Physical hazards may pose a risk and good judgement should be utilized. Always maintain situational awareness.

Support Zone (SZ): Will include all areas outside the EZ and CRZ. Daily Jobsite Safety Briefings will be conducted in the support zone upon contractor arrival. Contractors and all visitors to the Site will sign in with the Field Team Leader.

Hazards within the support zone include slips/trips/falls, contact with heavy equipment, and other physical hazards associated with the work area and physical setting at the Site. Personnel within the SZ do not require HAZWOPER training.

5.1 COMMUNICATION

Communication shall be accomplished by person to person verbal correspondence and through the use of cellular telephones. Communication procedures will be reviewed during the Daily Jobsite Safety Briefing before entering the work zone.

6.0 HAZARD EVALUATION

Hazards are generally divided into three categories; 1) exposure to chemicals and hazardous materials, 2) safety/physical hazards, and 3) biological hazards. Chemical and hazards materials are further segregated by their specific compound, exposure threshold, and route of exposure.

All chemical hazards identified for the Site are denser than air, so monitoring will occur near the ground surface. Physical hazards are generally slips/trips/falls, caught in/between moving equipment or parts, traffic and excavations. Biological hazards typically include poisonous plants, wild animals, and insects.

6.1 CHEMICAL HAZARDS

Chemical	OSHA PEL	NIOSH REL	IDLH	Ionization Potential (I.P)	Characteristics	Routes of Exposure	Symptoms of Exposure and Health Effects
Tetrachloroethene (PCE)	TWA 100 ppm C 200 ppm (for 5 mins in any 3-hr period) max peak of 300 ppm	NA, Ca Minimize workplace exposure concentration	150 ppm	9.32 eV	Colorless liquid with a mild chloroform-like odor	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema, liver damage; carcinogenic
Trichloroethene (TCE)	TWA 100 ppm C 200 ppm 300 ppm (5 min max in 2-hr period)	NA Ca	1000 ppm	9.45 eV	Colorless liquid (unless dyed blue) with a chloroform-like odor	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, visual disturbance; lassitude (weakness, exhaustion); dizziness, tremors, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias; paresthesia; liver injury; carcinogenic
Cis- 1,2-Dichloroethene (DCE)	TWA 200 ppm	TWA 200 pm	1000 ppm	9.65 eV	Colorless, oily liquid with a chloroform-like odor	Inhalation, ingestion, skin and/or eye contact	Irritation skin; central nervous system depressed; liver, kidney, and lung damage
Vinyl Chloride	TWA 1 ppm C 5 ppm (15-minute)	NA Ca	N/A	10.0 eV	Colorless gas or liquid (below 7°) with a pleasant odor at high concentrations	Inhalation, skin and/or eye contact (as a liquid)	Lassitude (weakness, exhaustion); abdominal pain, GI bleeding; enlarged liver; pallor or cyan of extremities; liquid: frostbite; carcinogenic
Benzene	TWA 1 ppm ST 5 ppm	Ca TWA 0.1 ppm	CA 500 ppm	9.24 eV	Colorless to light-yellow liquid with an aromatic odor	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression; [potential occupational carcinogen]

Chemical	OSHA PEL	NIOSH REL	IDLH	Ionization Potential (I.P)	Characteristics	Routes of Exposure	Symptoms of Exposure and Health Effects
Lead	TWA 0.05 mg/m³	TWA 0.05 mg/m³	100 mg/ m³	NA	Heavy, ductile, soft and gray solid. Non-combustible in solid form	Inhalation, ingestion, skin and/or eye contact	Lassitude; insomnia; facial pallor; anorexia; weight loss; malnutrition; constipation; abdominal pain; colic; anemia; gingival lead line; tremor; paralysis of the wrist, ankles; encephalopathy; kidney disease; irritation of the eyes; hypertension
Beryllium	TWA 0.0002 mg/m³	Ca C 0.0005 mg/m³	4 mg/ m³	NA	Hard, brittle, gray-white solid. Non-combustible in bulk form, slight explosion hazard in powder/dust form.	Inhalation, skin and/or eye contact	Berylliosis (chronic exposure): anorexia, weight loss, lassitude, chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency, eye irritation, dermatitis

C – Ceiling value
Ca – Potentially Cancerous
IDLH – Immediately Dangerous to Life and Health
NIOSH – National Institute for Occupational Safety and Health
OSHA – Occupational Safety and Health Administration
PEL – Permissible Exposure Limit
REL – Recommended Exposure Limit
ST – Short Term Exposure Limit
TWA – Time Weighted Average

Chemicals brought on Site for use in remedial activities require safety data sheets (SDS). The chemicals anticipated to be used include a 40% solution of sodium permanganate for the groundwater recirculation and zero-valent iron for the soil mixing. SDSs for both are included in Appendix C. However, the chemicals will be supplied by the contractor and, in the event of an emergency, the contractor supplied SDSs shall be used for guidance.

6.2 DISPERSION PATHWAYS

The potential exposure mechanism that can transport contaminants of concern from the areas of the intrusive site activities to other areas of the site, as well as beyond the boundaries of the Site, are:

- Inhalation of volatilized contaminants into air;

- Contact with contaminated groundwater or soil;
- Projection of contaminated material in air;
- Movement of dust particles;
- Conveyance in sediment laden water runoff;
- Failure to adhere to containerization and/or decontamination procedures; and
- Failure to adhere to the Field Sampling Plan and/or Standard Operating Procedures.

Visible emissions can be a problem at any site that involves intrusive activities and will be controlled. The primary effect of visible dust is irritation of the eyes, nose, and throat. While it is not anticipated, visible emissions will be monitored, and the following corrective actions can be implemented if irritation or concern of dust arises.

- Minimizing the amount of exposed ground surface/covering exposed surfaces;
- Reducing the speed of intrusive activities;
- Lightly wetting surfaces or applying misters;
- Using chemical or foam dust suppressants (with authorization only); and
- Reducing vehicle speeds.

The primary effect of nuisance dust is irritation of the eyes, nose, and throat with elevated concentrations.

6.3 PHYSICAL HAZARDS

Physical hazards such as the following may be encountered on site:

- Slip/trip/fall
- Falls from elevated surfaces
- Excavations;
- Heat stress;
- UV radiation;
- Heavy equipment operation;
- Excessive noise;
- Caught in/between moving parts or equipment;
- Lifting (generators, drums, equipment); and
- Traffic – on access roadways at the facility.

6.4 BIOLOGICAL HAZARDS

Biological hazards such as the following may be encountered on site:

- Ticks, mosquitoes, stinging insects, arachnids, chiggers (allergic reactions and/or infectious diseases that can be transmitted to humans by animals)
- Rodents, snakes, zoonotic diseases (physical contact and/or infectious diseases that can be transmitted to humans by animals)

6.5 HAZARD IDENTIFICATION AND CONTROL

Hazard controls generally consist of following specific safety procedures, training, engineering controls, air monitoring, and PPE selection. CHA employees are required to use the PPE appropriate to their work task and potential exposures as outlined in this HASP.

The levels of PPE assigned to each activity are based on available information on the estimation of exposure potential associated with each work task.

Affected Personnel	Task/Operation	Hazards	Hazard Control
All personnel in Exclusion Zone and Contamination Reduction Zone	UST removal and excavation of contaminated soil.	• Inhalation of organic vapors, dusts, and other airborne particulates. • Skin and/or eye contact with contaminated soil and/or groundwater, decontamination solutions, and sample preservation agents. • Explosion hazard during cleaning and removal of the UST.	• Conduct air monitoring in accordance with Section 6.0. Wear the required personal protective equipment when conditions or activities indicate the need for it. Stand upwind to extent possible to reduce inhalation hazard. • Avoid walking through puddles and contacting other potential sources of contaminants such as drums. • Keep airborne dust levels to a minimum by wetting down surfaces. • Remain a minimum of 5-feet away from open excavation faces. • Maintain eye contact with equipment operator when moving in or around the excavation.
All personnel in Exclusion Zone and Contamination Reduction Zone	Collection of confirmation samples, waste disposal samples, and imported clean fill materials.	• Inhalation of organic vapors, dusts, and other airborne particulates. • Skin and/or eye contact with contaminated soil,	• Conduct air monitoring in accordance with Section 6.0. Wear the required personal protective equipment when conditions or activities indicate

Affected Personnel	Task/Operation	Hazards	Hazard Control
		decontamination solutions, and sample preservation agents.	the need for it. Stand upwind to extent possible to reduce inhalation hazard. • Avoid walking through puddles and contacting other potential sources of contaminants such as drums. • Utilize the Contractor and excavator when collecting samples from the sidewall and bottom, so as to remain a safe distance from the excavation face. • Keep airborne dust levels to a minimum by wetting down surfaces.
All personnel in Exclusion Zone and Contaminant Reduction Zone	Installation and decommissioning of extraction/injection wells and associated equipment.	• Inhalation of organic vapors, dusts, and other airborne particulates. • Skin and/or eye contact with contaminated soil and/or groundwater, decontamination solutions, and sample preservation agents.	• Conduct air monitoring in accordance with Section 6.0. Wear the required personal protective equipment when conditions or activities indicate the need for it. Stand upwind to extent possible to reduce inhalation hazard. • Avoid walking through puddles and contacting other potential sources of contaminants such as drums.
All personnel	All field activities	Slips, trips, & falls	• Wear appropriate work boots. • Avoid slippery surfaces. • Remind field personnel to exercise good housekeeping practices • Be observant of activities around.
All personnel	All field activities	Physical injuries, such as abrasions or cuts	• Use safe work practices • Don proper PPE • Have a first aid kit readily available at site
All personnel	Heavy lifting	Back injuries from lifting	• Practice safe lifting techniques. • Always use a minimum of 2 people for heavy lifts • Lift with legs. Do not twist while carrying the load.
All personnel	Heat stress	Exposure to elevated temperatures associated with working outdoors in warm/hot weather conditions.	• Wear lightweight clothing • Drink lots of water • Take breaks in the shade or cool areas
All personnel	Cold stress	Exposure to low temperatures associated with working outdoors in variable weather conditions	• Wear warm, dry clothing & layers • Take frequent breaks in warm areas

Affected Personnel	Task/Operation	Hazards	Hazard Control
All personnel	All field activities	Fire (general)	• Identify location of fire extinguisher(s) – contractor sourced • Keep ignition sources away from flammable materials and atmospheres.
All personnel	All field activities	Noise Exposure	• Wear hearing protection if you must shout to hear someone who is standing one foot or less away.
All personnel	All field activities	Contact with heavy equipment and traffic	• Do not stand unnecessarily close to the excavator when it is operating • Do not stand in lanes of traffic. Use cones or barricades to delineate work areas when work within access roads is required. • Wear a hard hat and high visibility clothing • Make eye contact with the operator/drivers
All personnel	All field activities	Security	• Stay alert to all on-site activities • Report suspicious activities to PM and/or client
All personnel	All field activities	Ticks	• Avoid unnecessary entry into tall grass and brushy areas. • Wear insect repellents containing DEET or Permethrin. • Wear light colored clothing to easily identify ticks. • Inspect yourself throughout the day and following completion of field activities. • Tuck pants into socks or boots, wear long sleeves and minimize skin exposure.
All personnel	All field activities	Stinging insects (bees, hornets, wasps and yellow jackets)	• Do not agitate nests unless absolutely necessary. • Be aware of holes in the ground within the work area. • Avoid wearing bright or patterned clothing. • Avoid wearing/using scented items (e.g., perfume, cologne, soaps). • Inspect food and drinks prior to consumption. • Use insecticide when necessary.

Affected Personnel	Task/Operation	Hazards	Hazard Control
All personnel	All field activities	Zoonotic diseases	• Avoid dermal contact with animals, droppings, or carcasses. • Avoid inhalation of dust that is contaminated with droppings or carcasses. • See Appendix D for information regarding the SARS-COV-2 (COVID-19) pandemic.
All personnel	All field activities	Hantavirus	• Avoid dermal contact with rodent droppings. • Avoid inhalation of dust that is contaminated with rodent droppings.
All personnel	All field activities	Mosquitos/West Nile Virus	• Eliminate mosquito breeding areas (standing water) at the work site. • Apply insect repellent containing DEET to exposed, unbroken skin per the manufacturer's instructions. Wear light colored clothing (pants, long sleeved shirts and socks).
All personnel	All field activities	Snakes	• Avoid actions which increase the risk of encountering a snake (e.g., overturning logs, rocks, etc.).
All personnel	All field activities	Rodents	• Avoid contact with rodents and burrowing animals.
All personnel	All field activities	Arachnids	• Avoid actions which increase the risk of encountering arachnids (e.g., overturning logs, placing hands in dark places).
All personnel	All field activities	Physically Damaging Plants (e.g., briars, thistles)	• Remove plants prior to implementing the work activity. • Use briar resistant pants or chaps if working in dense thorny vegetation.
All personnel	All field activities	Poisonous Plants	• Avoid contact with the plant. • Cover arms and hands when working in the vicinity of the plants. • Frequently wash potentially exposed skin.

Affected Personnel	Task/Operation	Hazards	Hazard Control
			• Treat every surface that may have come in contact with the plant as contaminated.
All personnel	All field activities	Ultraviolet Exposure	• Cover skin and limit time in sun to extent practical. • Apply sunscreen.

6.6 AIR MONITORING

The following environmental monitoring instruments shall be used on site at the specified intervals. Monitoring instruments will be calibrated prior to each full day of equipment usage or more frequently in accordance with manufacturer's recommendations.

- PID with 10.6 eV lamp or higher;
- 4 gas meter (CO, O_2, H_2S, LEL).

The PID shall be used to detect volatile organic vapors in the ambient air and will be calibrated and setup prior to the start of the days' activities.

Contaminant/Method	Frequency	Action Level	SSO Action
Organic Vapors (PID)	Ongoing throughout excavation activities. Background will be monitored prior to startup of daily work.	0 to 5 ppm	Monitor every 15 minutes. Maintain Level D PPE
Organic Vapors (PID)	Ongoing throughout excavation activities. Background will be monitored prior to startup of daily work.	5 to 25 ppm, sustained for 5 minutes	Stop work and notify PM of elevated organic vapors. All personnel will temporarily exit the Exclusion Zone. The contractor will implement engineering controls in attempt to mitigate vapor levels. If organic vapor levels are unable to be reduced to less than 5 ppm via engineering controls,

Contaminant/Method	Frequency	Action Level	SSO Action
			upgrade to Level C PPE. The PM must be notified of this PPE upgrade.
Organic Vapors (PID)	Ongoing throughout excavation activities. Background will be monitored prior to startup of daily work.	>25 ppm, sustained for 5 minutes	Stop work and evacuate the Exclusion Zone. Notify the PM of elevated organic vapors. Consult the Health and Safety Manager for guidance. This HASP must be updated prior to any additional upgrade in PPE.
Lower Explosive Limit (LEL) (4 gas meter)	Ongoing throughout excavation activities. Background will be monitored prior to startup of daily work.	10% LEL	A 4-gas meter will be utilized to monitor for flammable concentrations of vapor when the UST and highly contaminated soils are encountered. Work shall cease and personnel will leave the Exclusion Zone when the LEL reading is 10% or higher (which is equivalent to 0.12% benzene, 0.18% phenol or 0.09% xylene by concentration).

6.7 ACTION LEVELS

Should action levels be reached, work operations shall cease until further evaluation is performed and safe levels are prevalent. If through engineering controls and monitoring, safe levels (below action levels) cannot be achieved, an upgrade in PPE shall be mandated by the SSO, or operations shall cease in that portion of the Site. The PM will be notified of any changes in PPE. All PPE level changes must be authorized by PM.

7.0 HAZARD COMMUNICATION

In compliance with 29 CFR 1910.1200, hazardous materials brought on site by personnel (CHA or other onsite contractors) shall be accompanied with the material's Safety Data Sheet (SDS). The

SSO shall be responsible for maintaining the SDSs on site, reviewing them for hazards that working personnel may be exposed to, and evaluating their use on site with respect to compatibility with other materials including PPE, and their hazards. Should the SSO deem the material too hazardous for use on the subject site, the party responsible for bringing the material on site will be required to remove it from the Site.

8.0 CONFINED SPACE

During this project CHA personnel will not be permitted to enter a confined space. If a confined space entry becomes necessary, the PM will be notified, this HASP will be revised to outline confined space entry procedures, techniques, and equipment consistent with OSHA regulations 29 CFR part 1926, subpart AA—Confined Spaces in Construction as set forth in 29 CFR 1926.1201. Additionally, entrants and attendants will be trained in Confined Space Entry Authorized User training consistent with the applicable regulation.

9.0 PERSONAL PROTECTIVE EQUIPMENT

Level A and Level B PPE are not expected to be needed. If Site conditions change and contamination is present at levels above the action level, the PM will be notified and this HASP will be updated to reflect greater protection of personnel. The following is a list of required PPE.

Task/Operation	Level of PPE	Equipment
General site observation within the Contamination Reduction Zone and Exclusion Zone • No free product visible • Breathing Zone PID Readings < 5 ppm with the 10.6 eV bulb • <50 mg/m^3 dust • No odors present	D	• Long pants (no shorts) • Hard hat • Safety glasses • Reflective vests or yellow Hi-Visibility shirt • Work boots with safety toe • Hearing protection (where required) • Gloves (as appropriate)
Site Observation or Screening/Sampling Activities within the Contamination Reduction Zone and the Exclusion Zone • No free product visible • Sustained Breathing Zone PID	C	• Same as D, plus • Full-faced air purifying respirator (APR) with dual particulate-organic/acid vapor cartridges • Protective coveralls (e.g. Tyvek)

Task/Operation	Level of PPE	Equipment
Readings > 5 ppm with the 10.6 eV bulb • >50 mg/m³ dust • Odors noted		• Protective outer boot covers • Outer gloves with disposable nitrile or latex inner gloves • Inner polyethylene boot covers with outer latex boot covers • Both inner and outer gloves must be chemically resistant

10.0 DECONTAMINATION

Personnel working in the Exclusion Zone (within 25 feet of Site activities) will be required to enter and exit the work area through the Contamination Reduction Zone. Personnel engaged in decontamination will wear protective equipment including appropriate disposable clothing and respiratory protection and will also undergo decontamination procedures prior to leaving the decontamination area. The decontamination area will be located within the Contamination Reduction Zone and placed upwind of the Exclusion Zone, and may change locations based on the wind direction that day.

The following equipment is needed for decontamination:

- Alconox®
- Water
- Impermeable Containers

The following list summarizes typical decontamination steps for personnel exiting the Exclusion Zone. Additional steps may be warranted based upon specific site conditions.

Level D

- Decontaminate equipment within the decontamination area, as needed.
- Discard disposable garments.
- Wash/rinse boots.
- Containerize wash and decontamination water for disposal, as necessary.

Level C

- Decontaminate equipment within the decontamination area, as needed.
- Wash/rinse outer boot cover and gloves.
- Remove tape.
- Remove boot cover.
- Remove outer gloves.
- Deposit disposables in container for proper disposal.
- Remove suit and dispose of in proper container.
- Wash/rinse Inner glove
- Remove air purifying respirator.
- Remove inner gloves.
- Containerize wash and decontamination water for disposal, as necessary.

Level B

- Will not be used at this time.
- If Level B is deemed necessary, this HASP must be updated prior to authorization to continue work.

Level A

- Will not be used at this time.
- If Level A is deemed necessary, this HASP must be updated prior to authorization to continue work.

PPE will be decontaminated with soap (i.e. Alconox®) and water. Disposable items will be disposed of in dry, impermeable containers.

Equipment and vehicles used in the Exclusion Zone to handle contaminated materials will undergo decontamination procedures in the Contamination Reduction Zone prior to leaving the Site. The SSO will document in the daily field log each piece of equipment that has been decontaminated

prior to removal from the Site. The decontamination procedures will include, but are not limited to:

- Movement of equipment to the decontamination pad;
- Removal of heavily caked material with brushes or shovels; and
- Triple-rinsing with high pressure water or steam.

Small Equipment:

For soil sampling, dedicated sampling equipment is preferred. However, if non-dedicated equipment is used (i.e. stainless-steel soil sampling equipment), the required decontamination procedure for non-dedicated equipment is:

- Disassemble equipment, as required.
- Remove gross contamination from the equipment by brushing and then rinsing with tap water.
- Wash and scrub with low phosphate detergent (e.g. Alconox®).
- Tap water rinse.
- Distilled water rinse.
- Air dry.

Decontaminated equipment shall be placed on polyethylene sheeting or aluminum foil in order to avoid contacting a contaminated surface prior to use. Field personnel will use a new pair of outer gloves before handling sample equipment after it is cleaned. During periods of transportation and non-use, decontaminated sampling equipment shall be wrapped in aluminum foil or placed in a new/clean plastic bag

Large Equipment:

CHA personnel are not responsible for the decontamination of large equipment. Information for large equipment decontamination is provided by the site contractor. Decontamination of heavy construction equipment will be performed by the contractor under the contractor's site-specific HASP.

11.0 EMERGENCY PROCEDURES

911 service is available and confirmed at this location. Call 911 immediately for emergency response. Only if the 911 is unavailable or has a long lead time should someone be driven to the nearest medical facility.

On-site emergencies can range in intensity from minor to serious conditions. Various procedures for responding to site emergencies are listed in this section. The designated SSO is responsible for contacting the CHA Project Manager who will notify the client as appropriate in emergency situations (however, others must assume responsibility if the situation warrants). An injured person shall be accompanied by another worker at all times.

Should an on-site emergency occur at the project Site (related to the project or otherwise) the following procedures shall be followed:

- Call 911 for additional emergency response.
- If the emergency occurs and is project specific, notify your assigned HSC after emergency care is provided to activate the appropriate actions.
- Properly trained personnel will determine if the emergency can be contained or remediated and initiate the appropriate action(s). Personnel shall not respond beyond their level of training.
- Employees are not to risk their health or life in taking aggressive action(s) to fight fire or stop releases. Only defensive actions shall occur until an action plan is resolved.
- Choose an exit route that provides fast, and safe, egress from the work area. The route taken should always be away from obvious obstructions or other hazardous conditions. Consult an evacuation map if you are unsure of where the nearest exit route is located.
- Do not delay evacuation to retrieve personal items or equipment.
- Persons shall exit areas in groups and attempt to stay together during evacuation procedures.
- While evacuating, notice any conditions which should be reported to emergency personnel. Be alert for the location of smoke, fire and/or vapors. Report any of these conditions to emergency personnel.
- Be aware of emergency response vehicles and avoid interference with these.

Remain calm, keep voices low and wait for instructions from the Incident Commander. Do not leave the scene prior to notifying your assigned Project Manager and Field Team Leader. An incident report form is included in Appendix E.

12.0 EMERGENCY MEDICAL CARE

In general, if emergency care is needed, personnel will call 911**.** However, if necessary, transport injured personnel to the nearest hospital using the following directions (map available in Figure 1):

Address: Crouse Hospital
736 Irving Ave
Syracuse, NY 13210

Emergency Room Telephone Number: (315) 470-7111

Directions from site:

1. Head north on Cortland Ave toward S. Salina St.
2. Use any lane to turn left onto S. Salina St.
3. Turn right onto S. Warren St.
4. Turn right at the 1st cross street onto E. Adams St.
5. Turn right onto Irving Ave
6. Your destination is on the right.

12.1 EMERGENCY NOTIFICAITON NUMBERS

Emergency Medical: 911
Fire Dept.: 911
Police Dept.: 911
Department of Emergency Services: 911
Poison Control: (800) 222-1222
CHA Project Manager: Samantha Miller, (315) 257-7154 (Office), (915) 329-9898 (Cell)
CHA Corporate Director of Health and Safety: Ronald Rogers, (518) 453-3917 (Office), (518) 810-8926 (Cell)

12.2 ON-SITE FIRST AID

First aid kits will be available in the Support Zone (e.g. vehicles). General first aid procedures include:

Skin/Eye Contact: Flush eyes and/or skin thoroughly with water for 15 minutes with tepid water. Remove contaminated clothing. If skin was contacted with a dry material, brush it off first, then flush with water. Seek medical attention if irritation develops.

Ingestion: Do not induce vomiting. Call Poison Control Center. Tell them what was swallowed, if possible. Follow instructions. Have SDS available for reference.

Inhalation: Remove person from contaminated environment without risking your own safety. DO NOT ENTER A CONFINED SPACE. DO NOT ENTER EXCLUSION ZONE UNLESS WEARING ONE LEVEL HIGHER PROTECTION THAN VICTIM WAS WEARING.

Administer cardiopulmonary resuscitation (CPR) if victim does not have a pulse and if you are currently certified in CPR.

Injuries: Do not move a victim who may have a back injury. Cover them with coats, blankets, or other appropriate items to keep them warm. Personnel will immediately dial emergency services (i.e. 911).

Use universal precautions such as barrier gloves and shields. Apply pressure to bleeding wounds. If the victim is able, have the victim apply pressure to the wound. If they are not able, wear gloves to protect from exposure to blood. Put gauze bandages or other clean cloth over the wound. Do not remove blood-soaked bandages or cloth - instead put additional bandages or cloths over the blood-soaked bandages. Elevate the limb with the injury above the heart.

Administer CPR if victim does not have a pulse and if you are currently certified in CPR. Have someone call for an ambulance immediately if there is any possibility that the victim is having or had a heart attack.

Shock is likely to develop in any serious injury or illness. The following are signals of shock: restlessness or irritability; altered consciousness; pale, cool, moist skin; rapid breathing; and/or rapid pulse. In the event of shock, do the following: Immediately have someone call for an ambulance; have the victim lie down; elevate legs 12 inches unless you suspect head, neck, or back

injuries; if victim is cool, cover the victim to prevent chilling; do not give the victim anything to drink, even if thirsty. Note time symptoms began and report to emergency responders.

13.0 CERTIFICATIONS

All site personnel covered by this HASP have read the HASP and are familiar with its contents and provisions.

Name	Title	Date

14.0 STANDARD OPERATING PROCEDURES

Applicable CHA Standard Operating Procedures (SOPs) are included in Appendix F of the RD Report. Appended to this HASP are CHA JHAs and OSHA Quick Cards in Appendix B, information regarding the COVID-19 global pandemic in Appendix D, the procedures and paperwork for incident reporting in Appendix E, and respiratory protection plan and respirator inspection checklist in Appendix F.

15.0 JOB HAZARD ANALYSIS

- ☐ Airport Safety
- ☐ Asbestos Abatement
- ☐ ATV-4 Wheeler
- ☐ Bridge Inspection

X Cold Stress/Winter Weather

- ☐ Confined Space
- ☐ Dogs
- ☐ Electrical Safety

X Environmental Sampling-Outdoor Hazards

X Excavation

- ☐ Exposure to Electrical Transmission Lines
- ☐ Hand-Power Tools

X Heat Stress

X Heavy Equipment

- ☐ Pressurized Cans
- ☐ Rail Safety

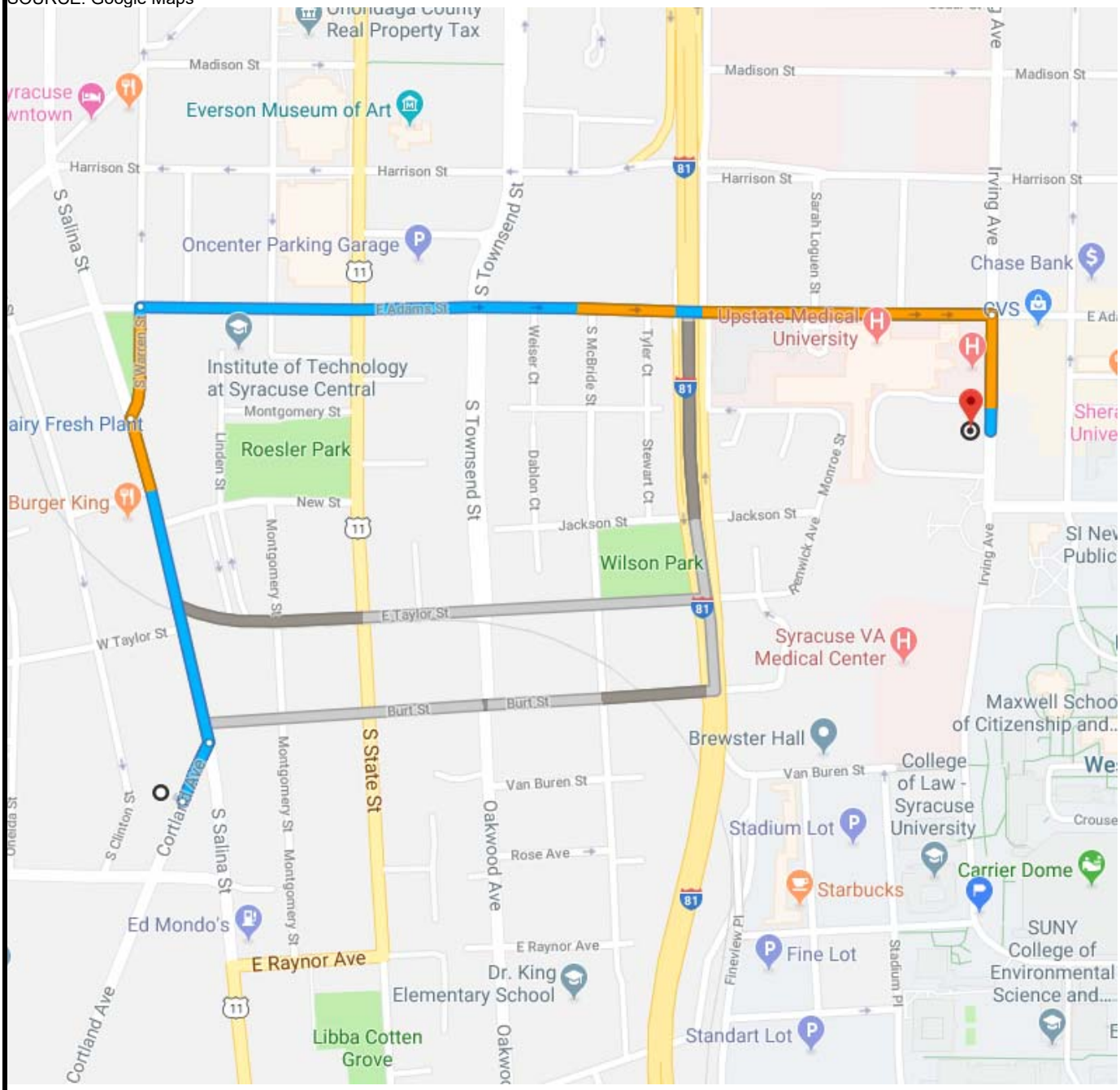
X Slips, Trips, Falls

X Working In-Around Traffic

- ☐ Working Over Water
- ☐ Working With Ladders

FIGURES

SOURCE: Google Maps



140 Cortland Ave
Syracuse, NY 13202

1. Head north on Cortland Ave toward S. Salina St.
2. Turn left onto S. Salina St.
3. Slight right onto S. Warren St.
4. Turn right onto E. Adams St.
5. Turn right onto Irving Ave

Crouse Hospital
Syracuse, NY 13210

CHA ©2020
300 South State Street Suite 600, Syracuse, NY 13202
www.chacompanies.com

NOT TO SCALE | DATE: June 2020

FIGURE 1
DIRECTIONS TO NEAREST HOSPITAL
Former Coyne Textile Facility
City of Syracuse, New York
Onondaga County, New York

APPENDIX A

Daily Jobsite Safety Brief

CHA

DAILY JOBSITE SAFETY BRIEF

PROJECT INFORMATION			
Project Name:		**CHA Project No.**	
Project Start Date:	**Completion Date:**	**Weather:**	
Project Location:		**Project Task:** *Complete a Site Health & Safety Plan per Task*	
Description of Work: *Be Specific:*			
Key Personnel: *Responsibilities:*	*Project Manager*	*Field Team Leader*	*Site Safety Officer*
Description of Hazards:			

The Daily Jobsite Safety Brief must be completed before work begins daily or Scope of Work changes

Weather: ____________________

All staff have reviewed and signed site and safety plan	☐Yes ☐No	All staff have proper PPE	☐Yes ☐No
Hazards and precautions have been discussed	☐Yes ☐No	Safety Controls in place	☐Yes ☐No

Additional Notes/Comments: ____________________

Signed: ____________________ **Date/Time:** ____________________

Signed: ____________________ **Date/Time:** ____________________

Signed: ____________________ **Date/Time:** ____________________

Weather: ____________________

All staff have reviewed and signed site and safety plan	☐Yes ☐No	All staff have proper PPE	☐Yes ☐No
Hazards and precautions have been discussed	☐Yes ☐No	Safety Controls in place	☐Yes ☐No

Additional Notes/Comments: ____________________

Signed: ____________________ **Date/Time:** ____________________

Signed: ____________________ **Date/Time:** ____________________

Signed: ____________________ **Date/Time:** ____________________

Weather: ____________________

All staff have reviewed and signed site and safety plan	☐Yes ☐No	All staff have proper PPE	☐Yes ☐No
Hazards and precautions have been discussed	☐Yes ☐No	Safety Controls in place	☐Yes ☐No

Additional Notes/Comments: ____________________

Signed: ____________________ **Date/Time:** ____________________

Signed: ____________________ **Date/Time:** ____________________

Signed: ____________________ **Date/Time:** ____________________

APPENDIX B

Job Hazard Analysis

CHA Consulting, Inc.

Job Hazard Analysis

Excavations

Task	Hazard Type and Description	Hazard Control
Noise exposure	Hearing loss & psychological stress	Utilize muffler systems and other engineering controls with increasing working distance. Wear approved safety ear plugs when working close enough to heavy equipment/backhoe
Drilling	Inhalation hazards from dust and dirt. Struck-by and caught between.	Wear appropriate PPE to protect from dust such as a fit- tested half-face air purifying respirator with appropriate dust cartridges. The respirator should be worn whenever field instruments indicate the need, or when wind-blown dust is obvious in combination with detected contaminates Stay alert and maintain safe distance from operating parts.
General excavation activity	Contact of dirt or dust after work activities on one's skin	Wear coveralls or tyvek suits to protect clothing, boots, hair, and skin. Remove work clothes including boots before entering environments outside of the work site
Being near moving parts of machinery	Physical injury from moving parts Struck-by and caught between	Avoid moving parts of machinery. Keep finger, hand and arms away from backhoe bucket and other pinch points. Wear leather gloves when using hands for activities other than sampling, and steel-toed boots. Wear hard hat at all times
Working in the vicinity of heavy machinery	Struck-by and caught between	Personnel on the ground should keep away from the work area and backhoe unless they are required for the task. Ask for assistance when

		carrying or moving heavy loads. Use legs to lift. Do not carry heavy equipment without first establishing eye contact with the operator. Use standard hand signals when noise levels inhibit auditory communication. Ensure that all heavy machinery have audible back-up signals. All workers must wear reflective traffic vests when appropriate. Barricade work area and permit only excavation personnel in the area
Working where there is site vehicle traffic	Struck-by and caught between	Restrict outside vehicular traffic on the job site. Use flaggers and a specific traffic route if necessary
Digging where there are unknown underground utilities and pipes	Striking underground utilities or other significant obstructions	Observe marked locations of underground utilities if marked. Excavate by hand when within five feet in any direction of known underground obstructions. Machine digging allowed within two feet after visual identification and de-energized. If utilities can be confirmed as abandoned, hand digging is not required. Use detection systems if applicable!
	Running into an electrical duct bank	Hand digging required to visually establish location. Machine digging per competent person evaluation and JSA/STA
	Potential for fires, spills, damaged underground utilities, high noise	Utilize a qualified spotter probe bar, appropriate PPE (hard hat, safety glasses, steel toed boots, Nomex coveralls, ear plugs and gloves as necessary)
	Slips, trips and falls walking in general vicinity of planned excavation	Review general terrain and evaluate surface conditions. Look for ruts, large rocks, and uneven terrain
Scanning with electronic	Trips and falls, strain from	Have an assistant help spot various

equipment	lifting heavy instruments	hazards in area if focusing on instrument is too distracting. If lifting or pushing scanning instruments of heavier weights, get assistance with movements to avoid strains
Probing with metal tipped fiberglass rods	Slips, trips, and falls walking in general area of intended excavation Back strains, hand injury from probing rod	Review overall terrain and identify surface conditions. Look for ruts, large rocks, and uneven terrain Avoid excessive force attempting to penetrate deeper with rods. Wear leather gloves to avoid blisters and other hand injuries
Working in the Ditch	Potential for cave-in, atmospheric hazards, struck0by/caught-between. Ladder safety Water accumulation	Have a competent person evaluate the excavations. Excavations over 5 feet deep shall properly protected from cave-ins (protective systems – sloped, benched, shoring, A competent person shall oversee all excavation safety issues and properly assess working conditions. shielding). Utilize a 4 way calibrated monitor at all times while employees are in the ditch. Only one person act as signalman, but anyone can call emergency stop. The spoil pile shall be located at least two feet from the edge of the trench if not as far away as possible and slope the pile away from the excavation Ladders used for access must be tied off and extend 3' over landing. When ascending/descending employee must face ladder and maintain three (3) points of contact. Angle ladder at a ¼ of working length (75degrees) for safe climbing. The competent person shall inspect the installation of the protective

		barrier and the conditions of trenching before it is entered and daily before every shift thereafter, or after a rain storm. Thus, the competent person shall also monitor the water level, and determine when safe limits have been exceeded. Any accumulation of water in the trench shall be kept at a minimum by portable pumps
Working near the ditch	Falling into eight foot deep trench	At a minimum, barricades shall be erected six feet away from the edge of the trench. Such barricades must be made visible by using high visibility methods when left unattended. Anyone within a six feet boundary must be protected from falls utilizing fall protection (i.e. railing or fall restrain by tethering workers). Provide a walkway or bridge with standard guardrails if employee must cross over the excavation
Equipment Damage	Excavations left open and unattended near roadways & walkways, equipment roll over hazard, high noise, airborne dust	Confirm location of all power lines. If lines are unable to shut-in maintain a minimum of ten feet clearance from equipment. Verify and increase distance (per approach charts) for lines in excess of 50,000 volts. Maintain spotter with no other duties than watching for interference, if power lines are within swing radius. Inform local operations and any remote operation of activities. Do not use cell phones while operating equipment. Tape and/or barricade unattended excavations.
Working outside	Bad weather (rain, cold/heat, etc..)	If rain and/or lightning starts, stop all activities and allow competent person to advise further regarding safety practices and procedures.
Excavator with grapple attachment	Employees working near building(s) can potentially have a crushing injury and atmospheric hazard. Striking	Keep personnel at a safe distance from the equipment. Monitor atmospheric conditions. Make eye contact with the operator before

	a person within radius of boom	approaching equipment. Only one person is to act as signalman; however, anyone can call emergency stop

CHA Consulting, Inc.

Job Hazard Analysis

Heavy Equipment

Task	Hazard Type and Description	Hazard Control
Heavy equipment	Pinch points Struck-by/Caught between	Never work or walk under loads, and only one person is to act as the signal person. Avoid working near swing radius's. Maintain eye contact with operators when approaching equipment. Rigger s and Operators must possess additional safety training for competency. (Competent/Qualified Training)
Road grading and material cleanup	Potential for personnel to be run over with equipment Struck-by/Caught between	Ensure equipment is operated by qualified operator, and all personnel working on or near roadway wear reflective vests. Be sure that equipment back-up alarms are working properly. Always make eye contact with equipment operators prior to approaching
Personnel working near heavy equipment	Slips and falls Struck-by/Caught between	Make sure there is a good working surface. Cover or barricade excavations as soon as practical. Wear a hard hat, safety glasses, ear plugs, a Class II ANSI safety vest as well as steel toed boots when necessary
Operation	Strains and sprains	Think about your body position; avoid over- reaching, hyper-extending, location/ position of extremities, and think if you are in the best position for leverage

CHA Consulting, Inc.

Job Hazard Analysis

Working in/Around Traffic

Task	Hazard Type and Description	Hazard Control
Workers working in/around traffic	Workers getting hit by oncoming traffic because they are not visible to drivers	Wear the appropriate PPE including an **ANSI/Class II** high visibility safety apparel. Employers should make sure their employees are provided with the proper performance class
Workers working with contractors	Contractor workers could be unfamiliar with specific traffic control requirements (spacing requirements, number of traffic control devices required, training of flaggers, etc.) A vehicular or personnel accident could result from this	Ensure those involved with traffic control are familiar with MUTCD (manual of uniform traffic control devices) requirements
Utilizing flagmen to control traffic	Flagmen not trained/ qualified	Flagmen for traffic control must be trained in proper flagging requirements
Making sure the contractor has control over the flow of traffic	Traffic not cooperative in slowing down or driving recklessly	Contact local police department for assistance in patrolling area more frequently, strategic placement of traffic control devices to make drivers feel as if they need to slow down (i.e. creating a narrower approach or path, devices that look like law enforcement, etc.)
Working on the traffic side of trucks	Being struck by an oncoming vehicle	Set up job so all work is done on the ditch side of trucks
Utilizing traffic control devices for controlling traffic	Inadequate traffic control for advance warning of work zone	Ensure traffic control devices meet MUTCD (Manual of Uniform Traffic Control Devices)

		requirements. Use arrow boards. Use the site plan to review traffic details
Working around very heavy traffic	Being struck by traffic	Plan work for low traffic hours if possible. Shut down lanes of traffic if possible
Operating a vehicle in a construction/ heavy traffic area	Striking or being struck by others	Use a spotter when visibility is limited
Setting up equipment near traffic	Backing into workers, vehicles, ditches, oncoming traffic, other property damage	Have someone watch when you back up
Entering/Exiting the job site	Being hit by oncoming traffic	As you are entering site, continue in the direction of traffic, slow down, use flashers or beacon lights well in advance, and pull completely on shoulder, etc. Park vehicles as to not interrupt traffic. Exit vehicle on non-traffic side. If performing data collection and need to continue movement in vehicle, continue to use flashers if not completely stopping. Use beacon lights on larger vehicles. Be sure they are not blocked by equipment (ladders, trailers, etc.). Exit safely by considering all traffic. Use a spotter when backing out if at all possible. Check that all equipment (ladders, trailers) is secure.
Crossing highway on foot, making visual observations, taking photos, taking measurements	Noise Traffic	Use proper warning signage/cones, work facing traffic, frequently observe traffic, plan escape route ahead of time, keep a firm grasp of equipment

CHA Consulting, Inc.

Job Hazard Analysis

Slips/Trips/Falls

Common hazards

- Slippery surfaces (e.g., wet, oily or greasy)
- Seasonal trip hazards (snow and ice)
- Spills of wet or dry substances
- Changes in walkway levels and slopes
- Unsecured mats
- Poor lighting
- Debris and items stored in walkways
- Trailing cables in pedestrian walkways
- Smoke, steam or dust obscuring view
- Unsuitable footwear

Controlling hazards

When establishing safe work practices, consider:

- Characteristics of physical work area
- Weather conditions (snow, ice, rain)
- Tasks performed
- Workers' work practices
- Equipment

Hazard Control/Engineering Controls

- Type of flooring
- Slope of surface (ramps, handrails)
- Surface free of obstructions/holes
- Drainage
- Lighting levels, non-glare, contrast
- Equipment to be used/not carrying too much at once
- Signage
- Sufficient space
- Minimizing environmental influences, e.g., blocking wind to prevent wet surfaces icing at entrances

Hazard Control/Administrative Controls

- Training workers/awareness
- Safe practices such as a procedure for cleaning spills or requirement for two workers to transport a large equipment that one worker cannot see around or can’t handle
- Reporting hazards
- Prompt maintenance
- Job design (identifying tasks requiring excessive pushing/pulling, line-of-sight obstruction)
- Equipment readily available
- Addressing poor work practices
- Inspections
- Review slips, trips and same-level fall hazards

Hazard Control/Housekeeping

- Clean spills
- Remove debris, snow and ice
- Keep equipment clean
- Keep wires, etc. controlled, taped, etc.

Hazard Control/Personal Protective Equipment

- Appropriate footwear for task, which may include appropriate heels, soles and anti-slip boots

OSHA® QUICK CARD™

Electrical Safety

Electrical hazards can cause burns, shocks and electrocution (death).

- Assume that all overhead wires are energized at deadly voltages. Never assume that a wire is safe to touch even if it is down or appears to be insulated.
- Never touch a fallen overhead power line. Call the electric utility company to report fallen electrical lines.
- Stay at least 10 feet (3 meters) away from overhead wires during cleanup and other activities. If working at heights or handling long objects, survey the area before starting work for the presence of overhead wires.
- If an overhead wire falls across your vehicle while you are driving, stay inside the vehicle and continue to drive away from the line. If the engine stalls, do not leave your vehicle. Warn people not to touch the vehicle or the wire. Call or ask someone to call the local electric utility company and emergency services.
- Never operate electrical equipment while you are standing in water.
- Never repair electrical cords or equipment unless qualified and authorized.
- Have a qualified electrician inspect electrical equipment that has gotten wet before energizing it.
- If working in damp locations, inspect electric cords and equipment to ensure that they are in good condition and free of defects, and use a ground-fault circuit interrupter (GFCI).
- Always use caution when working near electricity.

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA 3294-04R-13

OSHA® DATOS RÁPIDOS

Seguridad eléctrica

Los riesgos eléctricos pueden causar quemaduras, choques eléctricos y electrocución (muerte).

- Sepa que probablemente todos los cables aéreos están energizados (vivos) a voltajes fatales. Nunca asuma que se puede tocar un cable de manera segura aún si está fuera de servicio o parece que está aislado.
- Nunca toque una línea de energía eléctrica que se haya caído. Llame a la compañía de servicio eléctrico para reportar líneas eléctricas caídas.
- Manténgase al menos 10 pies (3 metros) alejado de los cables aéreos durante limpiezas y otras actividades. Si está trabajando desde alturas o manejando objetos largos, antes de comenzar a trabajar evalúe el área para detectar la presencia de cables aéreos.
- Si un cable aéreo cae sobre su vehículo cuando esté guiando, manténgase dentro del vehículo y continúe guiando, alejándose del cable. Si el motor de su vehículo se detiene, no salga del vehículo. Adviértale a las personas que no toquen el vehículo o el cable. Llame, o pídale a alguien que llame, a la compañía local de servicio eléctrico y a servicios de emergencia.
- Nunca opere equipos eléctricos mientras esté parado sobre agua.
- Nunca repare cables o equipo eléctrico a menos que esté calificado y autorizado.
- Antes de energizar el equipo eléctrico que se ha mojado, haga que un electricista calificado lo inspeccione.
- Si está trabajando en áreas húmedas, inspeccione los cables y equipo eléctrico para asegurarse que estén en buenas condiciones y sin defectos, y use un interruptor de circuito con pérdida a tierra (GFCI, por sus siglas en inglés).
- Siempre tenga cuidado cuando esté trabajando cerca de electricidad.

Para más información:

OSHA® **Administración de Seguridad y Salud Ocupacional**

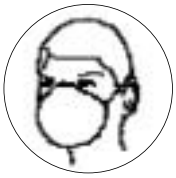
Departamento de Trabajo de los EE. UU.

www.osha.gov (800) 321-OSHA (6742)

OSHA QUICK CARD™

Protect Yourself
Respirators

Respiratory protection must be worn whenever you are working in a hazardous atmosphere. The appropriate respirator will depend on the contaminant(s) to which you are exposed and the protection factor (PF) required. Required respirators must be NIOSH-approved and medical evaluation and training must be provided before use.

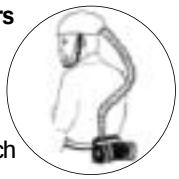


Single-strap dust masks are usually not NIOSH-approved. They must not be used to protect from hazardous atmospheres. However, they may be useful in providing comfort from pollen or other allergens.

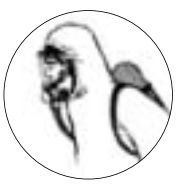
Approved filtering facepieces (dust masks) can be used for dust, mists, welding fumes, etc. They do not provide protection from gases or vapors. DO NOT USE FOR ASBESTOS OR LEAD; instead, select from the respirators below.

Half-face respirators can be used for protection against most vapors, acid gases, dust or welding fumes. Cartridges/filters must match contaminant(s) and be changed periodically.

Full-face respirators are more protective than half-face respirators. They can also be used for protection against most vapors, acid gases, dust or welding fumes. The face-shield protects face and eyes from irritants and contaminants. Cartridges/filters must match contaminant(s) and be changed periodically.



Loose-fitting powered-air-purifying respirators (PAPR) offer breathing comfort from a battery-powered fan which pulls air through filters and circulates air throughout helmet/hood. They can be worn by most workers who have beards. Cartridges/filters must match contaminant(s) and be changed periodically.



A Self-Contained Breathing Apparatus (SCBA) is used for entry and escape from atmospheres that are considered immediately dangerous to life and health (IDLH) or oxygen deficient. They use their own air tank.

For more complete information:

OSHA Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA

OSHA 3280-10N-05

OSHA® QUICK CARD™

Protecting Workers from Heat Stress

Heat Illness

Exposure to heat can cause illness and death. The most serious heat illness is heat stroke. Other heat illnesses, such as heat exhaustion, heat cramps and heat rash, should also be avoided.

There are precautions your employer should take any time temperatures are high and the job involves physical work.

Risk Factors for Heat Illness

- High temperature and humidity, direct sun exposure, no breeze or wind
- Low liquid intake
- Heavy physical labor
- Waterproof clothing
- No recent exposure to hot workplaces

Symptoms of Heat Exhaustion

- Headache, dizziness, or fainting
- Weakness and wet skin
- Irritability or confusion
- Thirst, nausea, or vomiting

Symptoms of Heat Stroke

- May be confused, unable to think clearly, pass out, collapse, or have seizures (fits)
- May stop sweating

To Prevent Heat Illness, Your Employer Should

- Establish a complete heat illness prevention program.
- Provide training about the hazards leading to heat stress and how to prevent them.
- Provide a lot of cool water to workers close to the work area. At least one pint of water per hour is needed.

U.S. Department of Labor

For more information:

OSHA® Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

OSHA 3154-06R 2014

OSHA® QUICK CARD™

- Modify work schedules and arrange frequent rest periods with water breaks in shaded or air-conditioned areas.
- Gradually increase workloads and allow more frequent breaks for workers new to the heat or those that have been away from work to adapt to working in the heat (acclimatization).
- Routinely check workers who are at risk of heat stress due to protective clothing and high temperature.
- Consider protective clothing that provides cooling.

How You Can Protect Yourself and Others

- Know signs/symptoms of heat illnesses; monitor yourself; use a buddy system.
- Block out direct sun and other heat sources.
- Drink plenty of fluids. Drink often and BEFORE you are thirsty. Drink water every 15 minutes.
- Avoid beverages containing alcohol or caffeine.
- Wear lightweight, light colored, loose-fitting clothes.

What to Do When a Worker is Ill from the Heat

- Call a supervisor for help. If the supervisor is not available, call 911.
- Have someone stay with the worker until help arrives.
- Move the worker to a cooler/shaded area.
- Remove outer clothing.
- Fan and mist the worker with water; apply ice (ice bags or ice towels).
- Provide cool drinking water, if able to drink.

IF THE WORKER IS NOT ALERT or seems confused, this may be a heat stroke. CALL 911 IMMEDIATELY and apply ice as soon as possible.

If you have any questions or concerns, call OSHA at 1-800-321-OSHA (6742).

U.S. Department of Labor

For more information:

OSHA® Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

OSHA® QUICK CARD™

Protecting Workers from Cold Stress

Cold temperatures and increased wind speed (wind chill) cause heat to leave the body more quickly, putting workers at risk of cold stress. Anyone working in the cold may be at risk, e.g., workers in freezers, outdoor agriculture and construction.

Common Types of Cold Stress

Hypothermia

- Normal body temperature (98.6°F) drops to 95°F or less.
- **Mild Symptoms:** alert but shivering.
- **Moderate to Severe Symptoms:** shivering stops; confusion; slurred speech; heart rate/breathing slow; loss of consciousness; death.

Frostbite

- Body tissues freeze, e.g., hands and feet. Can occur at temperatures above freezing, due to wind chill. May result in amputation.
- **Symptoms**: numbness, reddened skin develops gray/white patches, feels firm/hard, and may blister.

Trench Foot (also known as Immersion Foot)

- Non-freezing injury to the foot, caused by lengthy exposure to wet and cold environment. Can occur at air temperature as high as 60°F, if feet are constantly wet.
- **Symptoms**: redness, swelling, numbness, and blisters.

Risk Factors

- Dressing improperly, wet clothing/skin, and exhaustion.

For Prevention, Your Employer Should:

- Train you on cold stress hazards and prevention.
- Provide engineering controls, e.g., radiant heaters.
- Gradually introduce workers to the cold; monitor workers; schedule breaks in warm areas.

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA 3156-02R 2014

OSHA® QUICK CARD™

How to Protect Yourself and Others

- Know the symptoms; monitor yourself and co-workers.
- Drink warm, sweetened fluids (no alcohol).
- Dress properly:
  - Layers of loose-fitting, insulating clothes
  - Insulated jacket, gloves, and a hat (waterproof, if necessary)
  - Insulated and waterproof boots

What to Do When a Worker Suffers from Cold Stress

For Hypothermia:

- Call 911 immediately in an emergency.
- To prevent further heat loss:
  - Move the worker to a warm place.
  - Change to dry clothes.
  - Cover the body (including the head and neck) with blankets, and with something to block the cold (e.g., tarp, garbage bag). Do **not** cover the face.
- If medical help is more than 30 minutes away:
  - Give warm, sweetened drinks if alert (no alcohol).
  - Apply heat packs to the armpits, sides of chest, neck, and groin. Call 911 for additional rewarming instructions.

For Frostbite:

- Follow the recommendations "**For Hypothermia**".
- Do not rub the frostbitten area.
- Avoid walking on frostbitten feet.
- Do not apply snow/water. Do not break blisters.
- Loosely cover and protect the area from contact.
- Do not try to rewarm the area unless directed by medical personnel.

For Trench (Immersion) Foot:

- Remove wet shoes/socks; air dry (in warm area); keep affected feet elevated and avoid walking. Get medical attention.

For more information:

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor

www.osha.gov (800) 321-OSHA (6742)

OSHA® FactSheet

Trenching and Excavation Safety

Two workers are killed every month in trench collapses. The employer must provide a workplace free of recognized hazards that may cause serious injury or death. The employer must comply with the trenching and excavation requirements of 29 CFR 1926.651 and 1926.652 or comparable OSHA-approved state plan requirements.

An excavation is any man-made cut, cavity, trench, or depression in an earth surface formed by earth removal.

Trench (Trench excavation) means a narrow excavation (in relation to its length) made below the surface of the ground. In general, the depth is greater than the width, but the width of a trench (measured at the bottom) is not greater than 15 feet (4.6 meters).

Dangers of Trenching and Excavation

Cave-ins pose the greatest risk and are much more likely than other excavation-related accidents to result in worker fatalities. Other potential hazards include falls, falling loads, hazardous atmospheres, and incidents involving mobile equipment. One cubic yard of soil can weigh as much as a car. An unprotected trench is an early grave. Do not enter an unprotected trench.

Trench Safety Measures

Trenches 5 feet (1.5 meters) deep or greater require a protective system unless the excavation is made entirely in stable rock. If less than 5 feet deep, a competent person may determine that a protective system is not required.

Trenches 20 feet (6.1 meters) deep or greater require that the protective system be designed by a registered professional engineer or be based on tabulated data prepared and/or approved by a registered professional engineer in accordance with 1926.652(b) and (c).

Competent Person

OSHA standards require that employers inspect trenches daily and as conditions change by a competent person before worker entry to ensure elimination of excavation hazards. A competent person is an individual who is capable of identifying existing and predictable hazards or working conditions that are hazardous, unsanitary, or dangerous to workers, soil types and protective systems required, and who is authorized to take prompt corrective measures to eliminate these hazards and conditions.

Access and Egress

OSHA standards require safe access and egress to all excavations, including ladders, steps, ramps, or other safe means of exit for employees working in trench excavations 4 feet (1.22 meters) or deeper. These devices must be located within 25 feet (7.6 meters) of all workers.

General Trenching and Excavation Rules

- Keep heavy equipment away from trench edges.
- Identify other sources that might affect trench stability.
- Keep excavated soil (spoils) and other materials at least 2 feet (0.6 meters) from trench edges.
- Know where underground utilities are located before digging.
- Test for atmospheric hazards such as low oxygen, hazardous fumes and toxic gases when > 4 feet deep.
- Inspect trenches at the start of each shift.
- Inspect trenches following a rainstorm or other water intrusion.
- Do not work under suspended or raised loads and materials.
- Inspect trenches after any occurrence that could have changed conditions in the trench.
- Ensure that personnel wear high visibility or other suitable clothing when exposed to vehicular traffic.

Protective Systems

There are different types of protective systems.

Benching means a method of protecting workers from cave-ins by excavating the sides of an

excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels. *Benching cannot be done in Type C soil.*

Sloping involves cutting back the trench wall at an angle inclined away from the excavation.

Shoring requires installing aluminum hydraulic or other types of supports to prevent soil movement and cave-ins.

Shielding protects workers by using trench boxes or other types of supports to prevent soil cave-ins. Designing a protective system can be complex because you must consider many factors: soil classification, depth of cut, water content of soil, changes caused by weather or climate, surcharge loads (e.g., spoil, other materials to be used in the trench) and other operations in the vicinity.

Additional Information

Visit OSHA's Safety and Health Topics web page on trenching and excavation at
www.osha.gov/SLTC/trenchingexcavation/index.html
www.osha.gov/dcsp/statestandard.html

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

OSHA® Occupational Safety and Health Administration

U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)

DOC FS-3476 9/2011

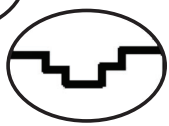
OSHA® QUICK CARD™

Working Safely in Trenches

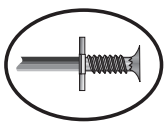
Two workers are killed every month in trench collapses. Each worker in a trench shall be protected from a cave-in by an adequate protective system. Some of the protective systems for trenches are:

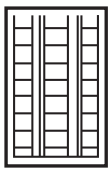
- Sloped for stability; or

- Cut to create stepped benched grades (Type A or B soil only); or

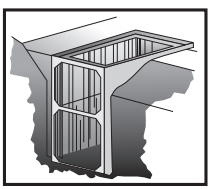


- Supported by a system made with materials such as posts, beams, shores or planking and hydraulic jacks; or

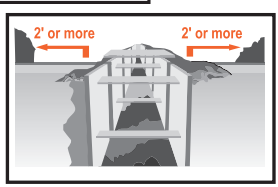




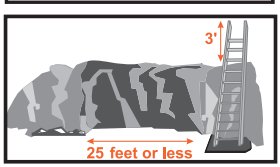
- Shielded by a trench box to protect workers in a trench.



Excavated or other materials and equipment must be at least 2 feet back from the edge of a trench; and



A safe way to exit must be provided within 25 feet of workers in a trench.



A competent person must inspect trenches daily and when conditions change. An unprotected trench is an early grave. Do not enter an unprotected trench.

For more information:

OSHA® Occupational Safety and Health Administration
U.S. Department of Labor
www.osha.gov (800) 321-OSHA (6742)
TTY (887) 889-5627

OSHA 3243-09R-11

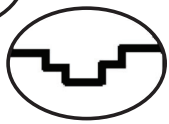
OSHA® DATOS RÁPIDOS

Trabajando de forma segura en zanjas

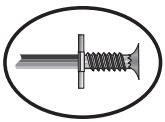
Dos trabajadores mueren cada mes en derrumbes de zanjas. Se utilizará un sistema adecuado para proteger a cada trabajador en una zanja de los derrumbes. Algunos de los sistemas de protección en zanjas son:

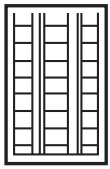
- Inclinación para lograr estabilidad, o

- Corte en forma de gradientes escalonados (sólo para el suelo del tipo A o B), o

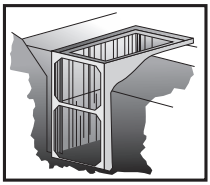


- Soporte por un sistema hecho con materiales como postes, vigas, puntales o entarimado y gatos hidráulicos, o





- Resguardo en una caja de trinchera para proteger a los trabajadores en la zanja.



Los materiales excavados o de otro tipo y los equipos deben estar por lo menos a 2 pies hacia atrás del borde de la zanja.

Se deberá ofrecer una vía segura de salida dentro de 25 pies de los trabajadores en una zanja.

Una persona competente debe inspeccionar las zanjas a diario y cuando las condiciones cambien. Una zanja sin protección es una tumba. No entre a una zanja que no está protegida.

Para más información:

OSHA® **Administración de Seguridad y Salud Ocupacional**
Departamento del Trabajo de EE.UU.
www.osha.gov (800) 321-OSHA (6742)

CHA Consulting, Inc.

Job Hazard Analysis

Electrical Safety

Task	Hazard Type and Description	Hazard Control
Working around electrical power poles	Potential for electric shock	Electrical installations and maintenance shall only be performed by certified electricians
Working around conduits	Potential for serious burns or injury	Lockout and tagout electrical equipment prior to exposing personnel
Working around electrical panels		All electrical equipment shall have ground fault circuit interrupters (GFCI) or assured equipment grounding. Avoid lifting long dimensional conductors (ducts or pipes) over or around lie electrical. All extension cords shall be free of frays. All receptacles must be mounted and secure prior to use. Panel boxes must be covered to prevent accidental contact with life parts. Portable ladders used for electrical work must have non-conductive side rails. Conductive items of jewelry or clothing shall not be worn unless they are rendered non-conductive by covering, wrapping or other insulating means

CHA Consulting, Inc.

Job Hazard Analysis

Environmental Sampling/Outdoor Hazards

Task	Hazard Type and Description	Hazard Control
Working in hot environments	Heat disorders including heat cramps, heat exhaustion, and heat stroke	Employers can control this hazard by providing heat stress training to exposed employees, providing access to shade, and allowing employees to gradually get used to hot environments. Employees working in hot environments are advised to take breaks in cool rest areas, rotate physically demanding tasks, save most demanding work for cooler times of day, and utilize the heat index chart to determine exposure risk. Be sure that every employee working in the hot environments is drinking one cup of water ever fifteen minutes. Recognize the signs such as above normal body temperature, headaches, nausea, cramping, fainting, increased heart rate, and pale as well as clammy skin
	Sunburn	The risk of sunburn is higher when working at high elevations, or when working around water (from reflection). In these conditions, you can be burned even in overcast conditions; therefore, wear protective clothing and use sunscreen
High wind events	Severe wind events can create	Employees should avoid areas

	"wind throws" where strong winds can blow down trees	during high wind occurrences that exhibit previous wind damage
Working at high altitudes	Altitude sickness	Recognize signs of acute mountain sickness including headaches, light-headedness, inability to catch one's breath, nausea, and vomiting. Practice prevention by acclimating slowly to high elevations and staying hydrated. If the following symptoms progress, immediately descend to lower elevations and seek medical attention: difficulty breathing, chest pain, confusion, decreased consciousness, and loss of balance
Electrical storms	Being struck by lightning	While working outside, watch the sky for thunderstorms and seek shelter before the weather deteriorates. Stop working in streams and lakes. Someone at the job site must be able to begin revival techniques (i.e. CPR) if someone is struck by lightning. Do not use telephones. If caught in electrical storms, seek shelter inside a vehicle or building. When in a building, keep away from doors, windows, plugged in appliances, and metal. When in a vehicle, avoid contact with metal objects inside. If outside with no shelter, obey the following procedures: do not congregate, do not use metal objects, avoid standing near isolated trees, seek lower elevations such as valleys or canyons, and avoid being on peaks as well as trees. If you feel your hairs standing on end and your skin tingling, this is a sign that lightening might be about to strike so crouch immediately (feet together, hands on knees).
Being outdoors in cold weather for extended periods of time	Hypothermia	Recognize the signs including shivering, numbness, drowsiness, muscle weakness, dizziness,

		nausea, unconsciousness, low/weak pulse, and large pupils. Exercise practice prevention such as staying dry, wearing the appropriate clothing (layers), listen to the weather forecast to plan accordingly, stay hydrated, cover head with warm clothing, and stay active. Be aware of the role that wind-chill can play in hypothermia; under certain conditions, hypothermia can occur without any rain or being wet.
	Frostbite	Dress for the weather- layers are best, and mittens are better than gloves (keeps your warm fingers together while warming each other). Wear two pairs of socks with the inner layer made of synthetic fiber, such as polypropylene, to wick water away from the skin and the outer layer made of wool for increased insulation. Shoes should be waterproof. Keep your head, face, nose, and ears covered at all times. Clothes should fit loosely to avoid a decrease in blood flow to the arms and legs. Always travel with a friend in case help is needed. Be especially wary of wet and windy conditions; the "feels like" temperature (wind chill) is actually much lower than the stated air temperature. The very old, those who are not in good physical condition, and people with diabetes and anyone with vessel disease should take extra precautions.
Working in areas with limited access to clean drinking water	Giardia	Treat, filter, or boil drinking water. Do not drink untreated water from streams, lakes or springs.
Working outdoors	Rattlesnakes	Be alert and do not put your feet or

		hands where you cannot see what is on the ground (for example if you are stepping over a log and you cannot see what's on the other side). If you encounter a rattle snake do not pick it up- give it a wide berth and walk around it. If bitten, seek immediate professional medical attention and remove jewelry. If bitten on an extremity lower than the heart, cover wound with a sterile band while seeking medical attention.
	Bears	If you encounter a bear, be alert but stay calm, and give it as much room as possible. Try to leave the area, but DO NOT RUN. Back away slowly. If the bear follows, stop and hold your ground: wave your arms to make yourself look big and talk in a normal voice. Work in teams of two to deter bear attacks. If the bear makes contact, surrender: fall to the ground and play dead (a bear will break off an attack once it feels the threat has been eliminated). If the bear continues to bite after you assume a defensive posture. Their attack is predatory and you should fight back vigorously
	Mountain Lions	Be alert, calm, and do not panic. If you see a mountain lion, do not run as it may stimulate its predatory nature. Instead, shout and wave arms to let it know that you are not prey: fight back

	Tick bites	Use DEET based repellants on exposed skin and/or permethrin on clothes. Check for ticks during and after field work. If you find a tick remove it with tweezers within 24 hours, preferably immediately: do not leave the head embedded or extract the tick with matches, petroleum jelly, or other coatings (e.g. motor oil)
	Roughskin Newts	Avoiding handling them as their skin contains a potent neurotoxin. If necessary for the protocol, handle only when wearing gloves. Do not "lick" for "killer buzz" as people have died from attempting to eat roughskin newts
	Bee stings	If you know or suspect you are allergic to bee stings, carry appropriate allergy kits prescribed by a doctor for treating anaphylactic shock. Carry and take diphenhydramine (Benadryl). Follow the label instructions for allergy control. Inform your supervisor if you suspect you are allergic. Watch for ground nests
Travel movement or work in area with poison oak or poison ivy	Allergic reaction to poison oak/poison ivy plants	Learn to recognize poison oak. Avoid contact by using ivy block and wearing long pants and long-sleeve shirts if traveling in dense areas. If skin contact is made, flush the area with cold water as soon as possible. Do not flush your skin with warm water or soap as it can open your pores and increase the reaction. To wash and rinse use Tecnu or similar product with cold water to remove oils
Encountering irrigation	Unfriendly encounters with	Do not wear uniforms and carry a

pipes, marijuana plantation, or grow operations	criminal elements	radio backpack that is not visible. Do not confront strangers and act like a tourist if you must speak. Work in pairs or groups. If working in areas likely to contain operations, check in with park staff when leaving vehicle and returning to vehicle. Watch for black piping or other signs. If you find a definite grow operation, leave immediately, note the location, and report it to the authorities

APPENDIX C

Safety Data Sheets

APPENDIX D

COVID-19

059294.001 – Site Specific HASP COVID-19 Supplement

Date: 6/8/2020
CHA Proj. No.: 059294.001
Project Location: Former Coyne Textile Remedial Design
140 Cortland Avenue
Syracuse, NY 13202
Prepared by: Karyn Ehmann

SITE SPECIFIC RISK: COVID-19

Description: Due to the current global pandemic and concerns related to the coronavirus COVID-19, and the Executive Orders (EO) issued by Governor Andrew Cuomo for the state of New York, this supplement is to be added to the Site Specific Health and Safety Plan (HASP) for the provision of remedial design implementation. Design implementation will consist of multiple weeks of construction oversight of intrusive activities. Following intrusive activities, CHA staff will remain on-site for operation of the groundwater recirculation system for several additional weeks. The timeframe anticipated to complete this work is August 1 through October 1, 2020.

Assumptions: It is assumed CHA representatives will not be in direct contact with infected patients, members of the general public, with those testing positive for the virus, or with those known to have previously been infected. This Site-Specific HASP supplement does not provide guidance or recommendations for working in areas with known infected individuals testing positive for or are being treated for COVID-19.

Guidance: CHA representatives will implement and follow the below guidance at a minimum while providing services associated with this contract from commencement to completion, and in conjunction with current CHA Health and Safety Guidelines:

- Maintain Social Distancing at a minimum of six (6) feet whenever practical while within the field office location, the contractors field location, all areas within the hospital intended for access by CHA, and within designated construction areas

- To the extent possible, meetings will be scheduled to allow for remote access to reduce the potential for contact
    - CHA representatives will not attend face-to-face meetings in which Social Distancing policies cannot be maintained or in locations which have not been approved by the CHA Health and Safety Officer (ie. A conference room in the wing of the facility treating patients)

- CHA representatives will don the appropriate PPE gear such as, protective latex gloves and medical / dust masks as recommended by the CDC, while working within construction areas including, but not limited to, inspections, investigations, approvals, and punch-list.

- Masks and gloves are to be replaced at regular intervals as recommended by the CDC, and disposed of appropriately

- CHA representatives will adhere to hand washing and hand sanitizing practices consistent with updated CHA Health and Safety Guidance, and the CDC guidance – links attached within the listed below references.

Additionally, All CHA Employees will adhere to the following protocols:

1.) All field staff will have the CHA essential employee letter (attached to this email) with them at all times in the field and will also have the applicable client letter stating they are essential employees if provided by the client.

2.) If employees have a badge for the client they are working with the badge will be made clear and present.

3.) We will make all attempts to have 1 person per car for field work, all attempts possible to make this happen.

4.) Employee's will practice Social Distancing where it can be safely performed.

5.) No handshaking is permitted

References: OSHA 3990-03 2020 "Guidance on Preparing Workplaces for COVID-19;" NYS Executive Orders (EO) No.202 through No. 202.13[1]; Center for Disease Control and Prevention (CDC) Guidance Documents on COVID-19 https://www.cdc.gov/; CHA Intranet COVID-19 Information Portal https://intranet.cha-llp.com/cms/news/.

[1] NYS Executive Orders issued by Gov. Andrew Cuomo have extended from 202 through 202.13 as of 4/4/2020. EO No. 202 Declaring a Disaster Emergency in State of New York was issued on 1/30/2020.

COVID-19 JOBSITE PRACTICES

EMPLOYERS

Social distancing:
Plan work for 6 feet of separation between workers

Designate a social distancing officer (SDO)

Plan gatherings and breaks for groups of 10 or less

Clean and disinfect surfaces

Ensure you have adequate hand washing stations

Provide PPE to prevent transmission

Restrict the number of visitors to the jobsite

Screen visitors prior to arrival

EMPLOYEES

Prevent transmission:
stay home if you're sick or have symptoms

Cover your cough

Wash your hands often

Avoid touching your face

Avoid sharing transportation to and from the job site

Wear PPE at all times to prevent transmission

Inform your employer of symptoms or possible exposure to COVID-19

Please refer to www.agc-oregon.org for additional accurate and updated information.

APPENDIX E

Incident Report

Incident Report

Please note: This form must be completed within (24) hours of an employee's injury or illness during the workday. This form can be completed by the employee or supervisor (or a witness if his/her supervisor is unavailable).

Employee Information

Employee's Name	Title	Group	Supervisor

Incident Details

Date of Incident	Time of Incident	Location of Incident *(provide address, if available)*

List the Nature of the Employee's Injury & Body Parts Affected (Indicate whether a similar work-related injury has occurred in the past)**:**

Explain What the Employee Was Doing When the Incident Occurred:

Describe How the Incident Occurred:

List any Applicable Objects That Were Directly Involved in the Injury *(i.e. motor vehicle, etc):*

Did the Employee Stop Work Due to the Injury?	If Yes, Has the Employee Returned to Work?

Medical Treatment *(if known)*

Did the Employee Seek Medical Treatment?	Date of First Medical Treatment	Location of Treatment *(provide address, if available)*	Type of Facility *(i.e. emergency room, hospital, urgent care, doctor's office)*	What Type of Treatment

Acknowledgment

Employee Signature:	Date:

Supervisor (or Witness) Name (Printed):	Supervisor (or Witness) Signature:

RETURN COMPLETED FORM TO MEGAN ROBERTSON IN HUMAN RESOURCES

PHONE NUMBER - (518) 453-8750

FAX NUMBER – (518) 453-2889

E-MAIL ADDRESS – MROBERTSON@CHACOMPANIES.COM

cc: Health & Safety
M. Platt

CHA (Your Location) Office

- What to do for Accidents, Incidents, Safety Hazards & Near Misses

1) **<u>If any injury occurs, no matter how minor:</u>**

    a. Get it treated immediately as required. Notify supervisor.
    b. Contact Megan Robertson as soon as possible. Contact Margaret Rudzinski if Megan cannot be reached.
    c. Complete a CHA incident report form and return to Megan Robertson within 24 hours. (V:\Public\ANY\Health_&_Safety\Incident Reporting)

'Contact' means phone until you talk to the person directly. Voicemails and emails do not count.

<u>(Employees should not provide their personal medical insurance information to the medical facility for work-related incidents. Please contact HR for further direction on how your work-related medical claim will be paid.)</u>

2) **<u>For any accident, incident, safety hazard or near miss (no injury occurs)</u>**

    a. Use your 'Stop Work' Authority as required. EVERYONE has the authority to stop work if they see a significant safety issue.
    b. For all – Report to your supervisor within 24 hours.

'Report' means phone, leave voicemail or email as appropriate.

Megan Robertson (Director of HR Operations)	1-518-453-8750 – Office phone 1-518-453-2889 – Fax <u>mrobertson@chacompanies.com</u>	For all Project accidents and incident and/or potential workmen's compensation claims
Margaret Rudzinski (Sr. VP, Corporate Environmental Health & Safety)	1-518-453-2830 – Office phone 1-518-469-9259 – Cell phone <u>mrudzinski@chacompanies.com</u>	Report all safety hazards/issues to Margaret Rudzinski

Recommendations for additional contacts:

- Office Leader
- Safety Coordinator

APPENDIX F

Respirator Inspection Checklist

RESPIRATOR INSPECTION RECORD

Make _____ Model _____

Style _____ Size _____

	INSPECTED	COMMENTS
Facepiece		
Inhalation Valve		
Exhalation Valve Assembly		
Headbands		
Cartridge Holder		
Cartridge/Canister		
Filter		
Harness Assembly		
Hose Assembly		
Speaking Diaphragm		
Gaskets		
Connections		
Other Defects		

	DATE	PASS/FAIL
Qualitative Fit Test		

Certification: I _____ certify that I performed and understand the above inspection procedure and the qualitative fit test. I certify that I have performed these tasks myself prior to wearing my respirator.

Date _____ Signature _____

X: Safety Forms/excel/Res. list

APPENDIX G

Community Air Monitoring Plan

COMMUNITY AIR MONITORING PLAN (CAMP)

Site Management Plan
Former Coyne Textile Facility
BCP Site #C734144

This Community Air Monitoring Plan (CAMP) has been prepared for the Former Coyne Textile Facility (Site), located at 140 Cortland Avenue in the City of Syracuse, New York, and is to be utilized during implementation of the Site Management Plan (SMP). The Site is a part of the New York State Department of Environmental Conservation's (NYSDEC) Brownfield Cleanup Program (BCP).

This CAMP has been prepared in accordance with the NYSDEC and New York State Department of Health (NYSDOH) guidelines to address the potential short-term impacts to the surrounding community and is Appendix G to the SMP. The SMP dictates plans and procedures for continued intrusive subsurface work at the Site and/or handling of excavated soils. All future work will be conducted in accordance with the NYSDEC approved SMP.

Air monitoring at the Site will be performed during all intrusive activities where there is a potential to come into contact with existing Site soil in accordance with the NYSDOH Generic CAMP, and Appendix 1A and 1B of DER-10: Technical Guidance for Site Investigation and Remediation (DER-10). All air monitoring will be conducted on a real-time basis for particulates (i.e. dust) and organic vapors.

The primary contaminants of concern associated with the Site are solvents and petroleum hydrocarbons, which are volatile organic compounds (VOCs). Particulates and VOCs will be monitored concurrently within a CAMP station containing a DustTrak aerosol monitor and photoionization detector (PID), or similar.

Air monitoring readings will be uploaded in real time and made available for review by both the NYSDEC and NYSDOH. Any exceedances that may occur will be addressed and recorded in the field logbook. Air monitoring will be performed during all ground intrusive activities at one location upwind and two locations downwind of the intrusive activities. The direction of wind will be monitored daily to determine upwind and downwind locations. These locations will be adjusted on a daily or more frequent basis based on actual wind directions.

Enclosures will be provided for remote air monitoring stations to reduce potential weather-induced performance issues. The enclosures will be located in areas where they are not subject to damage from vehicular traffic and there is minimal potential for tampering in publicly accessible areas. Additionally, all intake ports on the instruments will be equipped with rain guards/shields to minimize the potential for water intrusion.

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 intrusive activities. Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs and dust to a minimum around the work areas. Supplements to the CAMP may be required depending on the nature of the planned intrusive 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.

"Continuous monitoring" will be required for all ground intrusive activities. Ground intrusive activities include, but are not limited to, installation or repair of underground utilities, landscaping work that requires excavation below the cover soils, etc.

"Periodic monitoring" will be conducted on excavated material and during soil sampling. Excavated soil will be screened for the presence of VOCs with a handheld PID. Soil will be loaded directly into trucks or stockpiled for characterization and off-site disposal in accordance with the SMP.

In order to verify that the fugitive dust and VOC measurements are performed correctly, there must be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the remedial party to conduct periodic instrument calibration, operator training, daily instrument performance checks, and maintain a record keeping plan.

FUGITIVE DUST AND PARTICULATE MONITORING, RESPONSE LEVELS, AND ACTIONS

Fugitive dust is described as discrete particles, liquid droplets or solids, which become airborne and contribute to air quality as a nuisance and potential threat to human health and the

environment. The following fugitive dust suppression and particulate monitoring program will be employed at the Site during 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.

3. Particulate monitoring will be performed using real-time particulate monitors and will 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 µg/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 (mass median diameter (mmd)= 2 to 3; 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 to 10 microns (µm);
    g. Total Number of Data Points in Memory: 10,000 or greater;
    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 short-term exposure limit (STEL) (15 minutes), alarms required. Personnel conducting air monitoring must be immediately notified of any alarms by remote sensors, text messaging, or other similar equipment. Utilizing periodic checks of instrumentation in alarm mode only is not acceptable monitoring practice.
    k. Operating Time: 48 hours (fully charged NiCd battery); continuously with charger;
    l. Operating Temperature: 0 to 50˚ C (14 to 122˚ F); and
    m. Operating Humidity: 10 to 99 percent Relative Humidity.

4. Particulate levels will be monitored immediately downwind at the working Site and integrated over a period not to exceed 15 minutes. Consequently, instrumentation shall require necessary averaging hardware to accomplish this task.

5. The action level will be established at 150 µg/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 µg/m³, the upwind background level must be confirmed immediately. If the working site particulate

measurement is greater than 100 µg/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. Should the action level of 150 µg/m³ (15-minute average) continue to be exceeded work must stop and Project Managers from CHA, NYSDEC, and NYSDOH must be notified. 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 PM10 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.

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

- Wetting equipment and excavation faces;
- Spraying water on buckets during excavation and dumping;
- Hauling materials in properly tarped or watertight containers;
- Restricting vehicle speeds to 10 miles per hour; and
- Covering excavated areas and material after excavation activity ceases.

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.

The evaluation of weather conditions is necessary for proper fugitive dust control. When extreme wind conditions make dust control ineffective, as a last resort, intrusive activities 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.

VOLATILE ORGANIC COMPOUND MONITORING, RESPONSE LEVELS, AND ACTIONS

VOCs will be monitored at upwind and downwind locations adjacent to the ground intrusive work area. VOCs will be monitored on a continuous basis, concurrently with fugitive dust monitoring. The monitoring work should be performed using a 10.6 eV PID. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

If the ambient air concentration of total organic vapors at the downwind perimeter of the work area 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.

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.

If the organic vapor level is above 25 ppm at the perimeter of the work area; activities must be shutdown. The NYSDEC, NYSDOH, and the CHA Project Manager will be notified of the situation. Emergency Response Contacts identified in the Health and Safety Plan, including the local police and fire departments, may be contacted by CHA.

Air monitoring will be conducted at 15-minute intervals at a 20-foot offset from the exclusion zone. If two successive readings below 25 ppm are measured by the field instrument and documented, the work may resume following the previously described monitoring plan.

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

APPENDIX H

Quality Assurance Program Plan

QUALITY ASSURANCE PROJECT PLAN

Former Coyne Textile Facility
140 Cortland Avenue
Syracuse, New York

Site No. C734144

CHA Project Number: 059294.001

Prepared for:

Ranalli/Taylor St, LLC
168 Brampton Road
Syracuse, New York 13205

Prepared by:

300 South State Street, Suite 600
Syracuse, New York 13202
Phone: (315) 471-3920

August 2021

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LIST OF ACRONYMS & ABBREVIATIONS

ASP	Analytical Services Protocol
BCP	Brownfield Cleanup Program
CHA	CHA Consulting, Inc.
COC	Chain-of-Custody
DCE	cis-1,2-Dichloroethene
DER	Division of Environmental Remediation
ELAP	Environmental Laboratory Approval Program
EPA	Environmental Protection Agency
FSP	Field Sampling Plan
GC/MS	Gas Chromatography/Mass Spectrometry
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethene
PFAS	Per- and Polyfluoroalkyl Substances
PID	Photoionization Detector
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RPD	Relative Percent Difference
SMP	Site Management Plan
SOP	Standard Operating Procedure
SSDS	Sub-Slab Depressurization System
SVOC	Semi-volatile Organic Compounds
TAL	Target Analyte List
TBD	To Be Determined
TCE	Trichloroethene
TCLP	Toxicity Characteristic Leaching Potential
TOGS	Technical and Operational Guidance Series
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The Quality Assurance Project Plan (QAPP) has been prepared for the site management activities described in the Site Management Plan (SMP) for the Former Coyne Textile Facility located at 140 Cortland Avenue, City of Syracuse in Onondaga County, New York (Site). The Site is a volunteer in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) as Site Number C734144. This QAPP presents the policies, organization, objectives, functional activities and specific Quality Assurance (QA) and Quality Control (QC) activities designed to achieve the specific data quality goals associated with the remediation and has been prepared as an appendix to the SMP. The scope of work associated with the site monitoring post the remedial activities is discussed in the SMP.

The QAPP identifies the procedures for sample preparation and handling, sample chain-of-custody, laboratory analyses, and reporting to be implemented during the remedial activities to generate accurate data. Work performed as part of the remedial activities shall adhere to CHA Consulting, Inc's (CHA) Standard Operating Procedures (SOPs), included in Appendix A of the Field Sampling Plan (FSP).

2.0 PROJECT MANAGEMENT

A brief description of the duties of key personnel are presented below.

NYSDEC Regulatory Authority

Michael Belveg - NYSDEC Project Manager

- Approve the SMP and all appendices, including this QAPP, and any modifications to the project

NYSDOH Regulatory Authority

Angela Martin - NYSDOH Project Manager

- Approve the SMP and all appendices, including this QAPP, and any modifications to the project

JMA Wireless

Gail Cawley – JMA Wireless d/b/a GEC Consulting Project Manager

- Client representative, responsible for the overall BCP management of the Former Coyne Textile Facility.

CHA

Samantha Miller, PE – CHA Project Manager, Technical Manager/Project Coordinator

- Responsible for design of the remedial activities;
- Responsible for following the approved SMP, notifying the NYSDEC of any deficiencies, and obtaining approval by the NYSDEC for all modifications to the project;
- Provide overall and day-to-day project management;
- Ensure all resources of CHA are available on an as-required basis;
- Participate in key technical negotiations with the NYSDEC, as necessary;
- Evaluate data;
- Prepare and coordinate the issuance of reports;
- Provide immediate supervision of all on-site activities;
- Assist in preparation and review of final report; and
- Provide technical representation for field activities.

Scott Smith, PE - CHA Interim Chief Engineer and QA/QC Manager

- Responsible for design of the remedial activities;
- Provides oversight and guidance on implementation of the design;
- Assist in preparation and review of final report; and

- Provide managerial guidance to CHA's technical group.
- Conduct internal audit of field investigation and sampling;
- Review laboratory activities;
- Determine laboratory data corrective action;
- Review analytical data validation and assessment;
- Review laboratory QA/QC;
- Assist in preparation and review of final report; and,
- Provide technical representation for analytical activities.

Karyn Ehmann - Field Oversight and QC Coordinator

- Serve as Field Team Leader;
- Work with field crew to prepare for field activities and conduct investigations; and,
- On-Site to
    1. Provide oversight and coordination of field activities.
    2. Verify that required QC procedures are followed for soil boring and monitoring well installation activities, material handling, and sample collection.
    3. Initiate informal and/or formal corrective actions as necessary.
    4. Maintain and report QC records (i.e. chain-of-custody, field equipment calibration, etc.).
    5. Report to the Project Manager.
- Provide field management of sample collection and field QA/QC;
- Responsible for maintenance of the field equipment; and
- Assist in preparation and review of final report.

Laboratory

Alpha Analytical Laboratories

8 Walkup Drive
Westborough, MA 01581
Contact: Melissa Deyo, Project Manager
(716) 457-5229

Alpha Analytical, Inc. is the analytical laboratory chosen to perform the proposed work and is certified by the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) Number 11148 to perform the required analyses in accordance with the most recent version of the NYSDEC Analytical Services Protocol (ASP).

Project Manager, Analytical Contractor

- Ensure resources of laboratory are available on an as-required basis;
- Coordinate laboratory analyses;
- Supervise laboratory's in-house chain-of custody (COC);

- Schedule analyses of samples;
- Oversee review of data;
- Oversee preparation of analytical reports; and,
- Approve final analytical reports prior to submission to CHA.

Quality Assurance/ Quality Control Officer, Analytical Contractor

- Overview laboratory QA/QC;
- Overview QA/QC documentation;
- Conduct detailed data review;
- Decide laboratory corrective actions, if required; and,
- Provide technical representation for laboratory QA/QC procedures.

Sample Custodian, Analytical Contractor

- Receive and inspect the sample containers;
- Record the condition of the sample containers;
- Sign appropriate documents;
- Verify chain-of-custodies and their correctness;
- Notify laboratory project manager and laboratory QA/QC Officer of sample receipt and inspection;
- Assign a unique laboratory identification number correlated to CHA's sample identification number, and enter each into the sample receiving log;
- Initiate transfer of the samples to the appropriate lab sections with assistance from the laboratory project manager; and,
- Control and monitor access to and storage of samples and extracts.

3.0 SAMPLING PROCEDURES

The procedures for collecting samples and for performing related field activities are described in detail in the Field Sampling Plan. Sample preservation methods and maximum sample holding times, as detailed in CHA SOP #603, are summarized in Table 1 at the end of this Section.

3.1 FIELD SAMPLING DOCUMENTATION

In order to produce an accurate and reliable record of all field activities, including field observations, sample collection activities, etc., a field logbook will be maintained during the duration of all field work. Pre-printed data sheets shall be used for field sampling. All pertinent field survey and sampling information shall be recorded in the logbook or on field logs during each day of the field effort.

At a minimum, field sampling entries shall adhere to CHA SOP #101 and will include:

- Date and time of starting work;
- Names of all personnel at site;
- Purpose of proposed work effort;
- Sampling equipment to be used and calibration of equipment;
- Description of work area;
- Location of work area, including map reference;
- Details of work effort, particularly any deviation from the field operations plan or standard operating procedures;
- Field observations;
- Field measurements (e.g., PID);
- Field laboratory analytical results;
- Personnel and equipment decontamination procedures;
- Daily health and safety entries, including levels of protection;
- Type and number of samples;
- Sampling method, particularly deviations from the standard operating procedures;
- Sample location and number; and
- Sample handling, packaging, labeling, and shipping information (including destination).

Each day's entries will be initialed and dated at the end by the author, and a line will be drawn through the remainder of the page. All entries in the logbook shall be made in indelible black ink. All

corrections shall consist of single line-out deletions that are initialed. The field task leader shall be responsible for verifying that sufficient detail is recorded in the logbooks and shall review the site logbooks daily. Entries include persons present, sampling location, time/date, weather conditions, and any problems encountered during sampling.

Field measurements and observations will assist in the interpretation of analytical results obtained. Therefore, it is important that these measurements and observations be as complete as possible. For each sample collected, the following shall be recorded in indelible ink on the field log sheet:

- Site location identification;
- Depth interval of sample;
- Unique sample identification number;
- Date and time of sample collection;
- Weather conditions;
- Designation as to the type of sample (soil, vapor, etc.);
- Designation as to the means of collection (hang auger, direct-push technology, etc.);
- Brief description of the sample, including pH, specific conductivity and temperature of water samples (if collected);
- Name of sampler;
- Analyses to be performed on sample; and
- Any other relevant comments such as odor, staining, texture, size of area sampled, etc.

The general QA objective for measurement data is to obtain reproducible and comparable measurements to a degree of accuracy consistent with the use of standardized procedures.

3.2 SAMPLE COLLECTION

Groundwater Sampling

Groundwater monitoring will be performed to assess the contamination remaining at the Site. A network of six permanent monitoring wells is installed to facilitate groundwater collection. Groundwater samples will be collected in accordance with the SMP and FSP.

Site contaminants of concern were primarily volatile organic compounds (VOCs), including chlorinated solvent and petroleum hydrocarbon parameters. Generally, the main constituents identified in groundwater during investigative activities included tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride, and benzene. Semi-volatile

organic compounds (SVOCs) have typically not been detected during previous groundwater sampling events. Therefore, the analytical monitoring program will consist of the VOCs via EPA Method 8260, only.

Groundwater samples will be submitted to a NYSDOH ELAP-certified laboratory under proper chain-of-custody. One field duplicate and one trip blank will be collected at the time of each groundwater sampling event for QAQC purposes. Groundwater monitoring results will be compared to the Technical and Operational Guidance Series (TOGS) 1.1.1 for Ambient Groundwater Quality Class GA waters.

Vapor Sampling

Sub-slab soil vapor and indoor air sampling are required once post-remedial sub-slab depressurization system (SSDS) installation. The post-mitigation testing will be performed more than 30 days after start-up of the SSDS system and during the heating season, if possible. If vapors are detected indoors above guidance levels, further testing and/or corrective measures will be implemented as appropriate.

The SSDS design called for 14 sub-slab soil vapor monitoring points at various locations around the office and manufacturing warehouse sections of the building. Indoor air samples will be collected adjacent to the sub-slab vapor samples at a height of approximately 4 feet above the concrete slab. Additionally, one outdoor air sample will be collected concurrently. These locations are presented on Figure 2 of the FSP , but the outdoor air sampling location may be changed to account for on-site activities and wind direction. All samples will be collected in laboratory certified pre-cleaned SUMMA® canisters for VOCs via EPA Method TO-15. Two duplicate samples will be collected for QA/QC purposes.

Imported Fill Soil Sampling

At this time, no imported fill material is anticipated. However, fill material imported during future development of the Site shall be sampled in accordance with NYSDEC DER-10 Table 5.4e10. The following table indicates the number of samples required for quantity of soil imported for each soil type (i.e. topsoil and sand).

Table 1. Imported Fill Sampling Requirements

Soil Quantity (cubic yards)	Grab Sample	Composite Sample
0-50	1	1
50-100	2	1
100-200	3	1
200-300	4	1
300-400	4	2
400-500	5	2
500-800	6	2
800-1,000	7	2
>1,000	2 additional grab samples every 1000 cubic yards or consult with NYSDEC	1 additional composite sample every 1000 cubic yards or consult with NYSDEC

The samples will be submitted to an off-site NYSDOH ELAP-certified laboratory and analyzed for the following parameters.

- VOCs via EPA Method 8260;
- SVOCs via EPA Method 8270;
- Polychlorinated biphenyls (PCBs) via EPA Method 8082;
- Perfluoroalkyl substances (PFAS) via EPA Method 537;
- 1,4-Dioxane via EPA Method 8270;
- Target Analyte List (TAL) Metals via EPA Method 6010 and 7471B;
- Herbicides via EPA Method 8151A; and
- Pesticides via EPA Method 8081B.

Soil samples will be collected using grab sample techniques for VOCs and composite sample techniques for SVOCs, PCBs, PFAS, 1,4-Dioxane, TAL Metals, Herbicides, and Pesticides. The number of imported fill samples will be determined on-site based on the quantity of fill material imported. QA/QC samples will not be collected for imported soil.

Waste Characterization Soil Sampling

Additional waste characterization sampling is not anticipated at this time. However, if future development of the Site requires the disposal of soils that are generated during excavation activities, sampling and off-site disposal are required. One sample per 1,000 cubic yards (yd^3) of soils designated for off-site disposal (or as required by the disposal facility) will be collected. Sampling shall be performed using disposable latex gloves or other disposable sampling equipment. This will be completed for all parameter fractions with the exception of toxicity characteristic leaching procedure (TCLP) VOCs, which will be collected as a single discrete (i.e.

Grab) sample. The composite sample will be analyzed for the presence TCLP SVOCs, PCBs, TCLP pesticides, TCLP herbicides, TCLP metals, ignitability, reactivity, and pH. QAQC samples will not be collected for waste characterization samples

Table 2: Analytical Methods/Quality Assurance Summary

Matrix (Sample Type)	Parameter /Fraction	Analytical Method	Number of Primary Samples	Number of Duplicates/ MS/MSD	Number of Trip Blanks/Field Blanks	Recommended Sample Volume and Container	Sample Preservation	Technical Holding Time
Water: Groundwater Monitoring Wells	TCL VOCs	EPA Method 8260C	6	1/1/1	1/0/0	3 40 mL glass vials with Teflon-lined septa lids	1:1 HCL, <2 pH, cool to 4°C	14 days from sample collection
Vapor: Sub-Slab, Indoor Air, and Outdoor Air	VOCs	EPA Method T0-15	28	1/0/0	0/0/0	2.7 L SUMMA canister with flow controller for 8-hour sampling time	None	30 days from sample collection
Soil: Imported Fill Samples	TCL VOCs	EPA Method 8260C	TBD	0/0/0	0/0	4 oz. amber glass wide	Cool to 4ºC	14 days from sample collection
	TCL SVOCs	EPA Method 8270D	TBD	0/0/0	0/0	8 oz. amber glass wide	Cool to 4ºC	14 days from sample collection
	Pesticides	EPA Method 8081B	TBD	0/0/0	0/0	4 oz. amber glass wide	Cool to 4ºC	14 days from sample extraction
	PCBs	EPA Method 8082	TBD	0/0/0	0/0	8 oz. glass wide	Cool to 4ºC	7 days from sample collection/ 40 days from extraction
	PFAS	EPA Method 537	TBD	0/0/0	0/0	HDPE or polypropylene bottles	Cool to 4°C	14 days from sample collection
	1,4-Dioxane	Modified EPA Method 8270	TBD	0/0/0	0/0	HDPE or polypropylene bottles	Cool to 4°C	14 days from sample collection
	TAL Metals	EPA Method 6010C	TBD	0/0/0	0/0	8 oz. glass wide	Cool to 4ºC	6 months from sample collection
	Herbicides	EPA Method 8151A	TBD	0/0/0	0/0	4 oz. amber glass wide	Cool to 4ºC	14 days from sample extraction
	TCLP VOCs	EPA Method 8260C	TBD	0/0/0	0/0	4 oz. amber glass wide	Cool to 4°C	14 days from sample collection

Matrix (Sample Type)	Parameter /Fraction	Analytical Method	Number of Primary Samples	Number of Duplicates/ MS/MSD	Number of Trip Blanks/Field Blanks	Recommended Sample Volume and Container	Sample Preservation	Technical Holding Time
Soil: Waste Characterization Samples	TCLP SVOCs	EPA Method 8270D	TBD	0/0/0	0/0	8 oz. amber glass wide	Cool to 4°C	14 days from sample collection
	Pesticides	EPA Method 8081B	TBD	0/0/0	0/0	4 oz. amber glass wide	Cool to 4°C	14 days from sample extraction
	PCBs	EPA Method 8082	TBD	0/0/0	0/0	8 oz. glass wide	Cool to 4°C	7 days from sample collection/ 40 days from extraction
	TCLP Metals	EPA Method 6010C, 7470A	TBD	0/0/0	0/0	8 oz. glass wide	Cool to 4°C	6 months from sample collection
	Herbicides	EPA Method 8151A	TBD	0/0/0	0/0	4 oz. amber glass wide	Cool to 4°C	14 days from sample extraction

4.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

The overall QA objective is to develop and implement procedures for sample preparation and handling, sample chain-of-custody, laboratory analyses, and reporting to provide accurate data. Specific procedures to be followed for sampling, sample custody and document control, calibration, laboratory analyses and data reduction, and validation, assessment and reporting are presented in Sections 5.0 through 9.0 of this QAPP.

The purpose of this Section is to define the goals for the level of QA effort; namely, accuracy; precision and sensitivity of analyses; and completeness, representativeness and comparability of measurement data from the analytical laboratories. QA objectives for field measurements are also discussed.

The sampling and analysis program is summarized below and lists the specific parameters to be measured, the number of samples to be collected, and the level of QA effort required for each matrix.

4.1 LEVEL OF QA EFFORT

To assess the quality of data resulting from the sampling program, field duplicate samples, and samples for laboratory matrix spike/matrix spike duplicate (MS/MSD) analyses will be collected (where appropriate) and submitted to the contract laboratory.

Groundwater Sampling

For groundwater sampling, field duplicate samples will be submitted at a frequency of 1 per 20 samples (minimum of 1 per sampling event) as discussed in CHA SOP #605. Field duplicate samples will be collected and analyzed as a check on the aggregate analytical and sampling protocol precision. One set of MS/MSD samples will be analyzed as a check on the analytical method's accuracy and precision and will be analyzed at a frequency of 1 per 20 samples. One trip blank sample will be submitted for analysis for each sampling event. All groundwater samples will be analyzed for VOCs via EPA Method 8260C.

Vapor Sampling

For vapor sampling, field duplicate samples will be submitted at a frequency of 1 per 20 samples (minimum of 1 per sampling event), similar to groundwater sampling. MS/MSD samples will not be collected for vapor samples.

4.2 ACCURACY, PRECISION AND SENSITIVITY OF ANALYSES

The fundamental QA objective with respect to the accuracy, precision and sensitivity of analytical data is to achieve the QC acceptance of each analytical protocol. The method(s) precision (relative percent difference of duplicate analysis) will be determined from the duplicate analyses of matrix spike samples. A minimum of one groundwater sample per event will be spiked and analyzed in duplicate. Analysis will compare with the criteria presented in the appropriate methods identified in Section 8.0.

The method(s) accuracy (percent recovery) for samples will be determined by spiking selected samples (matrix spikes) with test compounds. Accuracy will be reported as the percent recovery of the test compound and will compare with the criteria given in the appropriate methods as identified in Section 8.0.

4.3 COMPLETENESS, REPRESENTATIVENESS AND COMPARABILITY

It is expected that all analyses conducted in accordance with the selected methods will provide data meeting QC acceptance criteria for 90 percent of all samples tested. Any reasons for variances will be documented.

The sampling program has been designed to provide data representative of conditions in the area to be monitored during the post-closure period.. During development of these networks, consideration was given to past disposal practices, existing data from past studies completed for the Site and the physical Site setting. The extent to which existing and planned analytical data will be comparable depends on the similarity of sampling and analytical methods. The procedures used to obtain the planned analytical data are documented in this QAPP. However, it may be necessary to verify similar documentation from previous analytical data to adequately establish comparability. Comparability of laboratory analyses will be conducted by using consistent units. Following completion of data collection, the existing database will be evaluated for representativeness.

5.0 SAMPLE CUSTODY AND DOCUMENT CONTROL

5.1 CHAIN-OF-CUSTODY

A COC will be maintained to document the transfer of all samples in accordance with CHA SOP #105. Each sample container will be properly sealed. Sample container labels will include sample number, place of collection and date and time of collection. Sample containers will be delivered to the Contract Laboratory at 4°C (±2°C) in sealed coolers.

Each sample cooler will contain an appropriately completed COC form. One copy will be returned to CHA upon receipt of the samples by the laboratory. One copy will be returned to CHA with the data deliverables package.

Upon receipt of the cooler at the laboratory, it will be inspected by the designated sample custodian. The condition of the cooler and sample containers will be noted on the COC record sheet by the sample custodian. The sample custodian will also document the date and time of receipt of the container and sign the form.

If damage or discrepancies are noticed, they will be recorded in the remarks column of the record sheet, dated and signed. Any damage or discrepancies will be reported to the lab supervisor who will inform the lab manager and QA Officer.

5.2 SAMPLE DOCUMENTATION IN THE LABORATORY

Each sample or group of samples will be given a unique identification number. The laboratory sample custodian will record the client name, number of samples and date of receipt of samples in the Sample Control Log Book.

The laboratory will be responsible for maintaining analytical log books and laboratory data as well as sample inventory on hand for submittal to CHA on an "as required" basis. Samples will be maintained by the laboratory for a period of 30 days, under the conditions prescribed by the appropriate EPA methods, for additional analyses, if necessary. Raw laboratory data files will be inventoried and maintained by the laboratory for a period of five years, at which time CHA will advise them as to the need for additional storage.

5.3 STORAGE OF SAMPLES AND RECORDS

Samples will be stored in laboratory supplied coolers and on ice until the samples have been received by the contract laboratory under proper COC. Upon receipt, samples will be managed by the laboratory to maintain proper temperatures for the appropriate holding time. The contract laboratory will hold samples for 21 days after the project is completed. After 21 calendar days, the samples will be disposed of property unless the contract laboratory is directed to hold the samples for an extended period of time.

Evidentiary files for the entire project will be inventoried and maintained by CHA and will consist of the following:

1) Project related plans;
2) Project log books;
3) Field data records;
4) Sample identification documents;
5) Chain-of-Custody records;
6) Report notes, calculations, etc.;
7) References, literature;
8) Miscellaneous - photos, maps, drawings, etc.; and
9) Copies of all final reports pertaining to the project.

The project file materials will be the responsibility of CHA's Project Manager with respect to document maintenance and management. Most of these documents exist and/or can be transferred into an electronic format and stored on CHA’s servers which are backed up daily.

6.0 CALIBRATION PROCEDURES AND FREQUENCY

6.1 INSTRUMENT CALIBRATION AND TUNING

Calibration of instrumentation is required to ensure that the analytical system is operating correctly and functioning at the proper sensitivity to meet established reporting limits. Each instrument is calibrated with standard solutions appropriate to the type of instrument and the linear range established for the analytical method. The frequency of calibration and the concentration of calibration standards are determined by the manufacturer's guidelines, the analytical method, or the requirements of special contracts.

6.2 FIELD INSTRUMENT CALIBRATION

Calibration of the field instruments will be completed prior to each day's use in accordance with the manufacturer's instructions. The field equipment will be maintained, calibrated and operated in a manner consistent with the manufacturer's guidelines and EPA standard methods. However, since most field measurements will be limited to organic vapor readings (PID readings), the calibration procedures will be conducted at a minimum frequency of once per day. Records of calibration, repair or replacement will be filed and maintained by the Field QC Coordinator.

7.0 ANALYTICAL PROCEDURES

7.1 IDENTIFICATION

Compounds which will be analyzed by Gas Chromatography/Mass Spectrometry (GC/MS) are identified by comparison of the sample mass spectrum with the mass spectrum of a standard of the suspected compound (standard reference spectrum). Mass spectra for standard references should be obtained on the user's GC/MS within the same 12 hours as the sample analysis. These standard reference spectra may be obtained through analysis of the calibration standards. The following criteria must be satisfied to verify identification: (1) elution of the sample component at the same GC relative retention time as the standard component; and (2) correspondence of the sample component and the standard component mass spectrum.

For GC determinations of specific analytes, the relative retention time of the unknown will be compared with that of an authentic standard. Since a true identification by GC is not possible, an analytical run for compound confirmation will be followed according to the specifications in the methods. Peaks must elute within daily retention time windows established for each indicator parameter to be declared a tentative or confirmed identification. Retention time windows are determined using standard protocols defined in each method.

7.2 QUANTIFICATION

The procedures for quantification of analytes are discussed in the appropriate analytical methods. For any analysis by GC/MS, estimation of concentration of an organic compound not contained within the calibration standard may be accomplished by comparing the mass spectral responses of the compound with that of an internal standard. This procedure is specified in the referenced EPA methods.

7.3 DETECTION LIMIT REQUIREMENTS

The data obtained from all sample analysis will have targeted detection limits that are the lowest applicable for the appropriate method. Specifically, reporting limits will be below applicable Soil Cleanup Guidance values for all soil samples and to the method detection limit for all vapor samples.

8.0 DATA REDUCTION, VALIDATION, ASSESSMENT AND REPORTING

8.1 GENERAL

The Contract Laboratory will perform analytical data reduction and validation in-house under the direction of the laboratory QA Officer. The laboratory's QA Officer will be responsible for assessing data quality and advising of any data which were rated "preliminary" or "unacceptable" or other qualifications based on the QC criteria outlined in the methods, which would caution the data user of possible unreliability.

Assessment of analytical and field data will include checks for data consistency by looking for comparability of duplicate analyses, laboratory QA procedures, adherence to accuracy and precision criteria, transmittal errors, and anomalously high or low parameter values. The results of these data validations will be reported to the project managers, noting any discrepancies and their effect upon acceptability of the data.

8.2 FIELD DATA

Raw data from field measurements and sample collection activities that are used in project reports will be appropriately identified and appended to the report. Where data have been reduced or summarized, the method of reduction will be documented in the report. Field data will be reviewed for anomalously high or low values that may appear to be inconsistent with other data.

Field sampling data will be reviewed by the CHA QA/QC Officer to confirm the following information has been properly documented:

- Sample identification;
- Source;
- Date and time of sampling;
- Sampling equipment;
- Person(s) collecting the sample; and
- Results of field monitoring and/or observations.

In addition, the field sampling data will be evaluated for the following:

- The use of approved sampling and sample handling procedures;
- Proper packing/shipping procedures were used; and
- Proper COC was maintained.

8.3 CONTRACT LABORATORY REPORTING

All reporting and deliverables from the Contract Laboratory will be in accordance with the NYSDEC July 2005 ASP, Category B. Sample data and its corresponding QA/QC data, as specified in Category B, shall be maintained accessible to CHA either in hard copy or on disk.

8.4 EQUIS DATA

The Contract Laboratory will also be required to provide the data in an electronic data deliverable (EQuIS) format for electronic data deliverable (EDD) submission to the NYSDEC. The analytical data, along with field data, will be added into EQuIS compatible spreadsheets for processing and submittal to the NYSDEC. For groundwater data, the data required include, but are not limited to:

- X and Y coordinates
- Water level
- Ground elevation
- Depth to top and bottom of well screen
- Water quality data from laboratory
- Specified sampling method.

9.0 INTERNAL QUALITY CONTROL CHECKS AND FREQUENCY

9.1 FIELD QC

Quality control procedures for field measurements will be limited to checking the reproducibility of the measurement in the field by obtaining multiple readings and by calibrating the instruments (where appropriate).

Quality control of field sampling will involve collecting field duplicates and MS/MSD samples with the applicable site activities described in the SMP. Field QC samples are also discussed in Section 4.0.

9.2 LABORATORY QC

Specific procedures related to internal laboratory QC samples (namely blanks, MS/MSD, surrogates and QC check samples) are described in the following subsections.

9.2.1 Matrix Spike/Matrix Spike Duplicates

An MS/MSD sample will be analyzed at a minimum frequency one sample for every 20 samples that are collected. For sampling events consisting of less than 20 samples, one MS/MSD sample will be collected. Acceptable criteria and compounds that will be used for matrix spikes are identified in the appropriate methods (see Section 8.0). Percent spike recoveries will be used to evaluate analytical accuracy while percent relative standard deviation or the relative percent difference (RPD) between matrix spike analyses will be used to assess analytical precision.

9.2.2 Surrogate Analyses

Surrogates are organic compounds which are similar to the analytes of interest, but which are not normally found in environmental samples. Surrogates are added to samples to monitor the effect of the matrix on the accuracy of the analysis. Every blank, standard and environmental sample analyzed by GC or GC/MS, including MS/MSD samples, will be spiked with surrogate compounds prior to sample preparation.

Surrogates will be spiked into samples according to the appropriate analytical methods. Surrogate spike recoveries will be compared with the control limits set by procedures specified in the method (or from laboratory specific control limits) for analytes falling within the quantification limits

without dilution. Dilution of samples to bring the analyte concentration into the linear range of calibration may dilute the surrogates out of the quantification limit. Assessment of analytical quality in these cases will be based on the quality control embodied in the check and MS/MSD samples.

10.0 PERFORMANCE AND SYSTEM AUDITS AND FREQUENCY

The QA Officer may carry out performance and/or systems audits to confirm that data of known or defensible quality are consistently produced during a program.

Systems audits are qualitative evaluations of components of field and laboratory quality control measurement systems. They determine if the measurement systems are being used appropriately. The audits may be carried out before all systems are operational, during the program, or after the completion of the program. Such audits typically involve a comparison of the activities given in the QAPP described herein, with activities actually scheduled or performed. A special type of systems audit is the data management audit. This audit addresses only data collection and management activities.

The performance audit is a quantitative evaluation of the measurements systems used for a monitoring program. It requires testing the measurement systems with samples of known composition or behavior to evaluate precision and accuracy. A performance audit may be carried out by or under the auspices of the QA Officer without the knowledge of the analyst during each sampling event for this program.

In addition, an external QA audit may be conducted by CHA prior to the analyses of any investigatory samples. It should be noted, however, that any external QA audits will only be performed if deemed necessary by either the CHA Project Manager or the CHA QA/QC Officer. The Contract Laboratory may also undergo QC audit(s) by the NYSDEC or NYSDOH, if so required.

11.0 PROCEDURES USED TO ASSESS PERFORMANCE

11.1 PRECISION

Precision will be assessed by comparing the analytical results between duplicate spike analyses. Precision as RPD will be calculated as follows:

$$\text{Precision} = \frac{[D_2 - D_1]}{(D_1 + D_2)/2} \times 100$$

D_1 = matrix spike recovery
D_2 = matrix spike duplicate spike recovery

Acceptance criteria for duplicate soil samples will be ≤30% RPD. Acceptance criteria for duplicate water samples will be ≤20% RPD between field and laboratory data.

Percent relative standard deviation or the RPD between matrix spike analyses will be used to assess laboratory analytical precision. Acceptable criteria and compounds that will be used are identified in the appropriate EPA methods.

11.2 ACCURACY

Accuracy will be assessed by comparing a set of analytical results to the accepted or "true" values that would be expected. In general, MS/MSD and surrogate spike recoveries will be used to assess accuracy. Accuracy as percent recovery will be calculated as follows:

$$\text{Accuracy} = \frac{A - B}{C} \times 100$$

A = The analyte determined experimentally from the spike sample.
B = The background level determined by a separate analysis of the unspiked sample.
C = The amount of spike added.

Percent spike recoveries in MS/MSD and surrogate spike recoveries will be used to evaluate analytical accuracy. Acceptable criteria and compounds that will be used for matrix spikes are identified in the appropriate EPA methods.

The evaluation of accuracy of field measurements will be limited to checking the reproducibility of the measurement in the field by obtaining multiple readings and by calibrating the instruments (where appropriate).

11.3 REPRESENTATIVENESS, COMPLETENESS AND COMPARABILITY

Completeness is a measure of the amount of valid data obtained from a measurement system compared with the amount that was expected to be obtained under normal conditions.

To be considered complete, the data set must contain all QC check analyses verifying precision and accuracy for the analytical protocol. In addition, all data are reviewed in terms of stated goals in order to determine if the database is sufficient.

When possible, the percent completeness for each set of samples will be calculated as follows:

$$\text{Completeness} = \frac{\text{valid data obtained}}{\text{total data planned}} \times 100 \text{ percent}$$

A completeness goal of 100 percent has been established for this project. However, if the completeness goal is not met, site decisions may be based on any, or all, of the remaining, validated data. Representativeness will be addressed by collecting the samples as described in this document. Comparability will be addressed by collecting, analyzing, and reporting the data as described in this document.

11.4 OUTLIERS

Procedures discussed previously will be followed for documenting deviations. In the event that a result deviates significantly from method established control limits, this deviation will be noted and its effect on the quality of the remaining data will be assessed and documented.

12.0 CORRECTIVE ACTION

The need for corrective action may be identified by system or performance audits or by standard QC procedures. The essential steps in the corrective action system will be:

1) Checking the predetermined limits for data acceptability beyond which corrective action is required;
2) Identifying and defining problems;
3) Assigning responsibility for investigating the problem;
4) Investigating and determining the cause of the problem;
5) Determination of a corrective action to eliminate the problem (this may include re-analysis or re-sampling and analyses);
6) Implementing the corrective action and evaluating the effectiveness;
7) Verifying that the corrective action has eliminated the problem; and
8) Documenting the corrective action taken.

For each measurement system, the Laboratory QA/QC Officer will be responsible for initiating the corrective action and the laboratory supervisor will be responsible for implementing the corrective action.

13.0 QUALITY ASSURANCE REPORT TO MANAGEMENT

The CHA Project Manager will receive reports on the performance of the measurement system and the data quality following each sampling round and at the conclusion of the project.

At a minimum, these reports will include:

1) Assessment of measurement quality indicators; (i.e. data accuracy, precision and completeness);
2) Results of systems audits; and
3) QA problems and recommended solutions.

CHA's QA/QC Officer will be responsible within the organizational structure for preparing these periodic reports. The final report for the project will also include a separate QA section which will summarize data quality information contained in the periodic QA/QC reports to management and present an overall data assessment and validation in accordance with the data quality objectives outlined in this QAPP.

APPENDIX I

Site Management Forms

INSPECTION CHECKLIST

Report No.	
Date:	Time:

Site Name: Former Coyne Textile	NYSDEC Site No. C734144
Address: 140 Cortland Avenue	Project No. 059294
Inspector(s):	Weather:
	Temp.: Hi Low
Type of Inspection: ☐ Routine ☐ Post Severe Condition	Time Low Tide:

SOIL COVER SYSTEM INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
There is no evidence of erosion of cover soils/materials from Site surface.	☐	☐	☐	
There is no evidence of depressions in cover materials.	☐	☐	☐	
There is no evidence of significant cracks in cover materials.	☐	☐	☐	
There is no evidence of exposed or damaged demarcation barrier.	☐	☐	☐	
There is no evidence of vapors or odors emanating from the Site.	☐	☐	☐	

VEGETATIVE INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
Vegetation is well established over greenspace areas.	☐	☐	☐	
There is no evidence of stressed vegetation.	☐	☐	☐	
There is no evidence of bare or thin vegetative cover.	☐	☐	☐	
There is no evidence of overgrowth or areas that need to be mowed.	☐	☐	☐	
There is no evidence of recent areas of excavation or disturbed areas.	☐	☐	☐	

VECTOR INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
No vectors or vector activity (e.g. tracks, droppings, dens, etc.) were observed.	☐	☐	☐	
There was no evidence of damage to the soil cover system due to vector activity.	☐	☐	☐	

DRAINAGE SYSTEM INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
There is no evidence of erosion around drainage structures.	☐	☐	☐	
There is no evidence of settlement of drainage structures.	☐	☐	☐	
Manhole covers present & in good condition.	☐	☐	☐	
There is no evidence of siltation, debris, or other restrictions in the manholes.	☐	☐	☐	

INSPECTION CHECKLIST

Report No.	
Date:	Time:

MONITORING WELL INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
The monitoring wells are in generally good condition.	☐	☐	☐	
Well caps are installed on the wells.	☐	☐	☐	
Locks present and secured.	☐	☐	☐	

SITE ACCESSIBILITY INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
Site accessible and passable.	☐	☐	☐	

INSTITUTIONAL CONTROL INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
The Site continues to be utilized for commercial and passive recreational uses only.	☐	☐	☐	
There is no evidence of groundwater extraction and/or use on Site.	☐	☐	☐	

ADDITIONAL NOTES & OBSERVATIONS

Signature:	Total Inspection Time:

SUB-SLAB DEPRESSURIZATION SYSTEM CHECKLIST

Report No.	
Date:	Time:

Inspector(s):	Project No.
	Weather:
Type of Inspection: ☐ Routine ☐ Post Severe Condition	Temp.: Hi Low

FAN SYSTEM INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
The fan unit(s) is/are operational,	☐	☐	☐	
There is no excessive noise emanating from the fan(s).	☐	☐	☐	
There is no excessive vibration emanating from the fan(s).	☐	☐	☐	
The fan(s) is/are not excessively hot to the touch.	☐	☐	☐	
The fan unit housing is clean and in good condition.	☐	☐	☐	

SYSTEM PRESSURE INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
Vacuum gauge on inlet piping in good condition and shows negative pressure is being applied to sub-slab.	☐	☐	☐	
Pressure gauge on discharge piping in good condition and shows positive pressure being exhausted from blower.	☐	☐	☐	
Pressures are within acceptable normal range for system.	☐	☐	☐	Pressure Reading: ____ inches H_2O
When required, pressure field extension testing demonstrates continued sub-slab communication.	☐	☐	☐	

ELECTRICAL/ALARM INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
No observable electrical component damage.	☐	☐	☐	
All electrical disconnects/switches tested and functional.	☐	☐	☐	
Alarm sounds when blower power disconnected and pressure falls below alarm set point.	☐	☐	☐	

PIPING SYSTEM INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
All above-grade piping in good condition and free of cracks or other damage.	☐	☐	☐	
All pipe supports undamaged and functional.	☐	☐	☐	
In-line mufflers/silencers installed and functioning properly.	☐	☐	☐	
Discharge piping above roof undamaged and free of obstructions.	☐	☐	☐	
All labels present and legible	☐	☐	☐	

SUB-SLAB DEPRESSURIZATION SYSTEM CHECKLIST

Report No.	
Date:	Time:

CONCRETE SLAB/PIPING SYSTEM INSPECTION

ITEM/CONDITION	TRUE	FALSE	N/A	COMMENTS
All visible pipe penetrations appear properly sealed (e.g. not air leak noise).	☐	☐	☐	
There are no new significant, observable floor cracks or penetrations that may breach the floor tightness and effectiveness of the system.	☐	☐	☐	

ADDITIONAL NOTES & OBSERVATIONS

Signature:	Total Inspection Time:

CHA	**Free Product/Water Level Data**
Project Name:	Logged By:
Project Location:	Date:
Project Number:	Instrument:

Well ID	**Measuring Point** (TOC/TOR)	**Measurement Time** (HR:MIN)	**Depth to Free Product** (ft.)	**Depth to Water** (ft.)	**Comments**

Comments:

CHA	**Monitoring Well Sampling-Low Flow**	**Sample/Well ID:**

Project Number: | Sampling Date:

Project/Facility Name: | Logged By:

Project Location/Sampling Event: | Weather/Temp:

Purging/Sampling Method: P = Purging Method S = Sampling Method

P	S		
☐	☐	Submersible Pump	Model: _____
☐	☐	Peristaltic Pump	Model: _____
☐	☐	Dedicated Pump	Model: _____
☐	☐	MicroPurge Pump	Model: _____ ☐ Dedicated ☐ Disposable
☐	☐	Bailer	Type: _____
☐	☐	Other: _____	

Water Level Measurement Device:
☐ Water Level Meter Model: _____
☐ Interface Probe Model: _____

Water Quality Instrumentation:
Instrument: _____ Instrument: _____
Instrument: _____ *Calibration Records*
Instrument: _____ *Are Attached*

Time Well Unlocked: _____ Time Well Locked: _____
Headspace Reading: _____ ppm ☐N/A
☐ Flush-mount casing ☐ Stickup casing

Pump Intake Depth: _____

Controller ID#: _____

Monitoring Well Condition: A = Acceptable U = Unacceptable

A	U		A	U		A	U	
☐	☐	Well visibility	☐	☐	Surface seal	☐	☐	Total depth
☐	☐	Well Identification	☐	☐	Surface casing condition	☐	☐	Siltation level
☐	☐	Well lock/security	☐	☐	Corrosion of surface casing	☐	☐	Recharge Rate
☐	☐	Well cap & gripper plug	☐	☐	Inner Casing/Screen Integrity	☐	☐	Other: _____

Field Analysis:

Stabilization Criteria: **DO ± 10% **SEC ± 3% Turb. ± 10% ORP ± 10 mv pH ± 0.1 unit

Volume Purged (gal.)	Time	ORP/Eh (mV)	pH	Cond. (ms/cm)	Turbidity (NTU)	D.O. (mg/L)	Temp. (°C)	Other Field Data	Other Field Data	Other Field Data	Other Field Data

Field Analysis During Sample Collection:

Start Purge Time: _____ Total Vol Purged: _____ gal. Odor: _____ Purge Water Disposal Method: _____
End Purge Time: _____ Total Purge Time: _____ min Color: _____ Sheen Observed?: _____

Sampling Information: Sampling Time: _____ Laboratory: _____
Sample Analyses: _____ No. Bottles: _____

Comments/Additional Observations:

Signature(s) of Sampling Team:

APPENDIX J

Field Sampling Plan

Field Sampling Plan

Former Coyne Textile Facility
140 Cortland Avenue
Syracuse, New York

Site No. C734144

CHA Project Number: 059294.001

Prepared for Remedial Party:
Ranalli/Taylor St., LLC
P.O. Box 678
Liverpool, NY 13088

Prepared by:

300 South State Street, Suite 600
Syracuse, New York 13202
Phone: (315) 471-3920

August 2021

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LIST OF ACRONYMS & ABBREVIATIONS

BCP	Brownfield Cleanup Program
CHA	CHA Consulting, Inc.
DCE	cis-1,2-Dichloroethene
DNAPL	Dense Non-Aqueous Phase Liquid
ELAP	Environmental Laboratory Approval Program
FSP	Field Sampling Plan
HASP	Health and Safety Plan
LNAPL	Light Non-Aqueous Phase Liquid
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
PID	Photoionization Detector
QAPP	Quality Assurance Project Plan
SMP	Site Management Plan
SOP	Standard Operating Procedure
SSDS	Sub-Slab Depressurization System
SVOC	Semi-volatile Organic Compounds
TCE	Trichloroethene
TOGS	Technical and Operational Guidance Series
VOC	Volatile Organic Compounds
ZVI	Zero-Valent Iron

Ft bgs	Feet Below Ground Surface
mV	Millivolts
NTU	Nephelometric Turbidity Units

1.0 INTRODUCTION

This Field Sampling Plan (FSP) has been prepared for the Former Coyne Textile Facility (Site), located at 140 Cortland Avenue in the City of Syracuse, New York, and is to be used to facilitate field activities post-remediation as described in the Site Management Plan (SMP). The Site is a part of the New York State Department of Environmental Conservation's (NYSDEC) Brownfield Cleanup Program (BCP).

This FSP outlines the protocols which will be followed during continued monitoring of the Site post-remediation and has been prepared as Appendix J to the SMP. The post-closure activities covered by this FSP include groundwater monitoring and sub-slab soil vapor and indoor air sampling. In general, all activities will be performed in accordance with the CHA Consulting, Inc. (CHA) Standard Operating Procedures (SOPs) which are specifically identified in the text below.

2.0 GENERAL SAMPLING PROTOCOLS

The sampling approach and rationale for sample collection is described in Table 1. The Data Quality Objectives for the project and the quality assurance and quality control procedures for the project are described in the Quality Assurance Project Plan (QAPP), found in Appendix H of the SMP. Sampling activities will be conducted in a manner to protect both, workers and the general public in accordance with the Health and Safety Plan (HASP), found in Appendix F of the SMP.

2.1 SAMPLE DESIGNATION

Samples will be identified in accordance with CHA SOP#103 Sample Naming and Numbering (see Appendix A). In summary, each sample will be uniquely defined by including the media type and sequential number.

The following abbreviations will be used to identify media types:

Table 1. Sample Designation

Sample Type	Sample Nomenclature
Blind Duplicate	CHA-1-YYYYMMDD
Matrix Spike/Matrix Spike Duplicate	MS/MSD-##-YYYYMMDD
Subsurface Soil	SOIL-##-YYYYMMDD
Subsurface Soil - Sidewall	SOIL-SW##-YYYYMMDD
Subsurface Soil – Bottom	SOIL-B##-YYYYMMDD

Sample Type	Sample Nomenclature
Waste Characterization Soils	SOIL-WC##-YYYYMMDD
Groundwater – monitoring well designation	MW-##-YYYYMMDD
Trip Blank	Trip Blank-YYYYMMDD
Sub-slab Soil Vapor	SSV-##-YYYYMMDD
Indoor Air	IA-##-YYYYMMDD

Each sample container will be labelled with the following information:

- Site name
- Sample identification
- CHA project number
- Collection date/time
- Sampler's initials
- Analysis required
- Preservatives used

2.2 SAMPLING HANDLING

A new pair of disposable latex gloves will be used at each location and prior to collecting the sample. Additional glove changes will be undertaken as conditions warrant.

Sample containers will be new and delivered from the laboratory prior to the sampling event. Sample containers will come with the proper volume of chemical preservative appropriate for the type of analysis as detailed in CHA SOP#603 Appendix A).

After sample collection, the sample containers will be logged onto a chain of custody record as described in the QAPP. The sample containers will be placed on ice and/or ice packs in laboratory-supplied rigid coolers after collection and labeling. Remaining space will be filled with packing material to cushion the containers during transport or shipment.

For this project CHA staff will hand deliver the sample coolers to the Alpha Analytical Service Center located in Syracuse, New York, or coordinate with their courier service. Samples will remain under the control of CHA's field representative until relinquished to the laboratory under chain-of-custody. Samples will then be shipped to their laboratory located in Westborough, Massachusetts.

2.3 FIELD DOCUMENTATION

Pertinent field sampling information shall be recorded in a logbook or on field logs during each day of the field effort per CHA SOP#101 Field Logbook and Photographs and CHA SOP#903 Remedial Construction Oversight and Documentation. At a minimum, entries in a logbook shall include:

- Date and time of starting work
- Names of all personnel at site
- Weather conditions
- Purpose of proposed work effort
- Sampling equipment to be used and calibration of equipment
- Description of work area
- Location of work area, including map reference
- Details of work effort, particularly any deviation from the field operations plan or standard operating procedures
- Field observations
- Field measurements (e.g., photoionization detector (PID) readings)
- Field laboratory analytical results
- Daily health and safety entries, including levels of protection
- Type, number, and location of samples
- Sampling method, particularly deviations from the standard operating procedures
- Sample location and number
- Sample handling, packaging, labeling, and shipping information (including destination)

In addition to keeping logs, photographs will be taken to provide a physical record to augment the fieldworker's written observations. For each photograph taken, several items shall be recorded in the field logbooks:

- Date and time
- Name of photographer
- General direction faced
- Description of the subject

Additional protocols specific to each sampling method are presented in the following sections.

3.0 GROUNDWATER SAMPLING AND ANALYSIS PROCEDURES

Groundwater monitoring will be performed at the frequency dictated in the SMP to assess the performance of the remedial design including the source removal, contaminated soil treatment with zero-valent iron (ZVI), and the groundwater treatment with sodium permanganate. A network of monitoring wells has been installed across the site to monitor upgradient and downgradient condition of groundwater, as listed below and as shown on Figure 1.

Table 2. Monitoring Well Information

Well ID	Relative Location	Screened Interval	Elevation (Top of Riser)
MW-105S	Upgradient	8.0 – 18.0 ft bgs	391.37
MW-105D	Upgradient	20.0 – 30.0 ft bgs	391.45
MW-4	On-Site	10.0 – 20.0 ft bgs	*
MW-5A	Downgradient	11.0 – 21.0 ft bgs	*
MW-6A	Downgradient	12.0 – 22.0 ft bgs	*
MW-6B	Downgradient	28.0 – 33.0 ft bgs	*

* Will be surveyed during the first monitoring event

3.1 WATER LEVEL MONITORING

Depth to groundwater is each monitoring well is necessary to design potentiometric surface maps and identify groundwater flow direction. Water levels will be monitored using a Solinst® electronic water level meter. Depth to groundwater will be measured to the nearest 0.01 feet and recorded on the appropriate field sampling log. The water level meter will be decontaminated with Alconox phosphate-free detergent and a distilled water rinse between monitoring locations in order to prevent cross-contamination between the monitoring wells. Depth to groundwater will be used to determine the groundwater elevation using the elevation of each monitoring well riser.

3.2 WELL PURGING AND SAMPLING METHODOLOGY

The monitoring wells will be purged and sampled using low-flow sampling methodology and dedicated tubing. Low-flow purging uses a pumping mechanism that produces low-flow rates [less than 1 liter per minute (lpm) or less than 0.26 gallon per minute (gpm) that cause minimal drawdown of the static water table and usually employs a flow-through cell in which geochemical parameters are continuously monitored. These parameters may include dissolved oxygen, oxidation-reduction potential (redox), conductivity, turbidity, temperature, and pH.

The intent of this sampling protocol is to collect a representative sample from the monitoring well. A representative sample may be obtained when all the monitored chemical parameters have stabilized, thus qualitatively demonstrating that the groundwater being purged is in equilibrium (refer to Table 3). Samples are collected directly from the pumping mechanism with minimum disturbance to the aquifer groundwater. The low-flow/low volume purging method (purging to parameter stability) tends to isolate the interval being sampled, which provides more accurate water quality measurements and reduces the volume of purge water generated. This method has an advantage in that it can limit vertical mixing and volatilization of volatile organic compounds in solution within the well casing or borehole as compared to high-flow purging and sampling.

Low-flow purging and sampling is appropriate for collection of groundwater samples for all groundwater contaminants to be collected as part of the routine monitoring efforts. During low-flow purging and sampling, parameters will be monitored until a point in which they reach the stable conditions shown in the table below.

Table 3. Groundwater Sampling Stabilization Criteria

Chemical Parameter	Stabilization Criteria
Dissolved Oxygen (DO)	+/- 10%
Oxidation-Reduction Potential (redox)	+/- 10 mV
Specific Conductance	+/- 3%
pH	+/- 0.1 units
Turbidity	< 50 NTU, +/- 10%
Temperature	NA

As previously stated, sampling will occur using the same low-flow procedure. Each monitoring well will be equipped with dedicated polyethylene tubing. Non-disposable sampling equipment, such as the pumping apparatus and, flow-through cell for water quality measurements, will be decontaminated with phosphate-free detergent and a distilled water rinse between each monitoring well. For additional information on low-flow sampling methodology, see CHA SOP #317 in Appendix A.

3.3 ANALYTICAL METHODOLOGY

Site contaminants of concern were primarily VOCs, including chlorinated solvent and petroleum hydrocarbon parameters. Generally, the main constituents identified in groundwater during investigative activities included tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (DCE), vinyl chloride, and benzene. SVOCs have typically not been detected during

previous groundwater sampling events. Therefore, the analytical monitoring program will consist of the VOCs via EPA Method 8260, only.

Groundwater samples will be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory under proper chain-of-custody. Groundwater monitoring results will be compared to the Technical and Operational Guidance Series (TOGS) 1.1.1 for Ambient Groundwater Quality Class GA waters.

4.0 VAPOR SAMPLING AND ANALYSIS PROCEDURES

Sub-slab soil vapor and indoor air sampling are required once post-remedial sub-slab depressurization system (SSDS) installation is complete. Post-mitigation sampling will be conducted prior to occupancy of the building and no sooner than 30 days after commissioning of the SSDS, but if off-gassing is suspected after a review of the sampling results, further testing may be required. The post-mitigation testing will be performed during the heating season if possible. If vapors are detected indoors above guidance levels, further testing and/or corrective measures will be implemented as appropriate.

As indicated within the NYSDOH guidance document, there is the potential for interferences of site-specific and building-specific indoor air interferences caused by the off-gassing of volatile chemicals in new building materials (e.g., paints, carpets, furniture, etc.). Post-mitigation sampling will be conducted prior to occupancy of the building and no sooner than 30 days after commissioning of the SSDS, but if off-gassing of building materials is suspected after a review of the sampling results, further testing may be required. If vapors associated with on-site contaminants of concern are detected indoors above guidance levels, further testing and/or corrective measures will be implemented as appropriate.

4.1 SOIL VAPOR SAMPLING LOCATIONS

The SSDS design called for 14 sub-slab soil vapor monitoring points at various locations around the office and manufacturing warehouse sections of the building. Indoor air samples will be collected adjacent to the sub-slab vapor samples at a height of approximately 4 feet above the concrete slab. Additionally, one outdoor air sample will be collected concurrently. The locations of these points are shown in Appendix K of the SMP.

4.2 ANALYTICAL METHODOLOGY

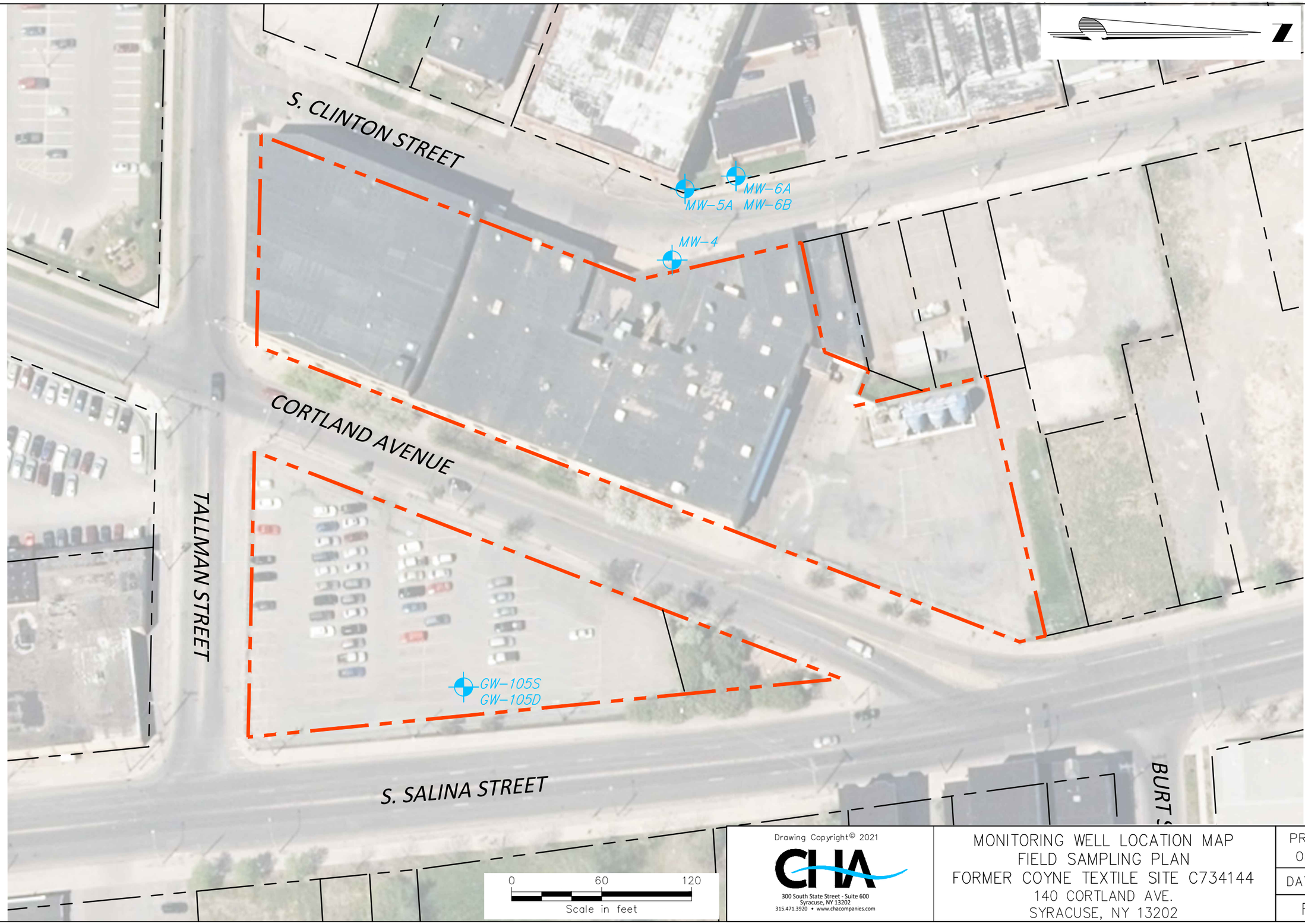
Samples will be submitted to a NYSDOH ELAP-certified laboratory under proper chain-of-custody. All samples analyzed for VOCs via EPA Method TO-15 utilizing laboratory provided certified pre-cleaned SUMMA® canisters.

Results will be compared to the NYSDOH Decision Matrices (updated May 2017) and the 95th percentile values presented in Table C.2 of the Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006.

5.0 INVESTIGATION-DERIVED WASTE

Additional investigation is not warranted at the Site at this time. However, future redevelopment of some portions of the Site may require additional investigation. Intrusive activities that generate waste soil or groundwater will be managed in accordance with the Excavation Work Plan and this FSP. It is anticipated that all soil removed from intrusive activities will be live-loaded into trucks with tight fitting covers. If the soil is wet, polyethylene liners will be installed in the truck box to prevent spillage or dripping of liquids from the contaminated soil. If live loading of soil is not feasible, soil may be stockpiled on polyethylene sheeting and covered. Gloves, personal protection equipment, sampling materials, etc. will be collected daily and disposed of as solid waste. All work will be performed in accordance with CHA SOP#507 in Appendix A.

Figures



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CHA
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MONITORING WELL LOCATION MAP
FIELD SAMPLING PLAN
FORMER COYNE TEXTILE SITE C734144
140 CORTLAND AVE.
SYRACUSE, NY 13202

PROJECT NO. 059294.001

DATE: 08/2021

FIGURE 1

File: V:\PROJECTS\ANY\K5\059294.001\CADD_ACAD\ENVP\COYNE\SMP - FIELD SAMPLING PLAN.DWG Saved: 8/24/2021 10:53:54 AM Plotted: 8/24/2021 11:03:52 AM Current User: Miller, Samantha LastSavedBy: 4187

Appendix A

Standard Operating Procedures

FIELD LOGBOOK AND PHOTOGRAPHS

A. PURPOSE/SCOPE:

To produce an accurate and reliable record of all field activities, including field observations, sample collection activities, etc.

All pertinent field survey and sampling information shall be recorded in a logbook or on field logs during each day of the field effort.

In addition to keeping logs, photographs will be taken to provide a physical record to augment the field worker's written observations. They can be valuable to the field team during future inspections, informal meetings, and hearings. Photographs should be taken with a camera-lens system having a perspective similar to that afforded by the naked eye. A photograph must be documented if it is to be a valid representation of an existing situation.

B. EQUIPMENT/MATERIALS:

- Bound Field Book (with waterproof paper) or Field Logs
- Chain-of-Custody, Other Appropriate Forms
- Indelible Ink Pens
- Digital Camera with 50 mm lens or similar.

C. PROCEDURE:

1. At a minimum, entries in a logbook shall include:
    a. Date and time of starting work
    b. Names of all personnel at site
    c. Summary of key conversations with contractors, agency representatives, etc.
    d. Purpose of proposed work effort
    e. Sampling equipment to be used
    f. Field calibration of equipment or documentation of calibration of rented equipment
    g. Description of work area
    h. Location of work area, including map reference. Document sample locations with references to fixed landmarks (e.g., 10 feet from southwest corner of building).
    i. Details of work effort, particularly any deviation from the field operations plan or standard operating procedures
    j. Field observations and field measurements (e.g., pH)
    k. Field laboratory analytical results
    l. Personnel and equipment decontamination procedures
    m. Daily health and safety entries, including levels of protection
    n. Type and number of samples

FIELD LOGBOOK AND PHOTOGRAPHS

o. Sampling method, particularly deviations from the standard operating procedures

p. Sample location and number

q. Sample handling, packaging, labeling, and shipping information (including destination)

r. Time of leaving site.

For each photograph taken, several items shall be recorded in the field logbooks:

a. Date and time – Camera set to record on photo

b. Name of photographer

c. General direction faced and description of the subject

d. Sequential number of the photograph

e. Always attempt to include an object in the photograph that helps show scale

f. Always try to shoot at approximately 50mm focal length (what human eye sees).

2. Each day's entries will be initialed and dated at the end by the author, and a line will be drawn through the remainder of the page.

D. QA/QC REQUIREMENTS:

All entries in the logbook shall be made in indelible ink. All corrections shall consist of single line-out deletions that are initialed.

The field task leader shall be responsible for ensuring that sufficient detail is recorded in the logbooks, and shall review the site logbooks daily.

E. SPECIAL CONDITIONS:

Photographs should be downloaded from the camera to the project folder and notes regarding the photographs should accompany the photos. Photographs should be no larger than 2 MB each unless they are being utilized for presentation purposes. CHA has software available to decrease file sizes if necessary.

As noted above, if a bound logbook is not used, then a field observation form must be used and information above should be captured on the form.

F. REFERENCES:

None

G. APPENDICES/FORMS:

Not Applicable

END OF SOP
Final Check by C. Burns 10/2/15

Author: Sarah Benson
Reviewer(s): Keith Cowan
Sandy Warner

SAMPLE NAMING AND NUMBERING

A. PURPOSE/SCOPE:

The success of large environmental programs is greatly affected by the efficiency of data management and analysis. When performing environmental sampling, one of the most critical steps is appropriately naming or numbering samples so that they are uniquely identified and can be distinguished from all other samples by all future users.

Some of the potential benefits that can be obtained by adopting a naming convention include the following:

a. To ensure that every sample collected at a site has a unique identifier

b. To enhance clarity in cases of potential ambiguity

c. To help avoid "naming collisions" that might occur when the data is imported into our Equis or other databases; and

d. To provide meaningful data to be used in project handovers.

Note that many of our sampling programs are performed at sites with previously established sample locations and in these cases, we would not change sample names. Additionally, this process shall be applied at larger, more complex sites, and/or sites that are required to follow a site- specific QAAP. Simpler naming conventions may be implemented for small, simple sites.

B. EQUIPMENT/MATERIALS:

- Field Logbook
- Field Sample Login Sheet
- Site Map/ Work Plan
- Sampling Forms
- Chain-of-Custody
- Sample Containers with Labels

C. PROCEDURE:

1. Each sample shall be uniquely defined by a multi-field name. In general, three fields are required: [Project # or Name] – [Media Type] – [Location Name/Sequential Number].
2. If using a site name, abbreviate to 2-3 letters. (e.g., Congress St site would be “CS”).
3. Use the following abbreviations for media types:

Subsurface Soil	SOIL
Surface Soil	SURF
Sediment	SED
Groundwater	GW
Surface Water	SW
Waste Water	WW
Soil Vapor	SV
Storm Water	STORM

SAMPLE NAMING AND NUMBERING

4. All samples collected at a site shall be numbered sequentially for each media type, regardless of the field event or project phase. The use of hyphens to separate segments of a sample name is beneficial for sample name readability. It is also beneficial to use enough leading zeros to accommodate the Sequential Number (or sys_loc_code) portion of the sample name, which will assist in sorting sample IDs in the data management program or database (see EQUIS discussion below).
5. Do not include information such as time, sample depths, etc. in the name. This information should be recorded as defined in Section F (below).
6. In no cases shall the multi-field name be longer than 30 characters, including dashes. Ensure that each name is clearly written on both the sample label as well as the Chain of Custody.
7. Do not use special characters (e.g. #, ‘, “, @, !) when naming samples. Including such characters in the Serial Number (sys_loc_codes) or Sample Number (sys_sample_codes) can be incompatible with the database.
8. For QA/QC blank samples use the following abbreviations in place of the media type:

Trip Blank	TB
Equipment Rinse (Field Blank)	FB
Duplicate	DUP
Matrix Spike	MS
Matrix Spike Duplicate	SD

For Duplicate and MS/MSD samples we need to make sure we include the parent sample name. Add the DUP, MS or MSD indicator after the Sequential Number.

For Blind Duplicate samples, use the CHA indicator in place of the Sequential Number. The location should be recorded in the field logs for our evaluation purposes. For example, a blind duplicate sample number for soil collected at the 005 location would be “CS-SOIL-CHA-1.”

You would record in the field log that the blind soil duplicate CHA-1 has SOIL-12345-005 as its parent sample.

9. Option to Include the Sample Collection Date - As an option, the date may be included in the sample name. NYS Electronic Data Deliverable guidance suggests using dates in the YYYYDDMM format. Placing the year first provides for ease of sorting data in the database:

   However, adding the date adds 9 characters to the sample name thus increasing the complexity of sample numbering. The date is captured on the Chain-of-Custody and in field records.

D. QA/QC REQUIREMENTS:

All data must be documented on field data sheets or within site logbooks.

Field personnel should verify that all sample data and supporting information in log books is correct prior to leaving the site.

SAMPLE NAMING AND NUMBERING

E. SPECIAL CONDITIONS:

NYSDEC EQUIS Considerations:

NYSDEC uses EQuIS for data management and generally requires data to be submitted in EQuIS format. EQuIS has three different sample name related fields, a sample_name, a sys_sample_code and a location_ name. Location_name will almost always be simplified to something like SW-1, GW-2 etc. and is usually the last field of the sample name.

In terms of the other two, sample_name is what we record in the field. That is limited to 30 characters of text.

The laboratory generates the sys_sample_code by taking the sample_name field and adding another qualifier, such as the sample delivery group or work order number. EQuIS requires that the sys_sample_code field be unique within a database. This is limited to 40 characters of text so it typically will be the sample name plus up to 10 characters.

It is recommended to keep the CHA sample name as short as possible to work with the EQuIS format. The basic sample names identified above are 14 to 17 characters long. If the optional date format is used, sample names will be 23 to 26 characters which is near the limit for what EQuIS can accommodate (and you may have issues physically fitting the sample names legibly into the COC form).

F. REFERENCES:

NYSDEC, DER-10, Technical Guidance for Site Investigation and Remediation, May 2010, http://www.dec.ny.gov/docs/remediation_hudson_pdf/der10.pdf

NYSDEC, Electronic Data Delivery Manual, January 2013, http://www.dec.ny.gov/docs/remediation_hudson_pdf/eddmanual.pdf

New Jersey Department of Environmental Protection, August 2005, Field Sampling Procedures Manual, Chap. 6, http://www.nj.gov/dep/srp/guidance/fspm/

G. APPENDICES/FORMS:

Not Applicable

END OF SOP

Final Check by C. Burns 12/2/15

LOW-FLOW GROUNDWATER PURGING/SAMPLING

A. PURPOSE/SCOPE:

Low-flow purging is purging using a pumping mechanism that produces low-flow rates [less than 1 liter per minute (lpm) or less than 0.26 gallon per minute (gpm)] that cause minimal drawdown of the static water table and usually employs a flow cell in which geochemical parameters are continuously monitored. These parameters may include dissolved oxygen content, oxidation-reduction potential (redox), conductivity, turbidity, and pH.

The intent of this sampling protocol is to collect a representative sample from the monitored groundwater zone. A representative sample may be obtained when all the monitored chemical parameters have stabilized, thus qualitatively demonstrating that the groundwater being purged is in equilibrium (refer to Table 3). Samples are collected directly from the pumping mechanism with minimum disturbance to the aquifer groundwater. The low-flow/low volume purging method (purging to parameter stability) tends to isolate the interval being sampled, which provides more accurate water quality measurements and reduces the volume of purge water generated. This method has an advantage in that it can limit vertical mixing and volatilization of volatile organic compounds in solution within the well casing or borehole as compared to high-flow purging and sampling.

An overview of this methodology is presented in Puls and Barcelona, 1996. Low-flow purging and sampling is appropriate for collection of groundwater samples for all groundwater contaminants, including inorganic compounds, metals, pesticides, PCBs, volatile and semi-volatile organic compounds (VOCs and SVOCs), other organic compounds, radiochemical and microbiological constituents. This method is not applicable to the collection LNAPL or DNAPL.

B. EQUIPMENT/MATERIALS:

- Inertial pump
- Submersible pump
- Disposable bailers
- Generator
- Sample bottles
- Bailing twine and rope
- Field analyses meters
- Sampling gloves
- Water level meters
- Filtration system
- 2-Inch grundfos rediflow pump and controller
- Well sampling forms

Depending on the purging method to be used, there are specific equipment limitations. Table 1 provides a description of the various methodologies and their applicability. The proper selection of sampling devices or pumps is critical to the quality and representation of the sampling results. The following table provides a summary of the acceptable sampling methods for the various compounds of concern.

LOW-FLOW GROUNDWATER PURGING/SAMPLING

Table 1
Acceptable Sampling Methods for Compounds of Concern

Method	VOCs	Semi-VOCs	Metals and Inorganics	Petroleum Hydrocarbons		General Chemistry
				C3-C16	C16+	
Peristaltic Pump	X	1	3	X	1	2
Centrifugal Pump	2	3	3	2	2	3
Submersible Impeller Pump (w/ controller)	2	3	3	2	3	3
Bailer	2	2	2	2	2	2
Bladder Pump	**3**	**3**	**3**	**3**	**3**	**3**
DPIS	3	3	2	2	2	2
Diffusion Sampler	2	2	X	2	2	X

1 - Not recommended, better methods exist
2 - Useful with limitations
3 - Recommended method
X – Unacceptable
Note: Centrifugal pump - assumed at a low-flow rate (no greater than 1 Lpm)

C. PROCEDURE:

1. The wells will be sampled in order from the least contaminated well to the most contaminated well.
2. Using a decontaminated measurement probe, determine the water level in the well; then calculate the fluid volume in the casing.
3. Setting up the Pump:
   a. Dedicated Systems

      Installation of any device into a well disturbs the stratification typically exhibited in a well due to laminar flow of groundwater in the well. Insertion also potentially mobilizes suspended solids in the water column due to disturbance of settled and solids in the casing and agitation of water in the filter pack. Dedicated systems result in lower initial turbidity values and lower purge volumes to achieve stabilized indicator parameter readings, and should be considered when a well will be sampled multiple times.

   b. Portable Systems

      If portable systems are used, they must be placed carefully into the well and lowered into the screen zone as slowly as possible to avoid disturbance of the groundwater resulting in non-equilibrium conditions. As a result, longer purge times and greater purge volumes may be necessary to achieve indicator parameter stabilization. In general, this may require that after installation, the portable pump should remain in place for a minimum of 1-2 hours to allow settling of solids and re-establishment of horizontal flow through the screen zone. If initial turbidity readings are excessive (>50 NTU), pumping should cease and the well should rest for another 1-2 hours before initiating pumping again. In wells set in very fine-grained formations, longer waiting periods may be required.

LOW-FLOW GROUNDWATER PURGING/SAMPLING

4. The flow rate used during purging must be low enough to avoid increasing the water turbidity. The following measures should be taken to determine the appropriate flow rate:
   a. The flow rate shall be determined for each well, based on the hydraulic performance of the well.
   b. The flow must be adjusted to obtain stabilization of the water level in the well as quickly as possible.
   c. The maximum flow rate used should not exceed 1 liter per minute (0.26 gpm).
   d. Once established, this rate should be reproduced with each subsequent sampling event.
   e. If a significant change in initial water level occurs between events, it may be necessary to re-establish the optimum flow rate at each sampling event.
5. Water Level Monitoring:
   a. Should not fluctuate more than 0.1 meters (~4 inches).
6. Measurement of indicator parameters (Dissolved oxygen content, redox potential, specific conductance, temperature and pH) is required. Continuous monitoring of water quality indicator parameters is used to determine when purging is competed and sampling should begin. Stabilized values, based on selected criteria listed in Table 2 should be met prior to sampling. The use of an in-line flow cell (closed) system is recommended for measuring indicator parameters, except for turbidity.

   For turbidity measurement, a separate field nephalometer should be used. Indicator parameter collection is more important when low-flow purging is used compared to the high-flow purging method. Generally, measurements are taken every 3 to 5 minutes and water chemistry parameters are considered to be stable when they are within the following ranges for three (3) consecutive readings:

Table 2
Stability Criteria for Low-Flow Purging

Constituent	Criteria
Dissolved Oxygen Content (DO)	± 10%
Oxidation-Reduction Potential (redox)	± 10 mv
Specific Conductance	± 03% of reading
pH	± 0.1 units
Turbidity	± 10%
Temperature	NA

   Turbidity should be below 50 NTU, if possible. If sample turbidity can not be reduced below 50 NTU, a field filtered sample shall be collected for metals analysis in addition to an unfiltered sample. Record these readings on the well sampling log.

7. The order in which samples are to be collected is as follows:
   - Volatile Organic Compounds (VOCs)
   - Semi-Volatile Organic Compounds (SVOCs)

LOW-FLOW GROUNDWATER PURGING/SAMPLING

- Purgeable organic carbon (POC)
- Purgeable organic halogens (POX)
- Total organic carbon (TOC)
- Total organic halogens (TOX)
- Extractable organics
- Total metals
- Dissolved metals
- Phenols
- Cyanide
- Sulfate and chloride
- Turbidity
- Nitrate and ammonia
- Radionuclides

8. When collecting aliquots for analysis of volatile organic compounds, make absolutely certain that there are no bubbles adhering to the walls or the top of the VOA container.
9. Add appropriate preservatives to samples as described in SOP #605.
10. Label the sample containers with all necessary information and complete all chain-of-custody documents and seals.
11. Place the properly labeled and sealed sample bottles in a cooler with ice and maintain at 4oC for the duration of the sampling and transportation period. Do not allow samples to freeze.

D. QA/QC REQUIREMENTS:

To the extent possible, all samples should be collected using the same type of equipment and in the same manner to ensure comparability of data.

E. SPECIAL CONDITIONS:

Because the methodology requires that disturbance to the water column in the well be minimized, the same pumping device used for purging should be used for sampling.

Sample collection will be performed utilizing either an inertial pump system or disposable bailer. If the inertial pump system is used, samples will be obtained through the dedicated polyethylene tubing while maintaining a low-flow. Should disposable bailers be utilized, the sampling will be performed as follows:

Attach a new bailer line to the disposable bailer equipped with a single check valve. Check the operation of the check valve assembly to confirm free operation. Lower the single check valve bailer slowly into the well until it contacts the water surface. Then lower the bailer just below the water surface with a minimum of disturbance. When filled with groundwater, slowly raise the bailer to the surface. Discharge the first bailer to the ground. Tip the bailer to allow the water to slowly discharge from the top and to flow gently down the inside of the sample bottle with minimum entry turbulence and aeration.

LOW-FLOW GROUNDWATER PURGING/SAMPLING

Step 4 (*samples collected*) can be replaced if purging and sampling is being performed with a Grundfos Rediflow pump. In this case, after well purging was completed, the discharge rate for the pump would be reduced to approximately 40 ml/minute. Sampling can then proceed as described above.

F. REFERENCES:

Low-Flow (Minimal Drawdown) Ground-Water Samp*ling Procedures"* by Robert Puls and Michael J. Barcelona dated April 1996.

G. APPENDICES/FORMS:

Well Sampling Forms

END OF SOP
Final Check by C. Burns 11/4/15

Author: Meghan Platt, P.E.
Reviewer: Scott Smith, P.E.

RESIDUALS MANAGEMENT

A. PURPOSE/SCOPE:

The following standard operating procedure (SOP) presents a description of the methods generally employed for the management of residual waste. Field personnel are responsible for ensuring that state-specific standards/guidelines/regulations are followed, where applicable. In addition, field personnel are responsible for coordination efforts associated with the waste disposal facility, if known.

Improper handling and storage of residual waste can result in leaks and spills and pose a serious threat to the quality of the environment. Timely characterization and disposal of residual wastes shall be conducted in order to not exceed onsite quantity and/or storage regulations.

B. EQUIPMENT/MATERIALS:

Off-Site transportation and disposal of residual waste will be performed by a licensed waste hauler under the direction of CHA. The company will supply the necessary equipment and materials needed to remove the residual waste from the Site and transport it to an approved waste disposal facility.

The field geologist/engineer will obtain the necessary sample bottles with the associated preservatives, if required, from the analytical laboratory. See SOP #603, Sample Containers, Volumes, Preservations and Holding Times, for additional information on these topics. In addition, if a flame ionization detector (FID), photoionization detector (PID) and/or gas meter will be used to screen waste containers soils for the presence of volatile organic compounds (VOCs).

All other equipment required during transportation/disposal activities is the responsibility of the Contractor (waste hauler).

C. PROCEDURE:

1. During remedial activities all residual waste, including, but not limited to, soil cuttings, decontamination wash/rinse water, purge water and personal protective equipment (PPE) shall be containerized in United States Department of Transportation (USDOT) approved 55-gallon drums or similar waste containers, unless the Work Plan indicates otherwise. Each drum shall contain similar materials/matrices (e.g., soil, water, PPE).
2. Label each waste container using a permanent marker and weather proof label with the following:
    a. Description of the container contents
    b. Site name and address
    c. Name of Site contact and associated phone number

    Waste container labels shall be legible and easily understood by those unfamiliar with the Site.
3. Upon completion of remedial activities, the field geologist/engineer will conduct waste characterization of the residual waste prior to off-Site transportation and disposal. Depending upon the type of waste present, various waste disposal facilities may have different testing requirements. CHA will complete the required analytical testing. Upon receipt of analytical data and coordination with the disposal facility, the field geologist/engineer will supervise the removal of the waste from the Site.

RESIDUALS MANAGEMENT

4. Waste containers shall be transported and stored in a secure location on-Site. All waste containers shall be located in one location, if possible.
5. If waste containers are stored for a period of time prior to collecting waste characterization samples, all waste containers shall be inspected for signs of the potential presence of explosive/flammable gases and/or toxic vapors. These signs include pressurization (bulging/dimples); crystals formed around the drum opening; leaks, holes, stains; labels, marking; composition and type (steel/poly and open/bung); condition, age, rust; and sampling accessibility. Drums showing evidence of pressurization and crystals shall be further assessed to determine proper drum opening techniques.
6. All metal waste containers not in direct contact with the earth shall be grounded.
7. Open the waste container with spark resistant tools (e.g., brass, beryllium).
8. Screen the waste containers for explosive gases and/or toxic vapor with appropriate air monitoring instruments as necessary.
9. Obtain the necessary sample bottles with the associated preservatives, if required, from the analytical laboratory. See SOP #603, Sample Containers, Volumes, Preservations and Holding Times, for information regarding field preservation of sample containers, if necessary.
10. Each matrix (e.g., soil, water) shall be sampled for waste characterization purposes. The field geologist/engineer shall determine the quantity of similar waste characterization samples to be collected from the waste containers in conjunction with the project manager and/or waste disposal facility. Containers with similar wastes (e.g., soil, water) generated from one area of the site may require only one composite sample from each of the waste containers. This determination shall also be made in conjunction with the project manager and/or waste disposal facility.
11. Use a decontaminated spade or shovel to collect representative solid waste samples from each waste container or use a beaker, bailer or similar mechanism to collect representative liquid waste samples from each waste container.
12. Immediately place sample in the pre-preserved sample containers and close the waste container(s).
13. Chill all samples to 4^{o}C from sample collection until laboratory analysis.
14. Package and ship samples per SOP #607.

D. QA/QC REQUIREMENTS:

This section includes QA/QC requirements associated with tank closure activities. The following general requirements apply to this SOP:

1. All data must be documented on field data sheets or within site logbooks.
2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan.
3. Equipment checkout and calibration activities must occur prior to sampling/operation, and must be documented.

RESIDUALS MANAGEMENT

E. SPECIAL CONDITIONS:

In no case, will CHA be considered the generator of the waste. The site owner shall always take responsibility for waste disposal. Additionally, CHA may only act as agent for the owner relative to signing manifests with specific permission from CHA's in-house counsel. In most every case, the owner should sign waste manifests.

F. REFERENCES:

United States Environmental Protection Agency, Science and Ecosystem Support Division, Waste Sampling Standard Operating Procedure: http://www.epa.gov/region4/sesd/fbqstp/Waste-Sampling.pdf

G. APPENDICES/FORMS:

Not Applicable

END OF SOP

Final Check by C. Burns 10/26/15

Author: Meghan Platt, P.E.
Reviewer: Scott Smith, P.E.

SAMPLE CONTAINERS, VOLUMES, PRESERVATIONS AND HOLDING TIMES

A. PURPOSE/SCOPE:

The following standard operating procedure (SOP) presents general guidelines for sample containers, volumes, preservations and holding times associated with air, water and soil/sediment samples. Field personnel are responsible for ensuring that state-specific standards/guidelines/regulations are followed, where applicable.

Improper preserving, storing and handling of air, water and soil/sediment samples are critical if the integrity of the samples are to be maintained. Samples collected in the field may undergo biological, chemical or physical changes following removal from their environment. In order to minimize those changes, many samples must have preservatives in the form of strong acids or bases added prior to delivery to the laboratory. If samples are to be collected as part of a government program, the governing agency typically must be notified 30 days prior to sample collection.

B. EQUIPMENT/MATERIALS:

Pre-cleaned sample containers along with associated preservations within the sample containers will be provided to CHA from the analytical laboratory. The field geologist/engineer will provide the necessary personal protective equipment to place samples collected within the appropriate sample containers per SOPs 300 through 417. However, if field preservation is required the following equipment and materials shall be obtained:

- Hydrochloric (HCl) Acid Reagent A.S.C. 38%
- Nitric (HNO3) Acid Reagent A.S.C. 71%
- Sodium Hydroxide (NaOH) 97%
- 10 mL glass pipettes
- Narrow range (0-3 and 12-14) pH paper
- Nitrile gloves

C. PROCEDURE:

1. Review Table 1 which details typical parameters of interest at environmental sites and the associated methods, preservation, container type, holding time and required sample volume.
2. Obtain pre-cleaned and pre-preserved sample containers from the laboratory. If pre-preserved sample containers were provided skip to Step 7; if not proceed to Step 3.
3. Put on a clean pair of nitrile gloves.
4. In a clean, non-dusty environment, remove the cap of the sample container.
5. Using a clean, 10 mL glass pipette draw the required amount of acid or base and insert into the sample container.
6. Volatile Organic Compounds – 2 mL of HCl acid (water samples).
7. Total and Dissolved Metals (including mercury) – 5 mL Nitric acid (water samples).
8. Cyanide – 15-20 Sodium Hydroxide pellets (water samples).

9. Chemical Oxygen Demand, Oil and Grease, Organic Carbon, Phenolics, Total Dissolved Phosphorous, Hydrolyzable Phosphorus, Ammonia, Nitrate and Nitrite – 5 mL Sulfuric acid (water samples).
10. Immediately replace and tighten the sample container cap.
11. Collect sample using equipment and procedures outlined in other SOPs as appropriate. The volume of the sample collected shall be sufficient to conduct the analysis required, as well as associated quality assurance/quality control samples (QA/QC). QA/QC samples shall be collected in accordance with SOP 605.
12. Place samples immediately in the pre-preserved sample containers.
13. Chill all samples to 4ºC from sample collection until laboratory analysis.
14. Package and ship samples per SOP #607.

D. QA/QC REQUIREMENTS:

This section includes QA/QC requirements associated with sample containers, volumes, preservations, and holding times. The following general requirements apply to this SOP:

1. All data must be documented on field data sheets or within site logbooks.
2. All instrumentation must be operated in accordance with operating instructions as supplied by the manufacturer, unless otherwise specified in the work plan.
3. Equipment checkout and calibration activities must occur prior to sampling/operation, and must be documented.
4. QA/QC samples shall be collected in accordance with SOP 605.

The following procedure shall be conducted to provide a QA/QC check of water (aqueous) samples to ensure the samples were preserved to the proper pH prior to shipping for laboratory analysis.

Volatile Organic Compounds:

1. Collect one additional VOA vial at every third aqueous sampling location.
2. Fill the extra vial with the sample.
3. Using the extra VOA vial, remove the cap and using a clean, 10 mL glass pipette extract approximately 1 mL of water.
4. Place two drops of the water on a 1-inch strip of 0-3 range pH paper.
5. Compare pH strip's color while wet with that of the color key included on the pH paper container.
6. If pH is not less than 2, add additional HCL to the remaining 3 VOA vials prior to collecting the sample.
7. Discard the vial used to check the pH.

SAMPLE CONTAINERS, VOLUMES, PRESERVATIONS AND HOLDING TIMES

Total and Dissolved Metals, Mercury, Ammonia, Nitrate plus Nitrite, Total Dissolved Phosphorus, COD, Oil & Grease, Organic Carbon, Phenolics

1. Collect sample and tightly reseal the cap.
2. Agitate the sample by gently shaking the sample bottle to mix the acid and water.
3. Remove the cap and using a clean, 10 mL glass pipette extract approximately 1 mL of sample.
4. Place approximately two drops of sample on a 1 inch strip of 0-3 range pH paper.
5. Compare pH strip's color while wet with that of the color key included on the pH paper container.
6. If pH is not less than 2, add appropriate additional Sulfuric Acid to the sample using a clean pipette.
7. Recheck sample using steps 2 through 6 until sample pH is less than 2.

Cyanide

1. Collect sample and tightly reseal the cap.
2. Agitate the sample by gently shaking the sample bottle until the NaOH pellets are dissolved.
3. Remove the cap and using a clean 10 mL glass pipette extract approximately 1 mL of sample.
4. Place approximately two drops of sample on a 1-inch strip of 12-14 range pH paper.
5. Compare pH strip's color while wet with that of the color key included on the pH paper container.
6. If pH is not greater than 12, add additional NaOH to the sample using standard procedures.
7. Recheck sample using steps 2 through 6 until sample pH is greater than 12.

E. SPECIAL CONDITIONS:

Not Applicable

F. REFERENCES:

Alpha Analytical Aqueous and Soil/Solid Reference Guides.

G. APPENDICES/FORMS:

Table 1 Laboratory Analysis: Summarizing parameters, methods, preservations, container type, holding times and minimum sample volumes are included as an attachment to this SOP.

END OF SOP
Final Check by C. Burns 10/27/15

Table 1

Laboratory Analysis	EPA Method	Standard Method and/or SW846 Method	Preservation	Container	Holding Time	Minimum Volume
WATER						
Acid Soluble & Insoluble Sulfide	-----	9030B	Cool to 4 deg C No Headspace	P or G	7 Days	8 oz.
Acidity as CaCO3	305.1	2310B	Cool to 4 deg C	P or G	14 Days	100 mL
Alkalinity	-----	2320B	Cool to 4 deg C	P or G	14 Days	100 mL
Alkalinity as CaCO3	310.1	2320B	Cool to 4 deg C	P or G	14 Days	100 mL
Ammonia	350.2/.3	4500-NH3 B,E	Cool to 4 deg C, H2SO4 to pH<2	P or G	28 Days	400 mL
Aromatic Hydrocarbons	602	8021B	1:1 HCl to pH <2, Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present	G, Vial screw cap with center hole Teflon- faced silicone septum	14 Days	40 mL
Biochemical Oxygen Demand	405.1	5210B	Cool to 4 deg C	P or G	48 Hrs.	500 mL
Bromide	300	-----	None	P or G	28 Days	250 mL
Calcium	-----	3120B	HNO3 to pH<2	P or G	6 Months	100 mL
Calcium- Hardness	200.7	3111B	HNO3 to pH<2	P or G	6 Months	100 mL
Carbamates	531.1	-----	Cool to 4 deg C, 0.08% Na2S2O3 if residual chlorine present	G, screw cap Teflon faced silicone septum	14 Days	100 mL mL
Carbonaceous BOD	-----	5210B	Cool to 4 deg C	P or G	48 Hrs.	1000 mL
Chloride	300	4500-CL D 4110	Cool to 4 deg C	P or G	28 Days	100 mL
Chloride, Residual Disinfectant	-----	4500Cl-G	Cool to 4 deg C	P or G	Analyze Immediately	200 mL
COD	410.4	5220D	H2S04 to pH<2, Cool to 4 deg C	P	28 days	250 mL
Color	-----	2120B	Cool to 4 deg C	P or G	24 Hrs	100 mL
Conductivity	-----	2510B	Cool to 4 deg C	P or G	28 Days	100 mL
Cyanide	335.4	4500-CN C&E	Cool to 4 deg C NaOH pH>12	P or G	14 Days	250 mL
Cyanide	335.2	9010B, 9012A, 9014	Cool to 4 deg C, NaOH to pH>12 0.6 g ascorbic acid if residual chlorine present	P or G	Sulfide absent, 14 days; sulfide present 24 Hrs	250 mL
Cyanide, Amenable	335.1					
Dioxin	-----	8280A	Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present	G, Amber Teflon-lined screw cap	7 days until extraction 40 days after extraction	1000 mL
DRO	-----	8015B	Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present	G, Amber Teflon-lined screw cap	7 days until extraction 40 days after extraction	1000 mL
Escherichia Coli	-----	9222B	0.008% Na2S203 if residual chlorine present 0.3 mL/125 mL 15% EDTA if > 0.01 mg/L heavy metals	Sterile P or G	30 Hrs. for Drinking Water 6 Hrs. for Waste Water	125 mL
Extractable Org. Compounds			Cool to 4 deg C, Store in dark	G, Amber Teflon-lined screw cap	*7 days	4000 mL

Table 1

Laboratory Analysis	EPA Method	Standard Method and/or SW846 Method	Preservation	Container	Holding Time	Minimum Volume
Fecal Coliform	-----	9222B or D	0.008% Na2S203 if residual chlorine present 0.3 mL/125 mL 15% EDTA if > 0.01 mg/L heavy metals	Sterile P or G	30 Hrs. for Drinking Water 6 Hrs. for Waste Water	125 mL
Fecal Streptococci	-----	9230C	Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present	Sterile P or G	30 Hrs. for Drinking Water 6 Hrs. for Waste Water	125 mL
Fluoride	300	4500 F-B,C S	Cool to 4 deg C	P or G	28 Days	300 mL
Foaming Agents (MBAS)	-----	5540C	Cool to 4 deg C	P or G	48 Hrs	250 mL
Gases	-----	3810	Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present 1:1 HCl to pH <2	G, Vial screw cap with center hole Teflon- faced silicone septum	7 days without HCl 14 days with HCl	40 mL
GRO	-----	8015B	1:1 HCl to pH <2, Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present	G, Vial screw cap with center hole Teflon- faced silicone septum	7 days w/o HCl 14 days w/HCl	40 mL
Hardness			HNO3 to pH<2	P	6 months	1000 mL
Heterotrophic Plate Count	-----	9215B	Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present	Sterile P or G	30 Hrs. for Drinking Water 6 Hrs. for Waste Water	125 mL
Hexavalent Chromium	7196A	3500Cr-D	Cool to 4 deg C	P	24 hours	500 mL
HPLC (Explosive)	------	8330	Cool to 4 deg C	G, Amber Teflon-lined screw cap	7 days until extraction 40 days after extraction	1000mL
HPLC (Explosive)	------	8310	Cool to 4 deg C	G, Amber Teflon-lined screw cap		1000mL
Mercury	-----	7470A	Cool to 4 deg C	P or G	28 Days	8 oz.
Metals	200.7	-----	HNO3 to pH<2	P	6 Months	100 mL
Nitrate	300	-----	Cool to 4 deg C	P or G	48 Hrs.	100 mL
Nitrate (Chlorinated)	353.2	4500-NO3 F	Cool to 4 deg C	P or G	48 Hrs	250 mL
Nitrate (Non- chlorinated)	353.2	4500-NO3 F	H2SO4 to pH<2, Cool to 4 deg C	P or G	14 Days	250 mL
Nitrite	300, 353.2, 354.1	4500-NO3 D	Cool to 4 deg C	P or G	48 Hrs	100 mL
Odor	-----	2150B	Cool to 4 deg C	G only	24 Hrs	200 mL
Oil and Grease		1664	HCl to pH<2, Cool to 4 deg C	G, Amber Teflon-lined screw cap	28 days	1000 mL
Organic Nitrogen	351.1	-----	Cool to 4 deg C, H2SO4 to pH<2	G	28 Days	500 mL

Table 1

Laboratory Analysis	EPA Method	Standard Method and/or SW846 Method	Preservation	Container	Holding Time	Minimum Volume
Organochlorine Pesticides/PCB	608	8081A,8082	Cool to 4 deg C 0.008% $Na_2S_2O_3$ if residual chlorine present If aldrin is to be determined bind to pH 5-9.	G, Amber Teflon-lined screw cap	7 days until extraction 40 days after extraction	1000 mL
Ortho Phosphate	300	4500 P-E	Cool to 4 deg C	P or G	48 Hrs	50 mL
Orthophosphate	365.2	-----	Filter immediately, Cool to 4 deg C	P or G	48 Hrs.	50 mL
pH, Hydrogen ion	-----	4500-H-B	Cool to 4 deg C	P or G	Analyze Immediately	25 mL
Phenols	420.1	9065, 510ABC	Cool to 4 deg C, H_2SO_4 to pH<2	G	28 Days	500 mL
Pseudomanas Aeruginosa	-----	9213E	Cool to 4 deg C 0.008% $Na_2S_2O_3$ if residual chlorine present	Sterile P or G	30 Hrs. for Drinking Water 6 Hrs. for Waste Water	125 mL
Purgeable Halocarbons	601	8021B	Cool to 4 deg C 0.008% $Na_2S_2O_3$ if residual chlorine present	G, Vial screw cap with center hole Teflon- faced silicone septum	14 Days	40 mL
Radiological	-----	-----	HNO_3 to pH<2	P or G	6 Months	100 mL
Residue- Settleable (SS)	160.5	-----	Cool to 4 deg C	P or G	48 Hrs.	1000 mL
Residue-filtered (TDS)	160.1	-----	Cool to 4 deg C	P or G	7 Days	100 mL
Residue-non- filtered (TSS)	160.2	-----	Cool to 4 deg C	P or G	7 Days	100 mL
Residue-Total Volatile Solids	160.4	2540 E	Cool to 4 deg C	P or G	7 Days	100 mL
Salinity	-----	2520 C	Cool to 4 deg C	G	28 Days	100 mL
Semivolatile Organic Compounds (Unregulated)	525.2	-----	If residual chlorine is present, add 40-50 mg Sodium Thiosulfate. If not chlorinated, add 6N HCl to pH<2 Cool to 4 deg C	G, Amber Teflon-lined screw cap	7 Days for extraction, 30 after extraction	1000 mL
Semivolatile Organics	625	8270C	Cool to 4 deg C 0.008% $Na_2S_2O_3$ if residual chlorine present	G, Amber Teflon-lined screw cap	7 days for extraction 40 days after extraction	1000 mL
Silica	200.7	-----	Cool to 4 deg C	P only	7 Days	50 mL
Specific Conductance	120.1	-----	Cool to 4 deg C	P or G	28 Days	100 mL
Sulfate	300	4500-SO_4	Cool to 4 deg C	P or G	28 Days	50 mL
Sulfate	375.4	-----	Cool to 4 deg C	P or G	28 Days	50 mL
Sulfide	376.2	9030 B, 4500S2-AD	Cool to 4 deg C, add zinc plus NaOH to pH>9	P or G	7 Days	50 mL
Sulfite (SO_3)	377.1	-----	None Required	G, Bottle and Top	Analyze immediately	50 mL
Surfactants (MBAS)	425.1	-----	Cool to 4 deg C	P or G	48 Hrs.	250 mL

Table 1

Laboratory Analysis	EPA Method	Standard Method and/or SW846 Method	Preservation	Container	Holding Time	Minimum Volume
TDS			Cool to 4 deg C	P	7 days	500 mL
Temperature	-----	2550B	None	P or G	Analyze Immediately	1000 mL
Temperature	170.1	-----	None Required	G, Bottle and Top	Analyze immediately	1000 mL
Total Kjeldahl Nitrogen	353.3/.1	4500Norg-C	H2S04 to pH<2 , Cool to 4 deg C	P	28 days	250 mL
Total Coliform	-----	9221D	0.008% Na2S203 if residual chlorine present 0.3 mL/125 mL 15% EDTA if > 0.01 mg/L heavy metals	Sterile P or G	30 Hrs. for Drinking Water 6 Hrs. for Waste Water	125 mL
Total Dissolved Solids	160.1	2540C	Cool to 4 deg C	P or G	7 Days	100 mL
Total Hardness	130.2 , 200.7	-----	HNO3 to pH<2 H2SO4 to pH<2	P or G	6 Months	100 mL
Total Kjeldahl Nitrogen	351.3	-----	H2SO4 to pH<2	P or G	28 Days	500 mL
Total Metals	200.7 200.8	6010B, 6020, 7000A	HNO3 to pH<2	P	6 months (Hg 28 days)	500 mL
Total Organic Carbon (TOC)	415.1	9060, 5310C	H2SO4 to pH<2, Cool to 4 deg C	G, Amber Teflon-lined screw cap	28 days	80 mL
Total Organic Halides		5320B	1N H2SO4 to pH<2	P or G	28 Days	50 mL
Total Phosphorus	365.2	-----	Cool to 4 deg C, H2SO4 to pH<2	G	28 Days	50 mL
Total Recoverable Oil & Grease	413.1,166 4A	-----	Cool to 4 deg C, HCL or H2SO4 to pH<2	G	Petroleum Based 3 Days; Non-Petroleum Based 24 hours	1000 mL
Total-Residue (TS)	160.3	2540B	Cool to 4 deg C	P or G	7 Days	100 mL
Turbidity	180.1	2130B	Cool to 4 deg C	P or G	48 Hrs	100 mL
Volatile Organics	624	8260B	1:1 HCl to pH <2, Cool to 4 deg C 0.008% Na2S2O3 if residual chlorine present	G, Vial screw cap with center hole Teflon-faced silicone septum	7 days w/o HCl 14 days w/HCl	40 mL
Volatiles (Regulated)	524.2	-----	Cool to 4 deg C HCl to pH<2	G, Vial screw cap with center hole Teflon-faced silicone septum	14 Days	60-120 mL
SOIL						
Acid Soluble & Insoluble Sulfide	-----	9030B	Cool to 4 deg C, no headspace	P or G	7 Days	8 oz.
Amenable Cyanide	-----	9213	Cool to 4 deg C	P or G	14 Days	4 oz.
Bromide	-----	9211	Cool to 4 deg C	P or G	28 Days	8 oz.
Cation - Exchange Capacity	-----	9080, 9081	None	P	-----	8 oz.
Chloride	-----	9212, 9056, 9253	None	P or G	28 Days	8 oz.
Chlorinated Herbicides	-----	8151A	Cool to 4 deg C	G, wide mouth, teflon liner	14 Days	8 oz.
Corrosivity pH Waste>20% water	-----	9040B	Cool to 4 deg C	P	Analyze Immediately	4 oz.

Table 1

Laboratory Analysis	EPA Method	Standard Method and/or SW846 Method	Preservation	Container	Holding Time	Minimum Volume
Corrosivity Toward Steel	-----	1110	Cool to 4 deg C	P	14 Days	4 oz.
Cyanide		9010B, 4500CN	Cool to 4 deg C	G, Amber	14 Days	4 oz
Dioxin	-----	8280A	Cool to 4 deg C	G	14 Days	8 oz.
DRO	-----	8015B	Cool to 4 deg C	G, Amber	14 Days	4 oz.
Extractable Organic Compounds			Cool to 4 deg C, Store in dark	G	14 days	8 oz
Extractable Sulfide	-----	9031	Cool to 4 deg C, fill top of sample with 2N Zinc Acetate until moistened	P or G	7 Days	8 oz.
Fluoride	-----	9214	None	P	28 Days	8 oz.
Gases	-----	3810	Cool to 4 deg C	G, Amber	14 Days	8 oz.
Grain Size			N/A	G	N/A	8 oz
GRO	-----	8015B	Cool to 4 deg C, check state regulations for proper preservative. NJ (methanol), PA (encore samplers) NY (cool to 4 deg C).	G, Amber VOA vial	14 Days	15 Grams
HPLC (PAH)	-------	8310	Cool to 4 deg C	G, Amber Teflon-lined screw cap	14 days until extraction 40 days after extraction	4 oz.
Ignitability	-----	1010	None	P or G	None	8 oz.
Ignitability of Solids		1030	None	P or G	None	8 oz.
Mercury	245.1	7471A	Cool to 4 deg C	G, Amber	28 Days	4 oz.
Metals	-----	6010B, 6020, 7000A	Cool to 4 deg C	G, Amber	6 Months	8 oz.
Moisture Content			Store in airtight jar 3-30 deg C	G	N/A	8 oz
Nitrate	-----	9210	Cool to 4 deg C	P or G	48 Hrs	8 oz.
Oil & Grease (Sludge, Sludge- Hem)	-----	9071B	Cool to 4 deg C	G	28 Days	8 oz.
Organochlorine	-----	8081A	Cool to 4 deg C	P or G	14 Days	8 oz.
Paint Filter Liquids Test	-----	9095A	Cool to 4 deg C	P or G	-----	8 oz.
PCBs	-----	8082	Cool to 4 deg C	G, Amber Teflon-lined screw cap	14 Days	4 oz.
pH	-----	9045C	Cool to 4 deg C	G, Amber	Analyze Immediately	4 oz.
pH, Soil and Waste	-----	9045A	Cool to 4 deg C	G	Analyze Immediately	8 oz.
Phenol	-----	9065, 9066, 9067	Cool to 4 deg C	G, Amber	28 Days	4 oz.
Radiological	-----	-----	Cool to 4 deg C	G	6 Months	8 oz.
Reactivity Cyanide	-----	SW-846 7.3.3.2	Cool to 4 deg C	P	14 Days	8 oz.
Reactivity Sulfide	-----	SW-846 7.3.4.2	Cool to 4 deg C	P	14 Days	8 oz.
Semivolatile Organics	-----	8270C	Cool to 4 deg C	G, Amber	14 Days	8 oz.

Table 1

Laboratory Analysis	EPA Method	Standard Method and/or SW846 Method	Preservation	Container	Holding Time	Minimum Volume
Sulfate	-----	9035, 9036, 9038	Cool to 4 deg C	P or G	28 Days	8 oz.
Sulfides	-----	9215	Cool to 4 deg C	P or G	7 Days	8 oz.
TCLP Metals	-----	1311, 6010B, 6020, 7000A, 7470A	Cool to 4 deg C	G, Amber	180 Days (Hg 28 days)	8 oz
TCLP Herbicides	-----	1311	Cool to 4 deg C	G, Amber	14 Days	8 oz.
TCLP Pesticides	-----	1311	Cool to 4 deg C	G, Amber	14 Days	8 oz.
TCLP Semivolatile Organics	-----	1311, 8270C, 8081A, 8151A	Cool to 4 deg C	G, Amber Teflon Lined	14 Days	8 oz.
TCLP Volatile Organics	-----	1311, 8260B	Cool to 4 deg C	G, Amber VOA Vial Teflon Lined	14 Days	8 oz.
Temperature	-----	2550	-----	P	Analyze Immediately	4 oz.
TOC		Lloyd Kahn Method	Cool to 4 deg C	G, Amber	14 days	4 oz.
Total Coliform	-----	9131	Cool to 4 deg C	Sterile, P or G	6 Hrs	4 oz.
Total Coliform	-----	9132	Cool to 4 deg C	Sterile, P or G	6 Hrs	4 oz.
Total Cyanide	-----	9013	Cool to 4 deg C	P or G	14 Days	8 oz.
Volatile Organic Compounds	-----	8260B	Cool to 4 deg C Check individual state regulations for proper preservative. NJ (methanol), PA (encore samplers), NY (cool to 4 deg C)	G, wide mouth, teflon liner	14 Days	4 oz.
Volatile Organic Compounds	-----	8021		G, wide mouth, teflon liner	14 Days	4 oz.
CLP Sampling and Holding Time Information						
Cyanide (aqueous)	ILM04.1		NaOH to pH>12, Cool to 4 deg C	P	12 Days VTSR	1000ml
Cyanide**	ILM04.1		Cool to 4 deg C	G		8 oz
Mercury (aqueous)	ILM04.1		HNO3 to pH<2, Cool to 4 deg C	P	26 Days VTSR	1000ml
Mercury (solid/soils)	ILM04.1		Cool to 4 deg C	G		8 oz
Metals (aqueous)	ILM04.1		HNO3 to pH<2, Cool to 4 deg C	P	180 Days VTSR	1000ml
Metals (solid/soils)	ILM04.1		Cool to 4 deg C	G		8 oz
PCBs (aqueous)	OLM04.2		Na2S203, Cool to 4 deg C	G	See Note 7	1000ml
PCBs (solid/soils)	OLM04.2		Cool to 4 deg C	G	See Note 6	8 oz
Pesticides (aqueous)	OLM04.2		Na2S203, Cool to 4 deg C	G	See Note 7	1000ml
Pesticides (solid/soils)	OLM04.2		Cool to 4 deg C	G	See Note 6	8 oz
Semivolatile Organic Compounds (aqueous)	OMLO4.2		Cool to 4 deg C	G	See Note 8	1000ml
Semivolatile Organic Compounds (solid/soils)	OLM04.2		Cool to 4 deg C	G	See Note 6	8 oz
Volatile Organic Compounds (aqueous)	OLM04.2		HCL pH < 2, Cool to 4 deg C	G	W/preservative: 10 days VTSR; W/O: 7 days VTSR	40ml
Volatile Organic Compounds (solid/soils)	OLM04.2		Cool to 4 deg C	G	10 Days VTSR	4 oz

Table 1

Laboratory Analysis	EPA Method	Standard Method and/or SW846 Method	Preservation	Container	Holding Time	Minimum Volume

Notes:

1. P - Plastic.
2. G - Glass.
3. Minimum volume is the minimum volume required by the laboratory to conduct the analysis. The laboratory will likely require additional sample volume.
4. * Extraction within seven (7) days of collection; analysis within 40 days of extraction.
5. **When chlorine is present ascorbic acid is used to remove the interference (0.6 g ascorbic acid).
6. VTSR - Validated time of sample receipt.
7. Ten (10) days from VTSR for extraction and 40 days following extraction.
8. Five (5) days from VTSR for extration 14 days after extraction.
9. Five (5) days from VTSR for extraction 40 days after extraction.
10. Holding times are from the time of sample collection unless otherwise noted.

REMEDIAL CONSTRUCTION OVERSIGHT AND DOCUMENTATION

A. PURPOSE/SCOPE:

This SOP is intended to provide guidance and define the responsibility of CHA personnel engaged in construction observation. The objective of construction observation is to document construction activities for compliance with the contract requirements. Since the duty of CHA personnel on-site will vary based on our contractual obligations to our client, size and complexity of the project, project specification requirements and types of activities being observed, performance of the contractor, etc., it is important that the observer be familiar with:

- CHA's contract with the client
- The contract/agreement between the contractor and client
- Project manual/specifications and drawings
- Project plans and/or work plans
- Site-specific HASP.

Note: *Construction "observation" or "oversight" refers to the action or process of observing something or someone in order to gain information without the higher level of completeness and rigor implied by the term "inspect". The term "inspect" implies a rigorous and complete review of construction relative to what is shown in the contract documents. The industry generally interprets the term "inspector" to imply that this employee has some authority over the contractor to control conformance with plans and specifications. With the exception of work performed under CHATS, CHA typically has no contractual relationship with the contractor performing the work or authority over the contractor, and thus, it is important to refer to our construction phase oversight as "observation" rather than "inspection."*

B. EQUIPMENT/MATERIALS:

Required Equipment:

- Personal protective equipment (PPE) – Level D at a minimum
- Clothing appropriate for weather anticipated
- Field book
- Indelible pens & markers (e.g. Sharpies)
- Clipboard (preferably one that encloses paperwork)
- Field/Construction Observation Reports
- Digital camera
- 25-foot steel measuring tape (preferably in 100ths)

Optional Equipment (based upon project-specific needs):

- Additional PPE (Level C, personal flotation devices, etc.) – Refer to site-specific HASP
- 100', 200', or 300' measuring tapes or measuring wheel
- 6' folding wood ruler (preferably in 100ths)
- Hand held GPS
- Photoionization detector, combustible gas meter, particulate meter, etc.
- Latex/nitrile gloves
- Sampling equipment and containers

REMEDIAL CONSTRUCTION OVERSIGHT AND DOCUMENTATION

- Wooden survey stakes and 3-lb. sledge hammer
- Survey tape/flagging/wire stakes
- Survey tape
- Digital audio recorder
- Computer with remote network access (for long duration projects).

C. GENERAL PROCEDURES/JOB DUTIES:

Electronic File Storage: Wherever practical, the below referenced documentation should be stored electronically and routinely uploaded to the project folders on CHA's server. Binders may be used to store paper documentation when appropriate, but CHA personnel should make a reasonable effort to minimize the amount of paper generated for the project and the amount of files stored at the site due to the potential for damage or loss of such documents.

The CHA construction observer will perform the following tasks:

1. Attend a preconstruction meeting whenever possible. If possible, a field visit to the project site should also be made.
2. Establish and maintain lines of communication between all parties. Establish a chain of command with the CHA PM, the client, the contractor, regulators, etc.
3. File all correspondence in the project folder, including e-mails. Letters received in hard copy only should be scanned in PDF format and stored in the project file as well. All correspondence should be stored with the date first followed by a description of the content to facilitate future searches (e.g. 2015-01-01_CHA to Contractor Re Recent Analytical Results). Conversation Logs and Meeting minutes shall be stored in a similar manner.
4. Monitor that construction work conforms to the provisions of the contract documents and/or project plans (i.e. HASP, QAPP, CAMP, SWPPP, etc.).
5. Prepare daily observation reports and take digital photographs documenting major site activities and observations made. For small, simple projects, complete a **Field Observation Report**. For larger, more complex projects where multiple activities are being observed, a more detailed **Construction Observation Report** should be completed. At a minimum, observation reports will include:

    - Date and weather conditions
    - Name of important visitors
    - Work/activity in progress and location
    - Contractor's means and methods for completing activities
    - Size of contractor's work force and equipment in use
    - Number of hours worked per day for contractor and subcontractor (arrival & departure times)
    - The substance of important conversations with the contractor concerning conduct, progress, changes, test results, interpretations of specifications and all other important details
    - Reporting of any variances made in the field to sampling plans, SOPs or other applicable contract documents
    - Documentation of calibration/maintenance of field instrumentation, field screening observations, samples collected, etc.

REMEDIAL CONSTRUCTION OVERSIGHT AND DOCUMENTATION

6. Maintain digital photographic documentation of all work completed. Sufficient photographs should be taken to depict the location of the activity, the material(s) being placed/installed, the equipment being utilized by the contractor, the means and methods implemented by the contractor, and any issues that may arise.
7. Observe all materials incorporated in the work for compliance with the contract documents and inform the Engineer and contractor of any conflicts.
8. Attend regularly scheduled progress meetings, as appropriate. Prepare meeting minutes and submit to engineer/PM for review. Upon completing any modifications, distribute meeting minutes to the project team.
9. Review project schedules to prepare for upcoming work and anticipate changes or potential conflicts.
10. Computations will be made of quantities of work performed, and materials used on the project by actual field measurements and survey data provided by the Contractor in accordance with the specifications.
11. Track, collect and review all required shop drawings and submittals. Forward to design engineers for review when necessary. Advise the Engineer and Contractor of the commencement of any work requiring a Shop Drawing or sample if the submittal has not been approved by the Engineer.
12. Oversee testing and observation requirements called for in the contract documents. Document that testing required by the contract documents is performed and that commercially manufactured products used on the project are accompanied by numerical test results or a certification from the manufacturer that the material meets applicable standards. QA/QC testing will be provided through the contractor as part of the technical specifications. The contractor will be required to prepare and submit all documentation of both failed and passed QA/QC tests.
13. Review test reports and certifications for conformance with the contract documents. Each test report for material in place should, as a minimum, contain the following:
    - Test performed and dated
    - Applicable standard or project specifications
    - Test location
    - Test result
    - Action taken on failing tests.
14. Maintain a file of all test reports and certifications as provided by the contractor.
15. Inform the contractor in writing, of deficiencies in order that the corrections can be made and retested prior to covering any substandard work with additional material. Document that corrective work and retesting is performed.
16. Coordinate with the contractor the preparation of record or as-built drawings and remind the contractor periodically to collect important record data as the work progresses, particularly for work that will be covered by subsequent tasks.

REMEDIAL CONSTRUCTION OVERSIGHT AND DOCUMENTATION

D. QA/QC REQUIREMENTS:

It is important to read all contract documents and project plans and maintain an understanding of which QA/QC testing will be the responsibility of the contractor versus CHA throughout the duration of the project. QA/QC testing performed by CHA employees (e.g. end point sampling, air monitoring, etc.) shall be completed in accordance with CHA's SOPs. QA/QC testing requirements listed in the project specifications are typically required to be performed by the Contractor and it is often the responsibility of the contractor to retain an independent third party testing agency to meet these testing requirements.

It should be noted that prequalification testing refers to testing results that must be provided to the Engineer for acceptance prior to commencing with a task utilizing the specified material. Conformance testing or field QA/QC testing typically refers to post-installation or placement testing that is completed on-site after the specified material is installed.

E. SPECIAL CONDITIONS:

The field observer must be in frequent communication with the CHA Project Manager or task manager regarding the progress of the project. Circumstances can change quickly on projects and proactive communication can help reduce the potential for larger problems or issues to arise. Depending on the situation, it may become important to record additional information. Examples may include:

1. Detail breakdown of type and number of personnel on-site for each contractor/subcontractor and hours worked by each.
2. Detailed breakdown of heavy equipment on-site and hours each piece of equipment is actually used each day.
3. Material deliveries and quantities.
4. Delays and/or downtime (length of time, people affected, equipment not used, etc.).
5. Detailed weather information (e.g. periodic wind speed and direction throughout day).
6. Length of time spent in upgraded levels of PPE and number of personnel working in exclusion zones.
7. Air monitoring results, dust control issues, air monitoring plan exceedances, etc.
8. Details for erosion and sediment control issues (e.g. tracking onto roadways).
9. Detailed lists of all site visitors (sign in/sign out sheets).

F. REFERENCES:

CHA Total Technical Quality Control Manual, Field Observations Section: http://chanet.cha-llp.com/manual/ttqc/section7/index.cfm

G. APPENDICES/FORMS:

Field Observation Report – for simple, short duration projects.

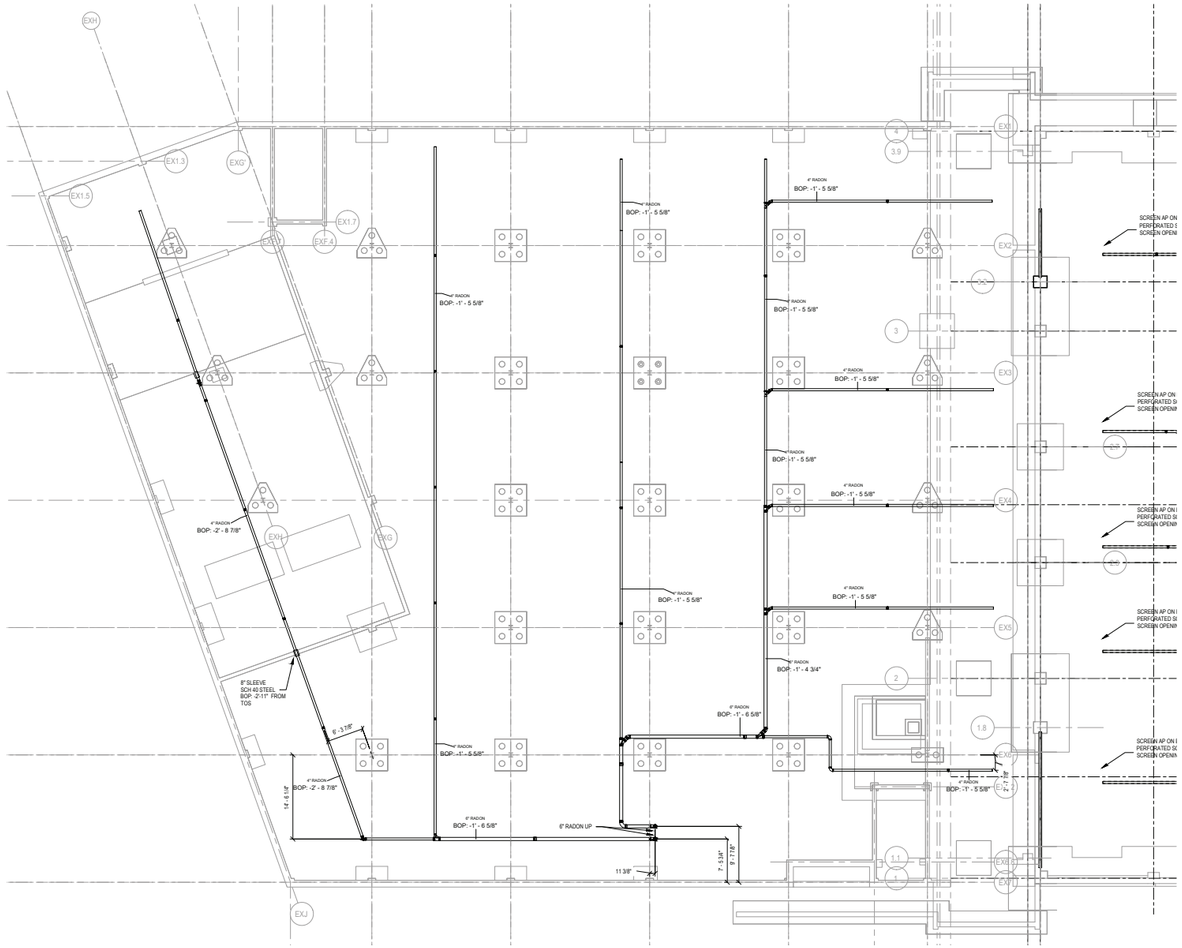
Construction Observation Report – for complex, longer duration projects.

END OF SOP
Final Check by C. Burns 11/19/2015

APPENDIX K

SSDS Drawings

FOR CONSTRUCTION



Alpine Engineering Services LLC

Date: December 2, 2021

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AS BUILT
10/19/2021

UNDERSLAB SLEEVES - ADMIN
P-002 SCALE: 1/8" = 1'-0"

NORTH

FOR CONSTRUCTION

VERSIONS

NO.	DATE	DESCRIPTION
0	2/8/21	FOR REVIEW
1	3/26/21	R&R SUBMITTAL
2	10/19/21	AS BUILT

ARCHITECT/ENGINEER:

PROJECT TITLE:

JMA 5G

LOCATION: 140 CORTLAND AVE SYRACUSE NY, 13202

DRAWING TITLE:

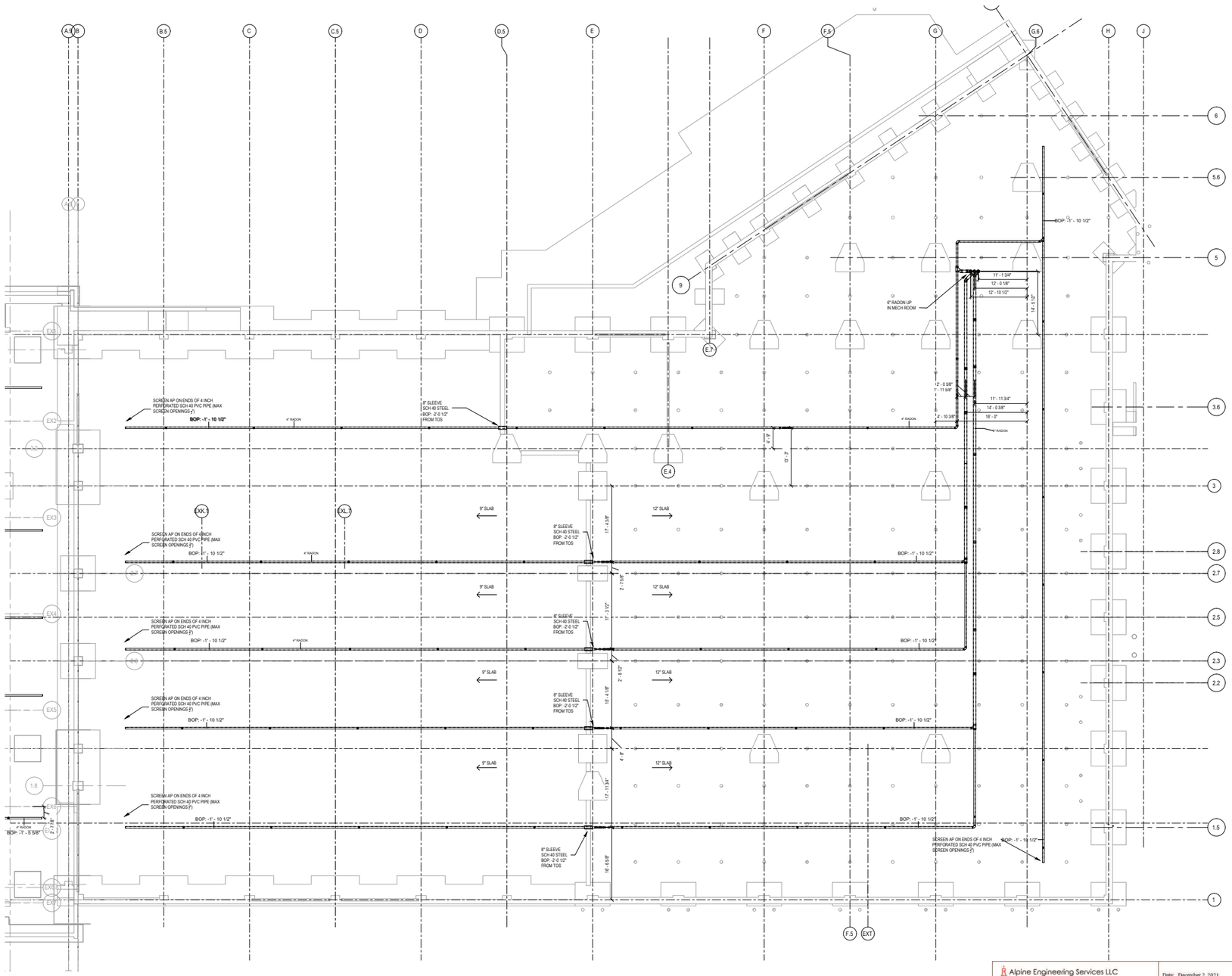
UNDERSLAB RADON - ADMIN

WOODCOCK & ARMANI MECHANICAL CONTRACTORS
6500 NEW VENTURE GEAR DR.
EAST SYRACUSE, NY 13057
(P) 315-425-7100 (F) 315-471-6857

DATE: 10-19-2021
W&A PROJECT NO.: 20-1235
DRAWN BY: MD
DRAWING NO.:

P-002

FOR CONSTRUCTION



1 UNDERSLAB RADON - MANUFAC
P-003 SCALE: 1/8" = 1'-0"

NORTH

FOR CONSTRUCTION

Alpine Engineering Services LLC	Date: December 2, 2021
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10/19/2021

VERSIONS

NO.	DATE	DESCRIPTION
0	2/8/21	FOR REVIEW
1	3/26/21	R&R SUBMITTAL
2	10/19/21	AS BUILT

ARCHITECT/ENGINEER:

PROJECT TITLE:

JMA 5G

LOCATION: 140 CORTLAND AVE SYRACUSE NY, 13202

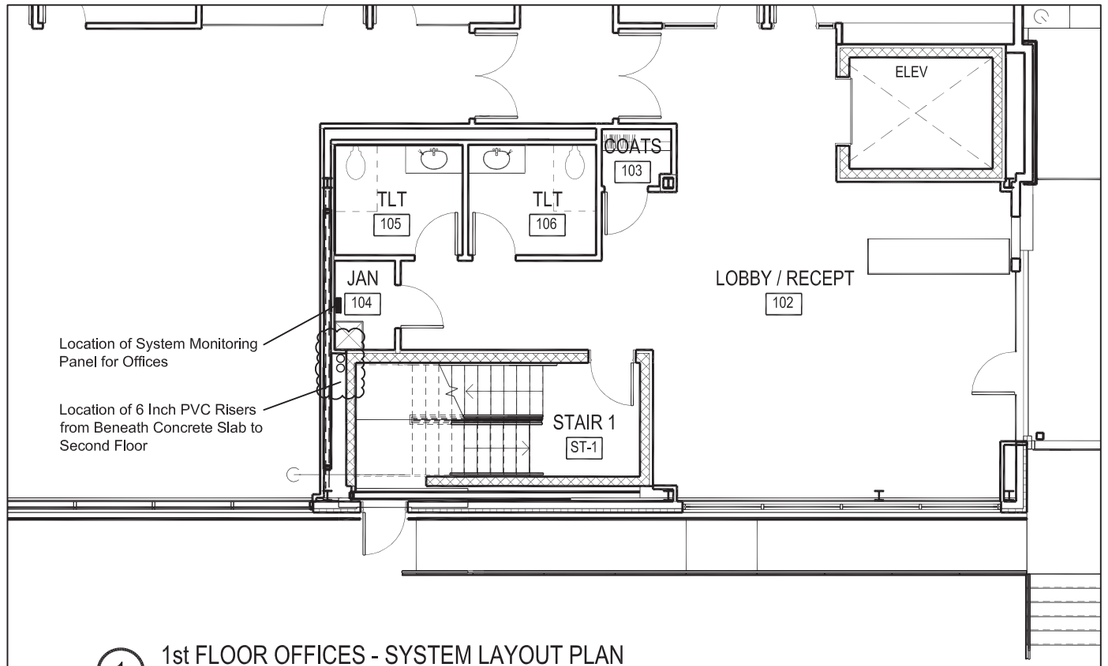
DRAWING TITLE:

UNDERSLAB RADON - MANUFACTURING

WOODCOCK & ARMANI MECHANICAL CONTRACTORS
6500 NEW VENTURE GEAR DR.
EAST SYRACUSE, NY 13057
(P) 315-425-7100 (F) 315-471-6857

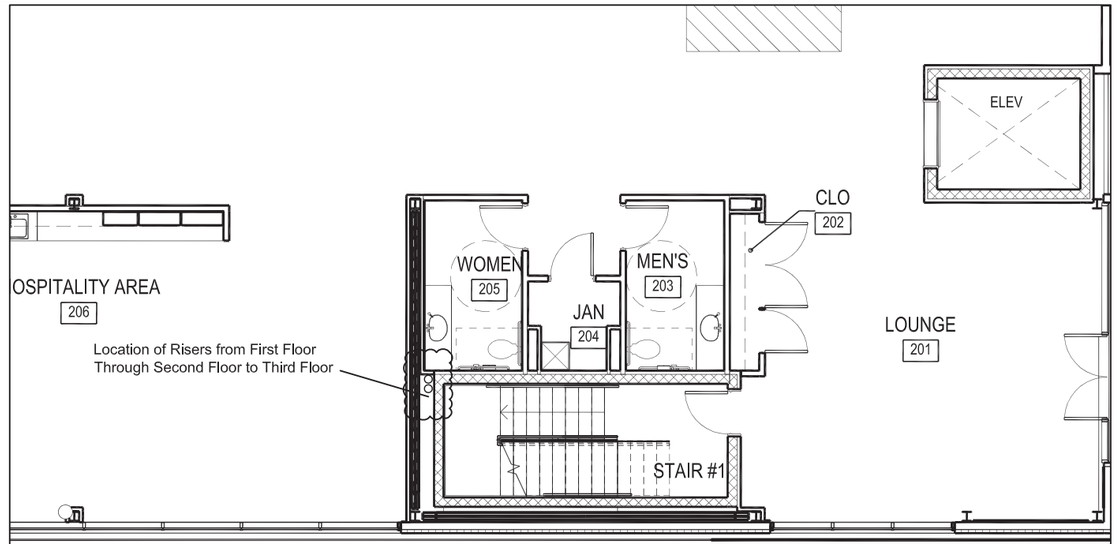
DATE: 10-19-2021
W&A PROJECT NO.: 20-1235
DRAWN BY: MD
DRAWING NO.:

P-003



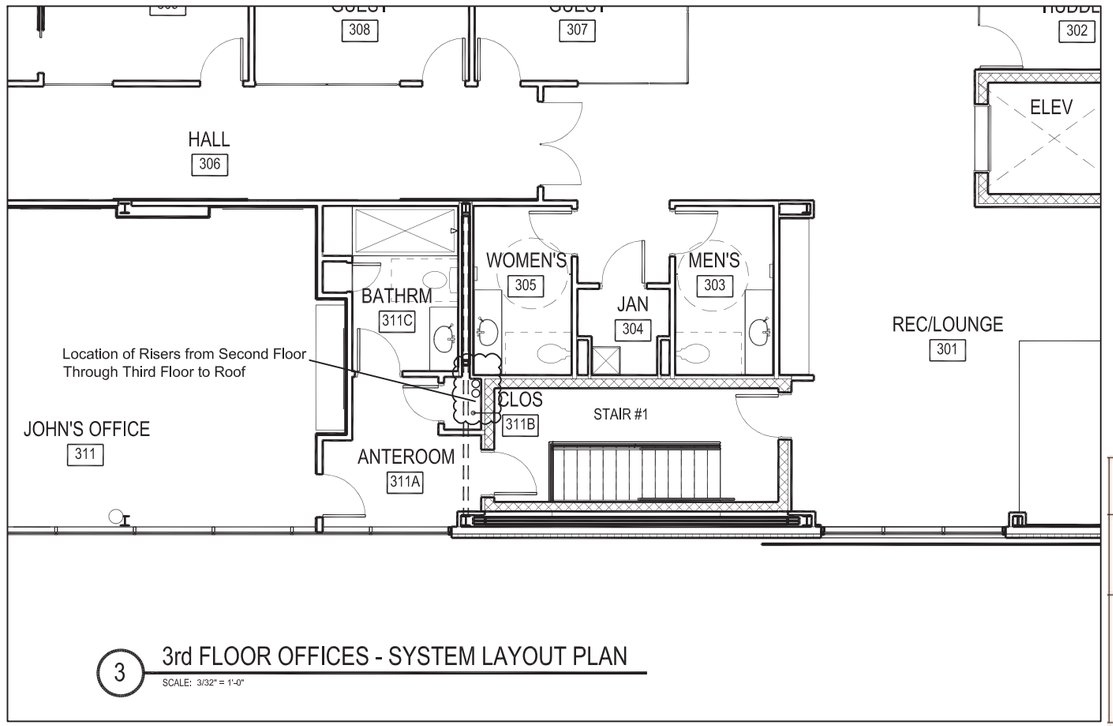
1 1st FLOOR OFFICES - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"



2 2nd FLOOR OFFICES - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"



3 3rd FLOOR OFFICES - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"

NOTES:

SYSTEM LABELS

LABEL PIPE: "VAPOR MITIGATION SYSTEM" AT LEAST ONCE PER FLOOR.

LABEL ELECTRICAL BREAKER(S) IN PANEL: "MITIGATION FAN(S)"

LABEL MONITORING PORTS: "VAPOR MITIGATION MONITORING PORT"

LABEL MONITORING PANEL: "VAPOR MITIGATION SYSTEM MONITORING PANEL"

Alpine Engineering Services LLC	Date: December 2, 2021
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AS BUILT
10/19/2021

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
DRAFT	August 12, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO:

V - 2a

SHEET TITLE:	VAPOR MITIGATION SYSTEM: SYSTEM LAYOUT - OFFICES			
DRAWN BY:	BG	CHECKED BY:	MS	

AS BUILT
10/19/2021

Alpine Engineering Services LLC

Date: December 2, 2021

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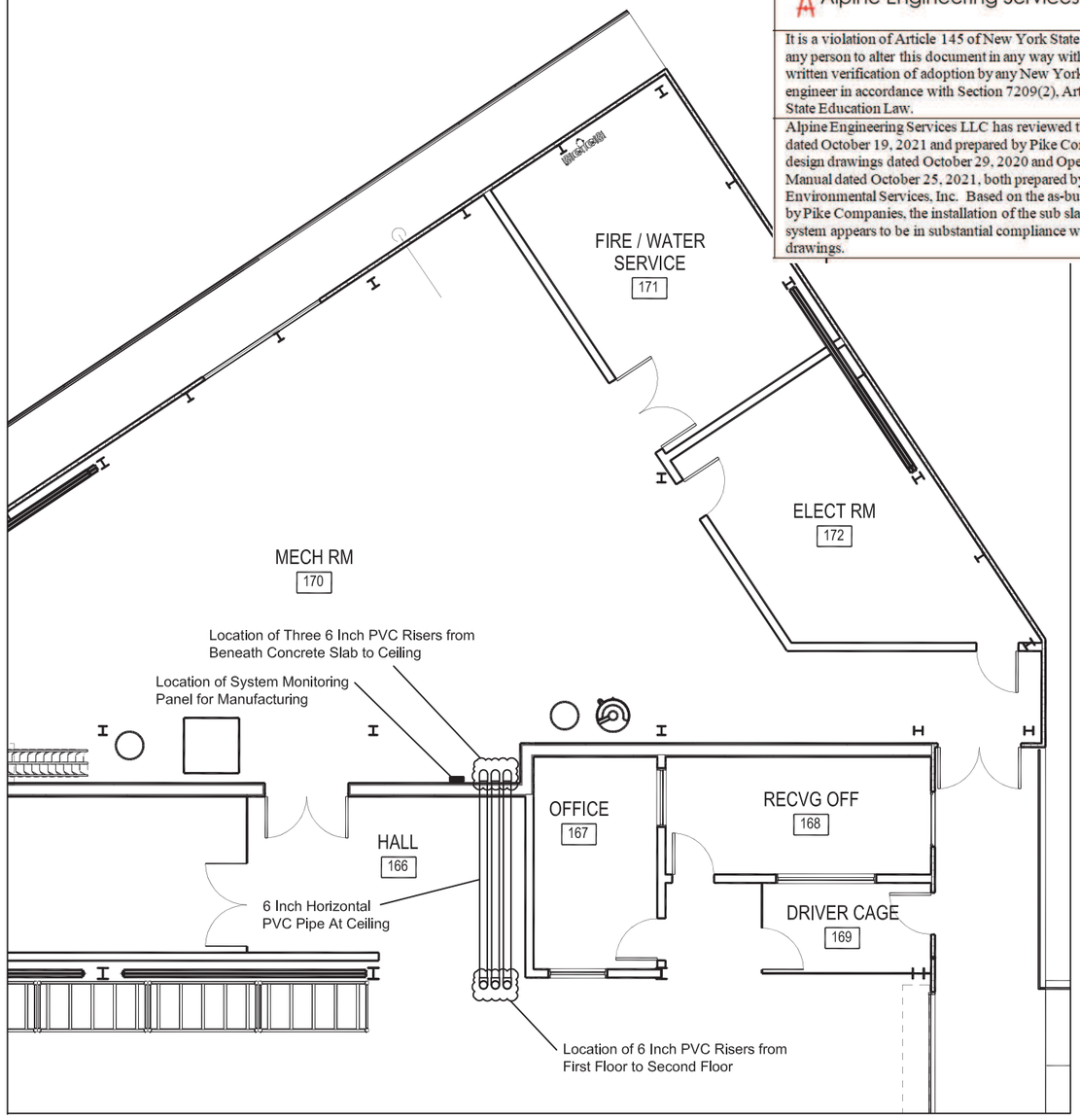
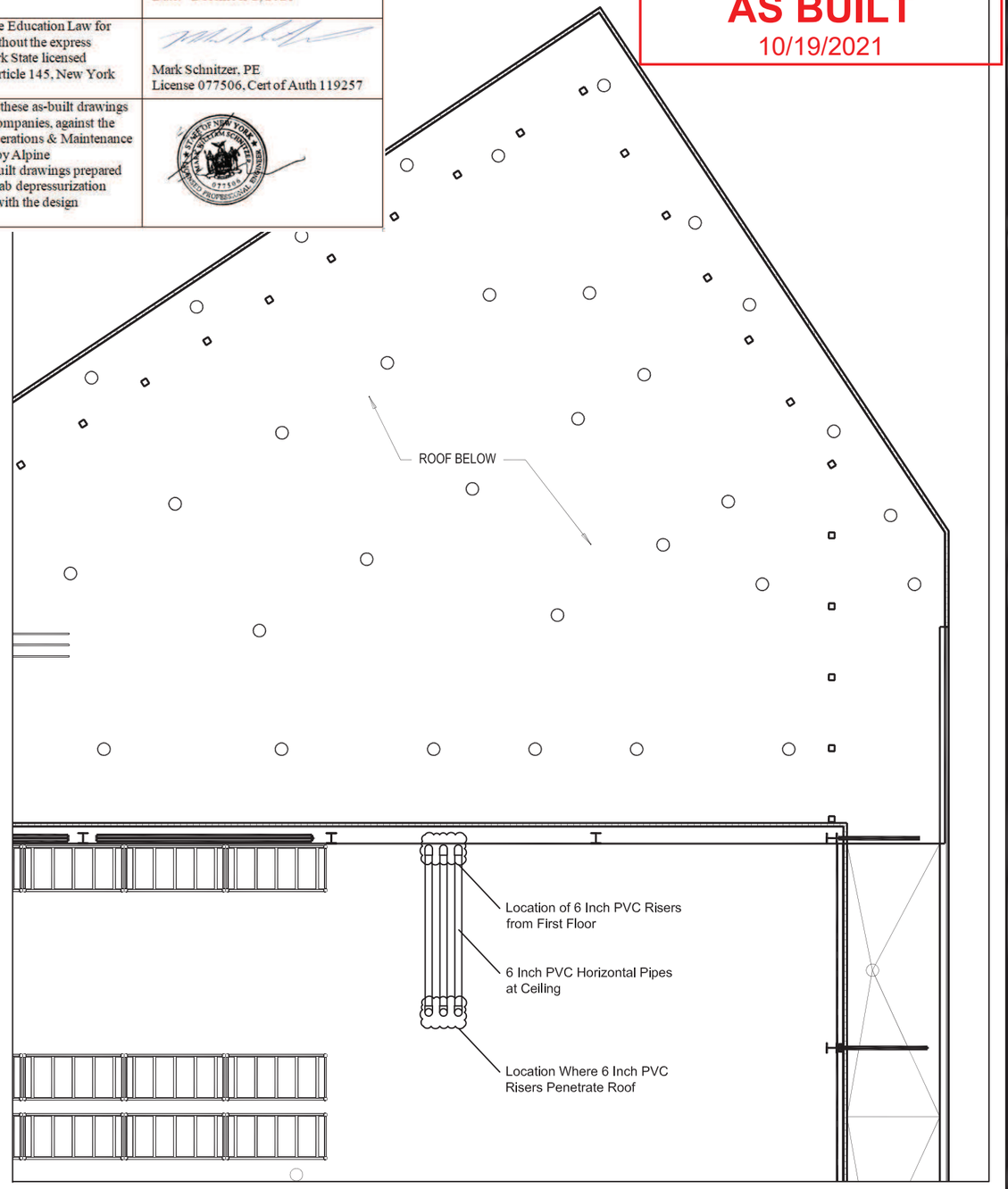


1 1st FLOOR MANUFACTURING - SYSTEM LAYOUT PLAN
SCALE: 3/32" = 1'-0"



2 2nd FLOOR MANUFACTURING - SYSTEM LAYOUT PLAN
SCALE: 3/32" = 1'-0"

NOTES:
SYSTEM LABELS
LABEL PIPE: "VAPOR MITIGATION SYSTEM" AT LEAST ONCE PER FLOOR.
LABEL ELECTRICAL BREAKER(S) IN PANEL: "MITIGATION FAN(S)"
LABEL MONITORING PORTS: "VAPOR MITIGATION MONITORING PORT"
LABEL MONITORING PANEL: "VAPOR MITIGATION SYSTEM MONITORING PANEL"

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
Syracuse, NY

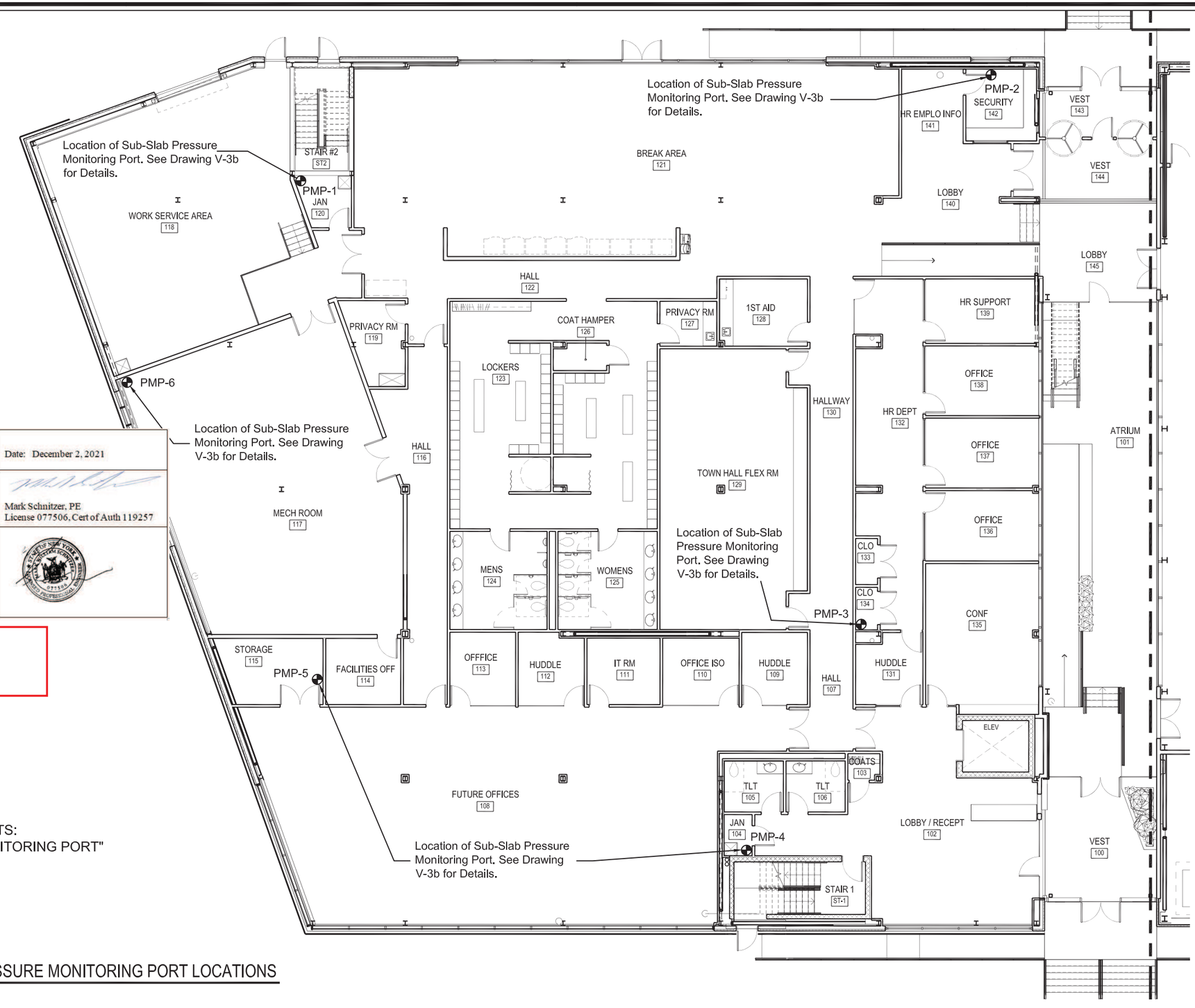
DESCRIPTION:	DATE:
DRAFT	August 12, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO:

V - 2b

SHEET TITLE:	VAPOR MITIGATION: SYSTEM LAYOUT - MANUFACTURING			
DRAWN BY:	BG	CHECKED BY:	MS	



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AS BUILT
10/19/2021

NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"

1 1st FLOOR OFFICES - PRESSURE MONITORING PORT LOCATIONS
SCALE: 3/32" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
DRAFT	August 12, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO: V - 2c

SHEET TITLE:	VAPOR MITIGATION SYSTEM: OFFICES		
DRAWN BY:	BG	CHECKED BY:	MS

NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"

AS BUILT
10/19/2021

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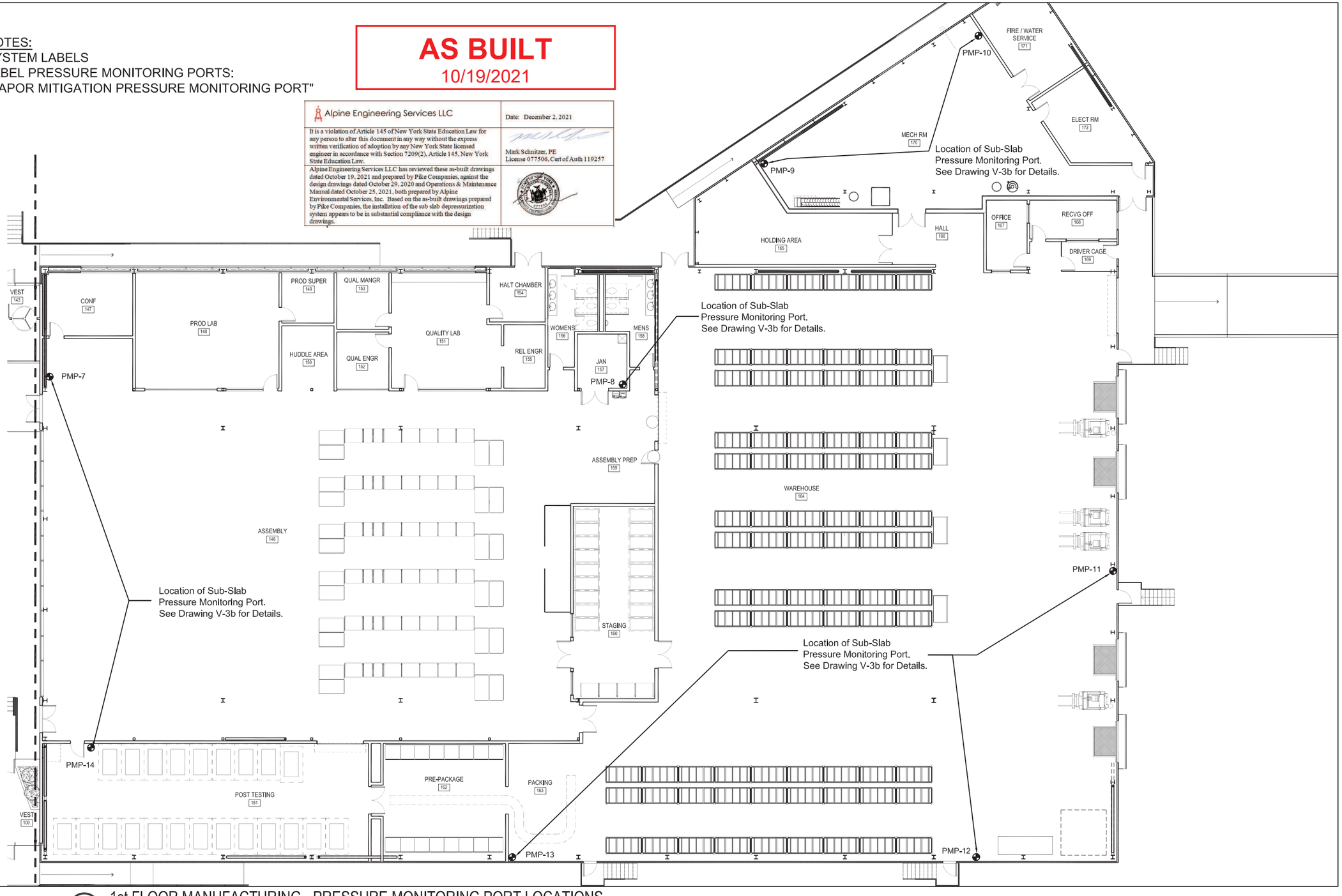


1 1st FLOOR MANUFACTURING - PRESSURE MONITORING PORT LOCATIONS
SCALE: 3/64" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

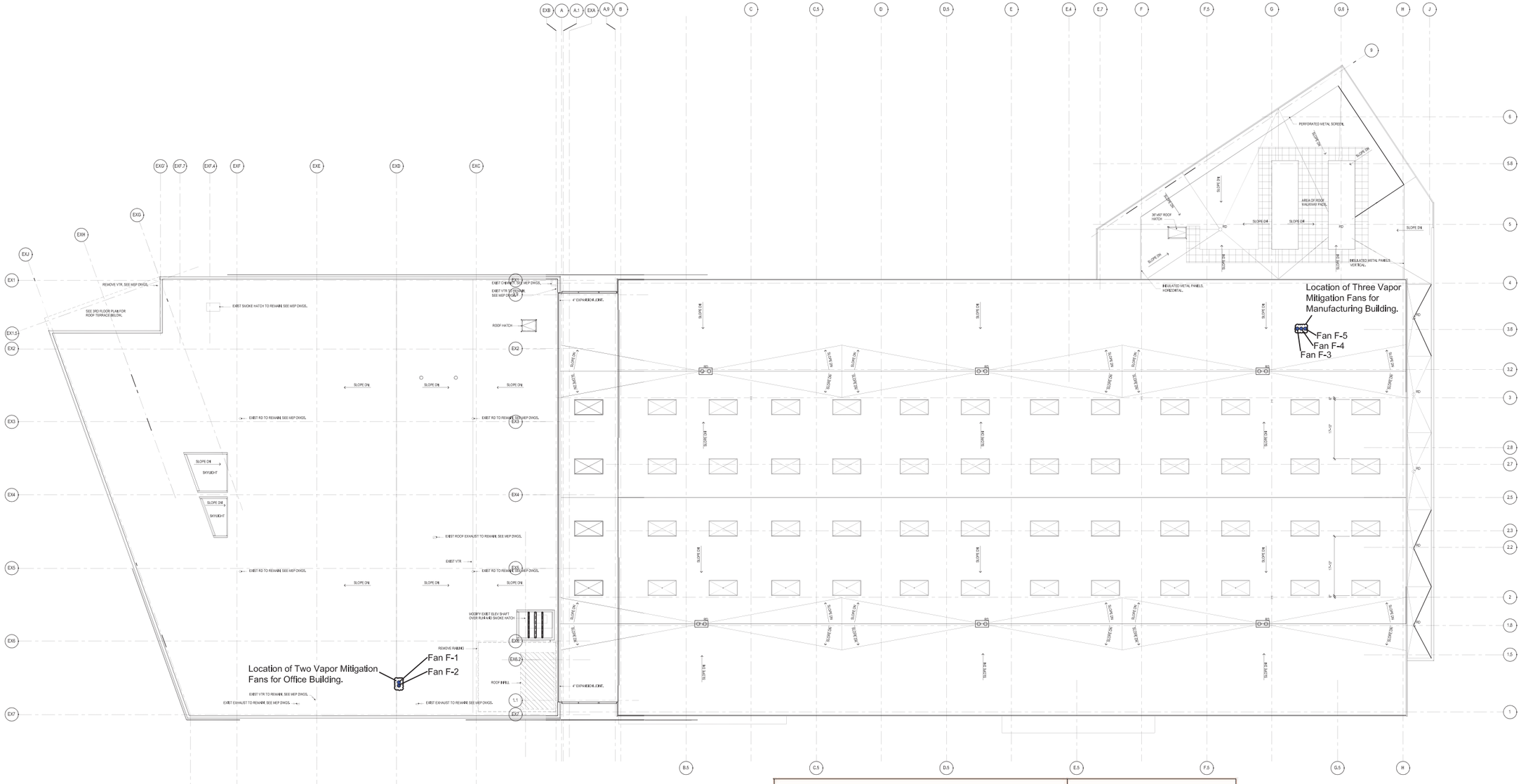
DATE:
August 2020

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
DRAFT	August 12, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R
SHEET NO:
V - 2d

SHEET TITLE:	VAPOR MITIGATION: MANUFACTURING		
DRAWN BY:	BG	CHECKED BY:	MS



1 ROOF - FAN LOCATION PLAN

SCALE: 1/32" = 1'-0"

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Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

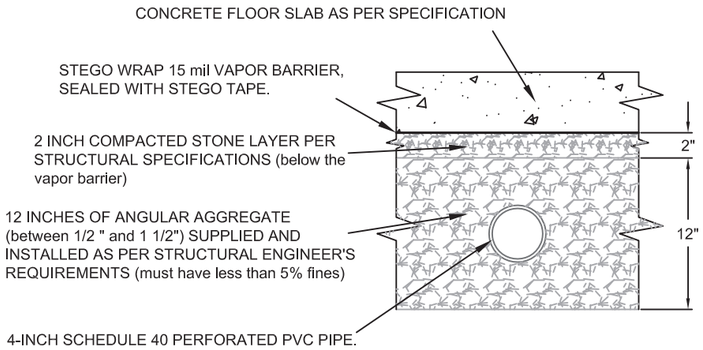
140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
FINAL	October 1, 2020

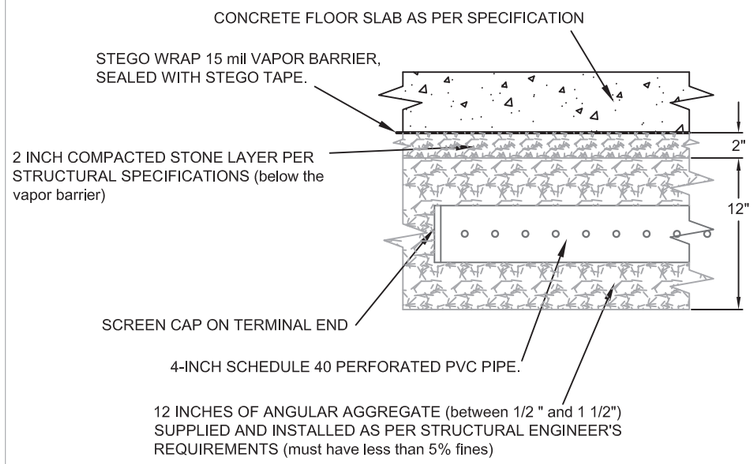
PROJECT NO: 19-24156-R

SHEET NO: V - 2e

SHEET TITLE:	VAPOR MITIGATION SYSTEM: ROOF - FAN LOCATIONS		
DRAWN BY:	BG	CHECKED BY:	MS



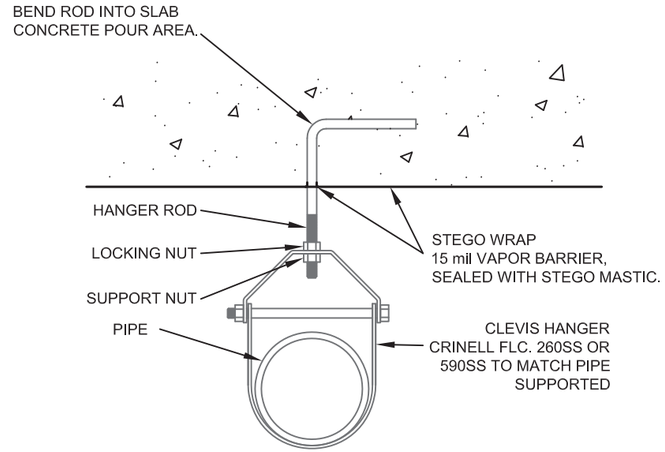
SUB-SLAB PIPE - END VIEW
NOT TO SCALE



SUB-SLAB PIPE TO BE PLACED LEVEL.

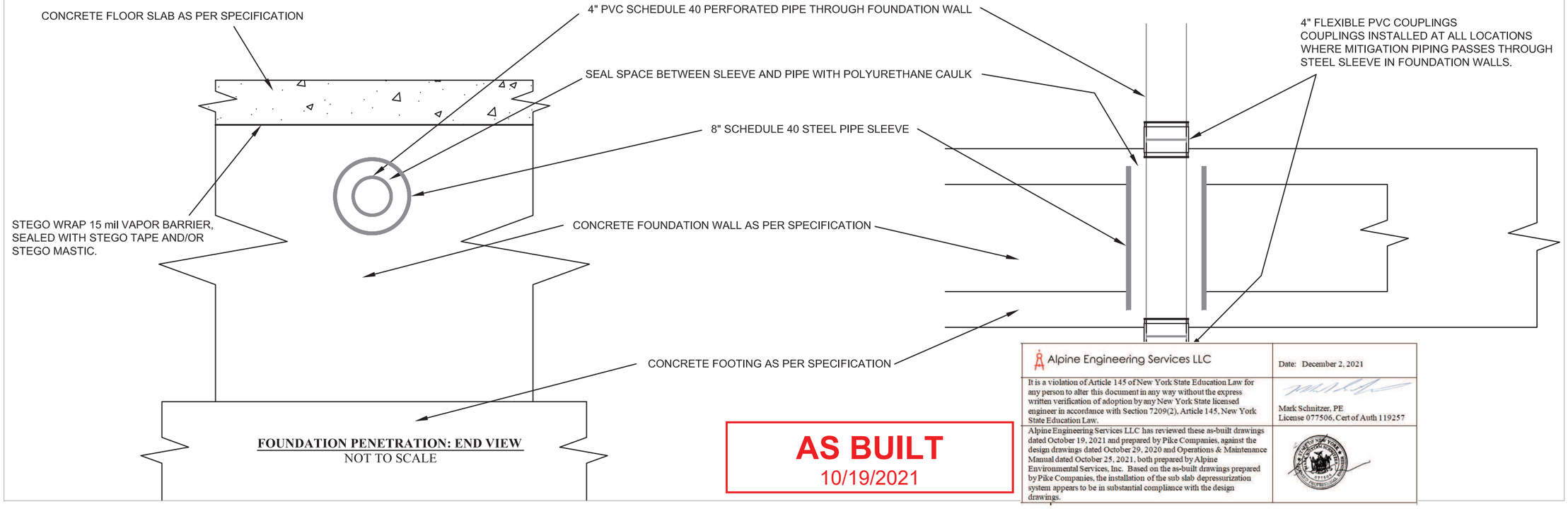
12 5/8" HOLES PER FOOT IN PERFORATED PIPE LOCATED AT 3 O'CLOCK, 6 O'CLOCK, AND 9 O'CLOCK POSITIONS AT FINAL INSTALL.

SUB-SLAB PIPE - SIDE VIEW
NOT TO SCALE



NOTE: ALL HANGER MATERIALS TO BE STAINLESS STEEL

SUB-SLAB PIPE - HANGER DETAIL
NOT TO SCALE



FOUNDATION PENETRATION: END VIEW
NOT TO SCALE

AS BUILT
10/19/2021

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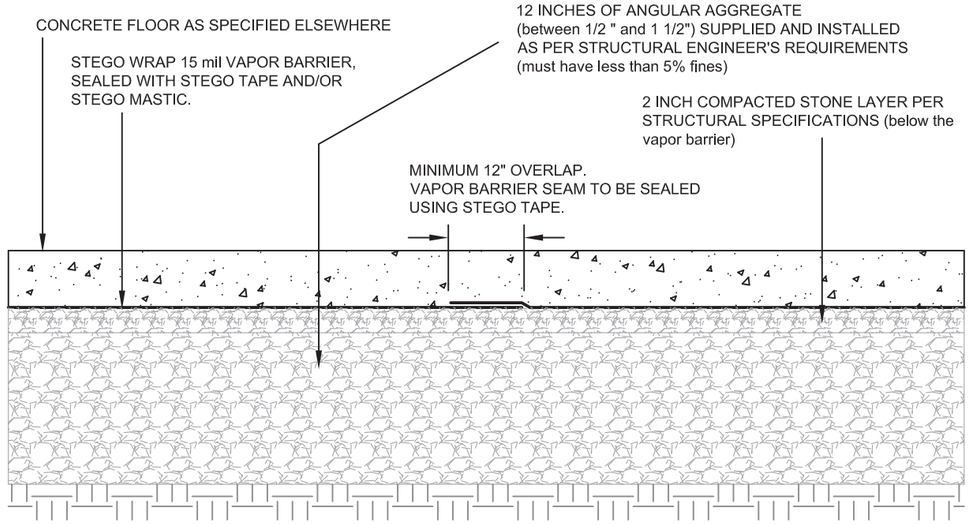
DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

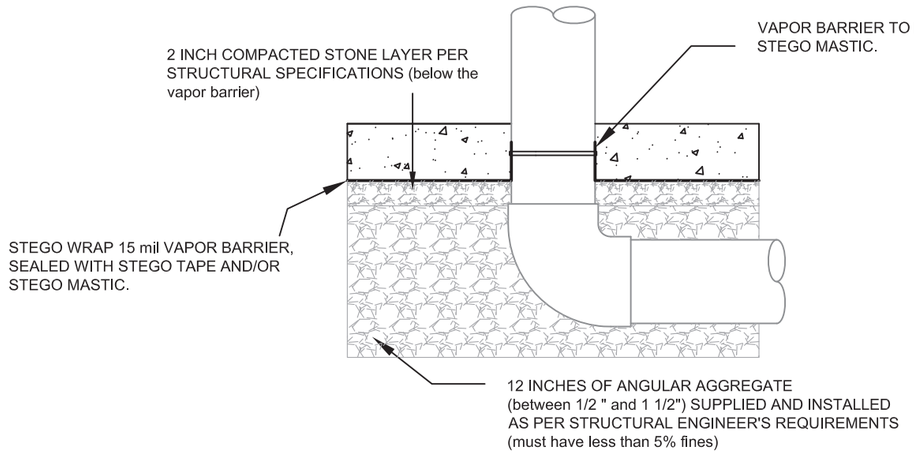
SHEET NO:

V - 3a

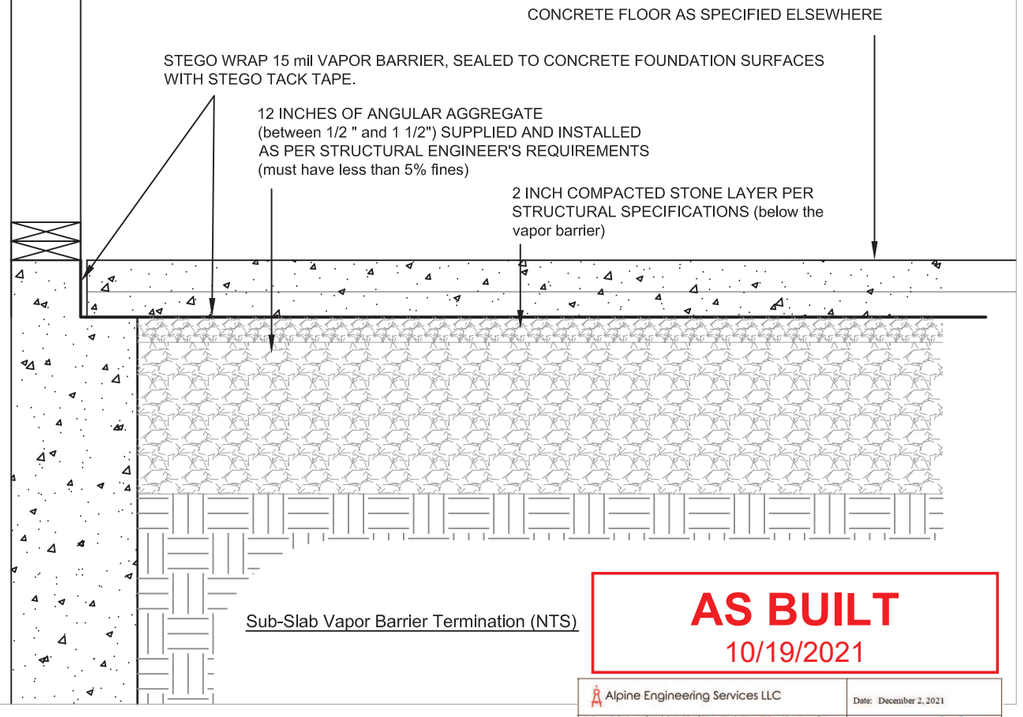
SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 1		
DRAWN BY:	BG	CHECKED BY:	MS



Detail for Overlap of Vapor Barrier System (NTS)



Underslab Gas Vapor Barrier Detail At Penetrations Through Floor (NTS)



Sub-Slab Vapor Barrier Termination (NTS)

AS BUILT
10/19/2021

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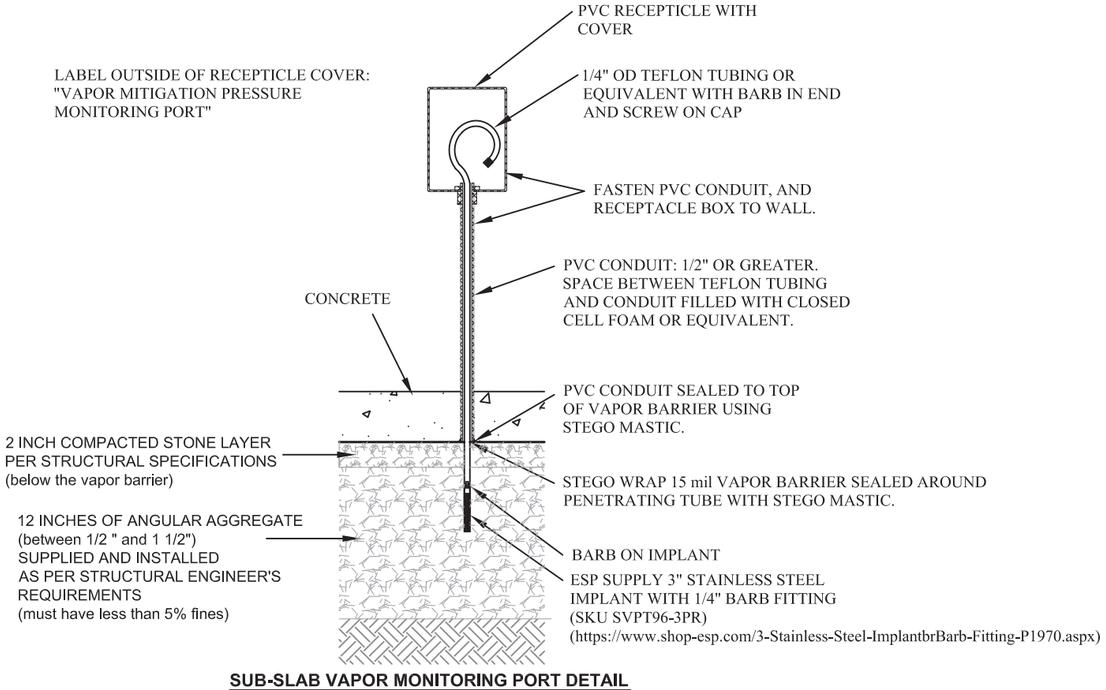


SUB-SLAB VAPOR MONITORING PORT DETAIL
NOT TO SCALE

Alpine Environmental Services

DATE: August 2020

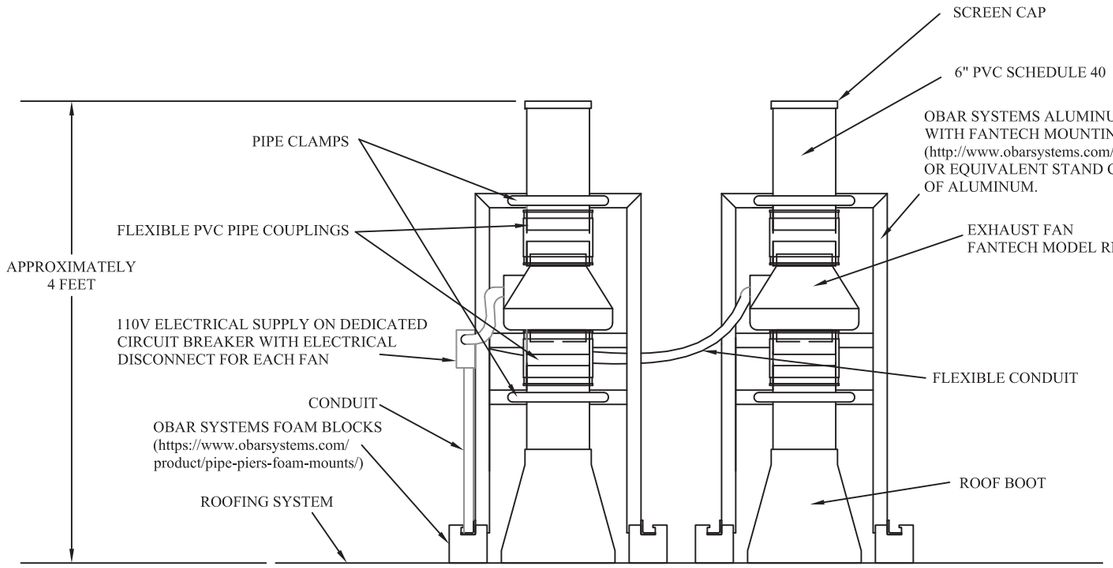
140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

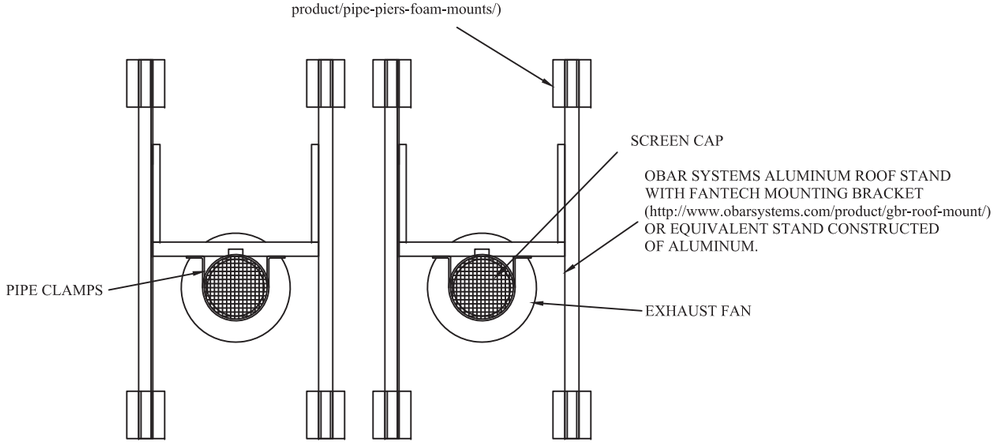
PROJECT NO: 19-24156-R

SHEET NO: V - 3b

SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 2		
DRAWN BY:	BG	CHECKED BY:	MS



OFFICE BUILDING - FANS F-1 AND F-2
FANTECH RN4 MOUNTING DETAIL
ROOF MOUNT - SIDE VIEW
NOT TO SCALE



OFFICE BUILDING - FANS F-1 AND F-2
FANTECH RN4 FAN MOUNTING DETAIL
ROOF MOUNT - TOP VIEW
NOT TO SCALE

Alpine Engineering Services LLC

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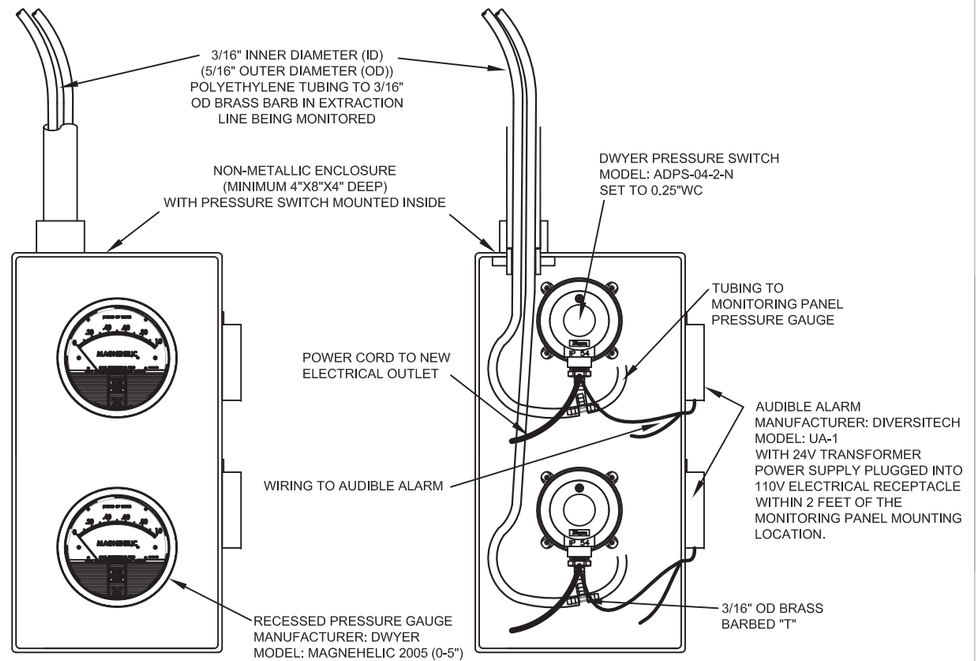


OFFICE BUILDING
MONITORING PANEL - FRONT VIEW
NOT TO SCALE

OFFICE BUILDING
MONITORING PANEL - INTERIOR VIEW
NOT TO SCALE

NOTE:

PROVIDE 115V ELECTRICAL SERVICE TO FANS ON 20 AMP DEDICATED CIRCUIT BREAKER. MULTIPLE MITIGATION FANS CAN BE ON THE SAME BREAKER. ELECTRICAL POWER SERVING THE ALARM SHALL BE ON A DIFFERENT CIRCUIT THAN THE FAN, BUT IS NOT REQUIRED TO BE A DEDICATED CIRCUIT.

AS BUILT
10/19/2021

Alpine Inc. ENVIRONMENTAL SERVICES

DATE:
August 2020

140 Cortland Avenue
Syracuse, NY

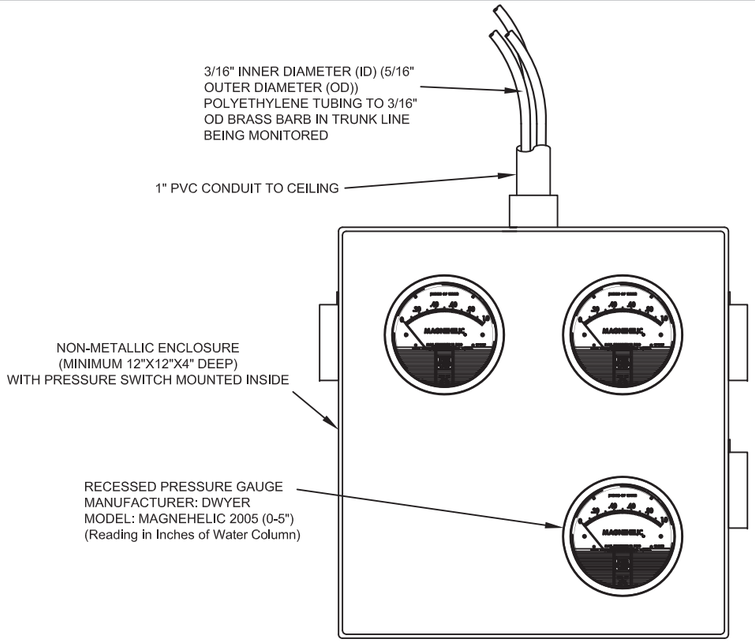
DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

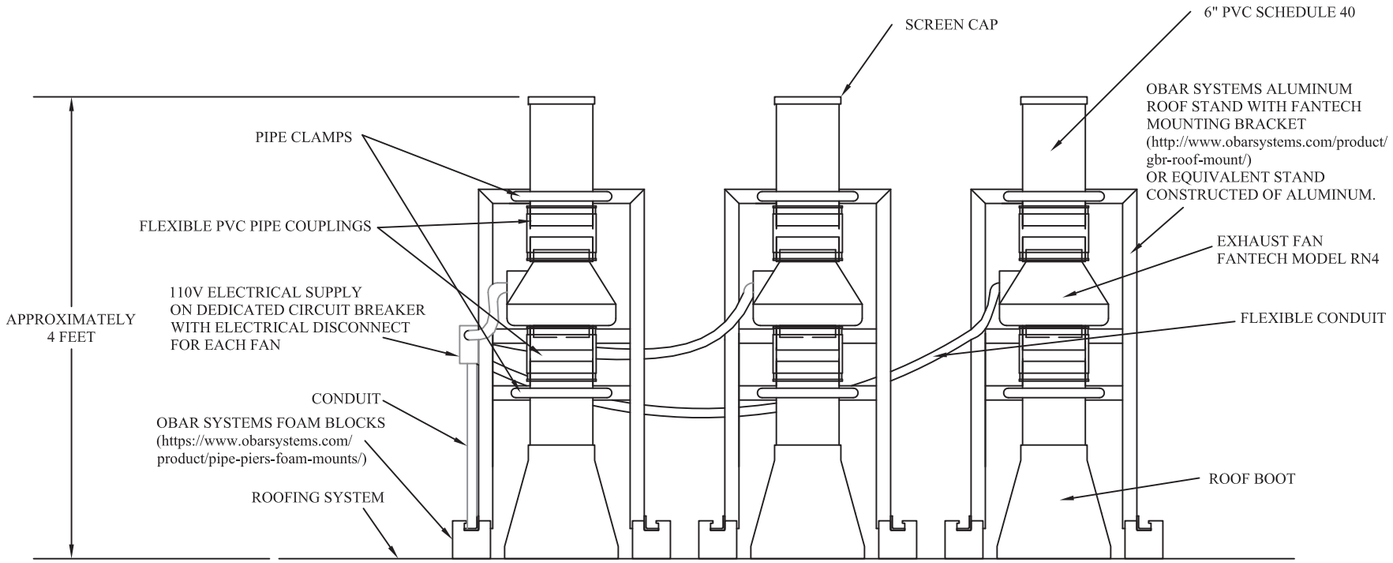
SHEET NO:

V - 3c

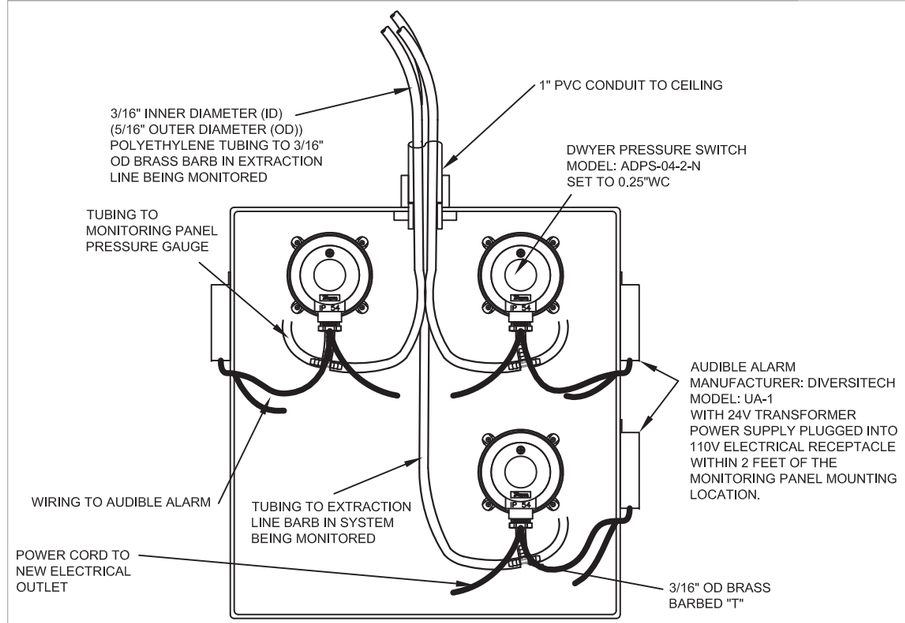
SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 3			
DRAWN BY:	BG	CHECKED BY:	MS	



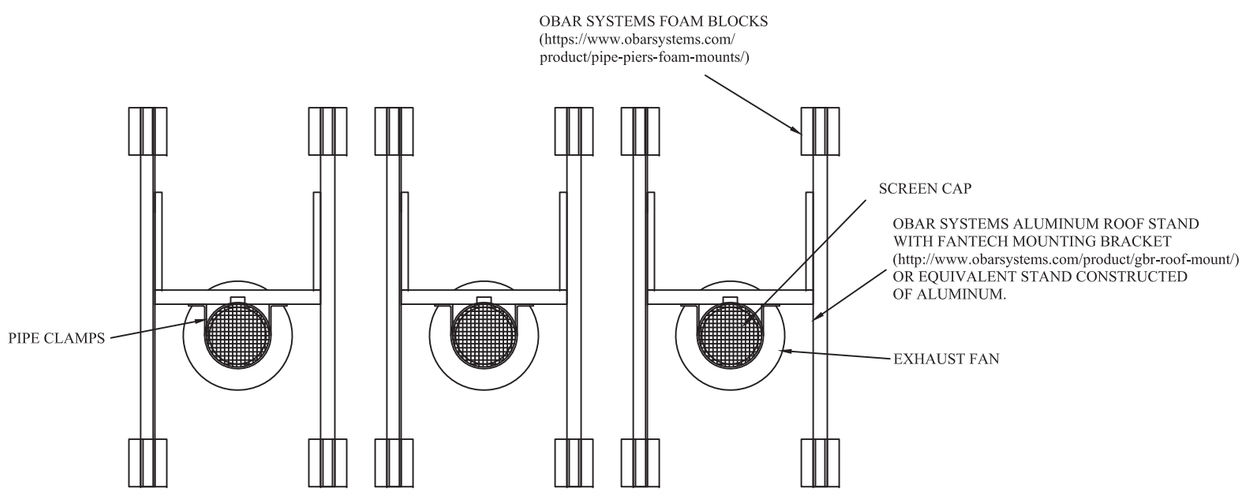
MANUFACTURING BUILDING
MONITORING PANEL - FRONT VIEW
NOT TO SCALE



MANUFACTURING BUILDING - FANS F-3, F-4 AND F-5
FANTECH RN4 MOUNTING DETAIL
ROOF MOUNT - SIDE VIEW
NOT TO SCALE



MANUFACTURING BUILDING
MONITORING PANEL - INTERIOR VIEW
NOT TO SCALE



MANUFACTURING BUILDING - FANS F-3, F-4 AND F-5
FANTECH RN4 FAN MOUNTING DETAIL
ROOF MOUNT - TOP VIEW
NOT TO SCALE

AS BUILT
10/19/2021

NOTE:

PROVIDE 115V ELECTRICAL SERVICE TO FANS ON 20 AMP DEDICATED CIRCUIT BREAKER. MULTIPLE MITIGATION FANS CAN BE ON THE SAME BREAKER. ELECTRICAL POWER SERVING THE ALARM SHALL BE ON A DIFFERENT CIRCUIT THAN THE FAN, BUT IS NOT REQUIRED TO BE A DEDICATED CIRCUIT.

Alpine Engineering Services LLC	Date: December 2, 2021
It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.	Mark Schnitzer, PE License 077506, Cert of Auth 119257
Alpine Engineering Services LLC has reviewed these as-built drawings dated October 19, 2021 and prepared by Pike Companies, against the design drawings dated October 29, 2020 and Operations & Maintenance Manual dated October 25, 2021, both prepared by Alpine Environmental Services, Inc. Based on the as-built drawings prepared by Pike Companies, the installation of the sub slab depressurization system appears to be in substantial compliance with the design drawings.	

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
Syracuse, NY

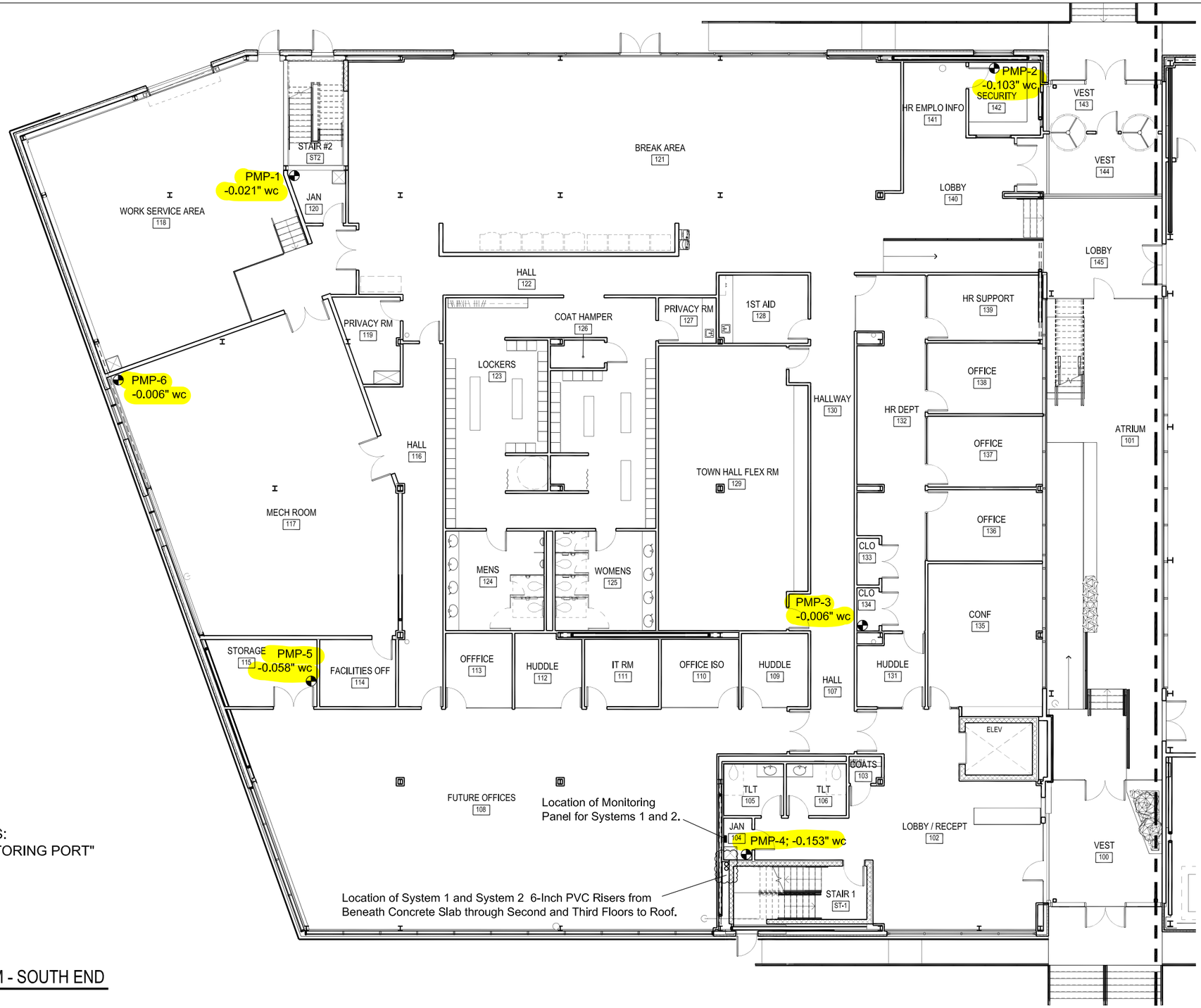
DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO:

V - 3d

SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 4		
DRAWN BY:	BG	CHECKED BY:	MS



NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"

1 VAPOR MITIGATION SYSTEM - SOUTH END
SCALE: 3/32" = 1'-0"

Alpine Inc.
ENVIRONMENTAL SERVICES

DATE:
October 2021

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
FINAL	October 22, 2021

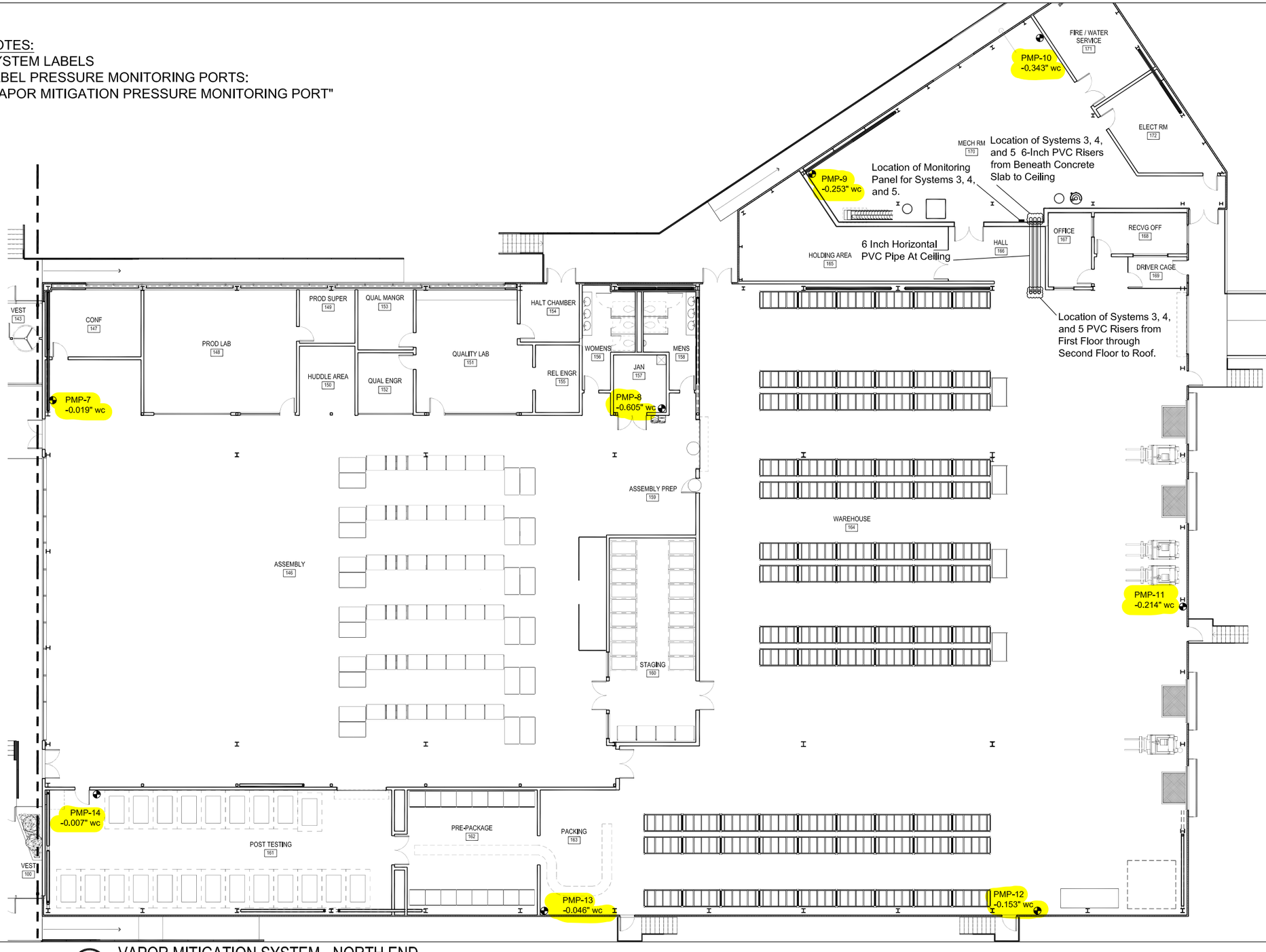
PROJECT NO: 19-24156-R

SHEET NO:

V - 100

SHEET TITLE:	VAPOR MITIGATION SYSTEM - SOUTH END		
DRAWN BY:	BG	CHECKED BY:	MS

NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"



1 VAPOR MITIGATION SYSTEM - NORTH END
SCALE: 3/64" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

DATE:
October 2021

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
FINAL	October 22, 2021

PROJECT NO: 19-24156-R

SHEET NO:

V - 101

SHEET TITLE:	VAPOR MITIGATION SYSTEM - NORTH END		
DRAWN BY:	BG	CHECKED BY:	MS

APPENDIX L

Manufacturer's Cut Sheets

REPORT OF VAPOR MITIGATION SYSTEM OPERATIONS AND MAINTENANCE

140 Cortland Avenue
Syracuse, New York

Prepared by:

438 New Karner Road
Albany, New York 12205

October 2021

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Attachment 02: Gauges

- Dwyer Series 2000 Magnehelic Pressure Gauge

Attachment 03: Pressure Switch

- Dwyer ADPS Differential Pressure Switch

Attachment 04: Low Pressure Alarm

- Diversitech Universal Alarm

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- Vapor Mitigation System Photo Description

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- Vapor Mitigation System Design

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1.0 INTRODUCTION

This report describes the vapor mitigation system installed at 140 Cortland Avenue, Syracuse, New York (Subject Property or SP) during the construction and renovations to the building in 2021. Operations & Maintenance procedures and schedules are also addressed in section 6, along with a troubleshooting guide in section 6.2.4. Appendices include Figure V-100 and V-101: Figures with 1st floor mitigation system component locations and post commissioning sub slab pressure field extension testing results and Figure V-102: Figure with roof fan locations (Appendix A), manufacturer information for equipment installed (Appendix B), photographs of installed components (Appendix C), original design plans for the system (Appendix D), and inspection procedures and logs (Appendix E).

1.1 Background

Chlorinated volatile organic compounds (CVOCs) have been documented in the soil, groundwater, and/or soil gas at the SP. An increased potential for soil vapor intrusion of the CVOC soil gas has been identified for the SP building. As a result, the VM system was designed and installed to reduce the potential for vapor intrusion from CVOCs.

1.2 Abbreviations

AOI - Area of Influence
EP - Extraction Point
PFE - Pressure Field Extension (sub slab)
SP - Subject Property
SSD - Sub Slab Depressurization
VM - Vapor Mitigation
"WC - Inches of Water Column
pCi/L - pico Curies per liter

2.0 SYSTEM DESCRIPTION

The VM System is a sub slab depressurization system. The system extracts vapor and air from below the concrete floor slab within the building footprint and discharges the air and vapor into the atmosphere above the roof of the building. Extracted vapor travels through sealed, negatively pressurized piping in the interior walls of the building and through fans located on the roof of the building to a positively pressurized exhaust above the roof the building.

3.0 SYSTEM DESIGN

3.1 Vapor Mitigation System Design

Alpine Environmental Services, Inc. prepared the design dated October 1, 2020, of the mitigation system, which was installed by Comfort Systems and their contractors, with Alpine Environmental Services, Inc. installing the system fans, monitoring panels, and performing the start up and commissioning of the VM system. The final design included five sub slab extraction lines traveling up to the roof of the SP building, where each extraction pipe has a dedicated fan, and electrical shut off. Monitoring panels with pressure gauges and low pressure alarms, are located at two first floor locations.

3.2 Area of Influence

The area to be covered by the vapor mitigation system is defined as the Area of Influence (AOI). The AOI has been identified as the entire footprint of the building.

3.3 Performance Criteria

Achieving the Performance Criteria is the goal of the mitigation system. A successful mitigation system shall meet or exceed the Performance Criteria. The Performance Criteria for the mitigation system is to create and maintain a 1 Pascal (0.004"WC) or greater vacuum below the ground floor concrete slab with respect to the room air. This is generally sufficient to interrupt the vapor intrusion pathway.

4.0 INSTALLED CONDITIONS & MATERIALS

4.1 General

The passive portions of the mitigation system installation were installed by Comfort Systems (or their contractors), incrementally as renovation and construction progressed. The system was fully activated October 19, 2021 by Alpine Environmental Services.

4.2 Piping and Extraction Points

4.2.1 Piping

Perforated 4-inch schedule 40 PVC pipe was specified for sub slab piping and 6-inch schedule 40 PVC pipe was specified for extraction line risers to the roof. Some of the above slab pipe has been enclosed in interior wall cavities/ chases. The fan connections were connected to the piping using flexible PVC couplings.

4.2.2 Extraction Lines

Extraction lines were constructed of schedule 40 PVC pipe with perforated sub slab horizontal pipe.

4.2.3 Exhaust Location

All installed exhaust pipes terminated through the roof and discharged away from any intakes or openings.

4.3 System Fan

Five fans were mounted on the five extraction riser pipes on the roof of the SP building. A listing of the fan sub-system numbers with the fan make/model, initial sub-system operating pressures, and acceptable operating pressure range is located in Tables 4.3.

The fans installed are Fantech RN4EC-4 fans, which are equipped with rheostat within the electrical connection box on the fan, which controls the speed of the fan. The fans were initially installed and tested with all speed controls set to the maximum speed (10 setting). To adjust the speed of an individual fan, open the electrical connection box on each fan and turn the dial to the desired setting with a small straight screw driver. See Figure 4.3 below.

Figure 4.3: Adjustment of the fan speed control

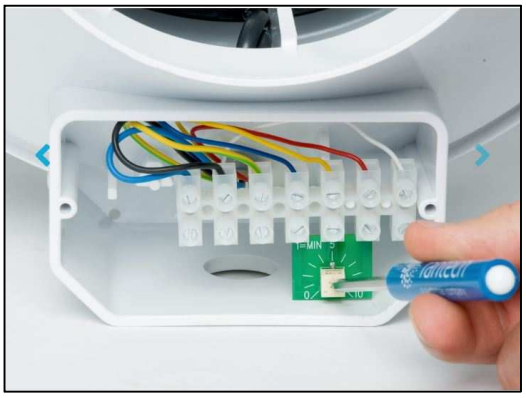


TABLE 4.3: Sub system ID and Initial Operating Pressures

	Initial Reading: October 19, 2021	Acceptable Operating Pressure Range for Fan
Sub-System 1 (Fan F1)		
Fantech RN4EC-4 Operating Pressure	1.6"WC	0.25 - 4.75"WC
Sub-System 2 (Fan F2)		
Fantech RN4EC-4 Operating Pressure	2.0"WC	0.25 - 4.75"WC
Sub-System 3 (Fan F3)		
Fantech RN4EC-4 Operating Pressure	1.4"WC	0.25 - 4.75"WC
Sub-System 4 (Fan F4)		
Fantech RN4EC-4 Operating Pressure	1.4"WC	0.25 - 4.75"WC
Sub-System 5 (Fan F5)		
Fantech RN4EC-4 Operating Pressure	1.2"WC	0.25 - 4.75"WC
"WC - inches of water column		

4.4 Electrical System

All system fans are connected to the SP building's 120 volt electrical system. Each sub system fan has an electrical disconnect switch adjacent to each fan on the roof.

The system low pressure alarms are connected to a DC transformer in an electrical outlet at the two monitoring panel locations.

4.5 System Monitoring

Each sub-system is connected to one of two monitoring panels located on the first floor. The panels consist of mechanical pressure gauges to monitor the real time operating pressure in each sub-system and a low pressure audible alarm. The two first floor monitoring panel locations are identified on Figures V-100 and V-101 in Appendix A.

4.6 System Labeling

VM system piping, pressure meters, monitoring panel alarms, and electrical outlets serving alarms, were labeled with identification, consistent with the design documents.

4.7 Permanent Sub Slab Pressure Monitoring Ports

Fourteen permanent sub slab pressure monitoring ports were installed at representative locations across the ground floor slab. The locations of the ports are indicated on Figures V-100 and V-101 in Appendix A along with initial sub slab pressure reading at system start up. Initial pressure readings at start up are also presented in table 4.6 below. The ports consist of a penetration all of the way through the concrete floor slab, with tubing to the sub slab installed into a access box.

Table 4.6: Pressure monitoring port values at start up

Monitoring Port ID	Pressure Reading ("WC) (10/19/2021)
PMP-01	-0.021
PMP-02	-0.103
PMP-03	-0.006
PMP-04	-0.153
PMP-05	-0.058
PMP-06	-0.006
PMP-07	-0.019
PMP-08	-0.605
PMP-09	-0.253
PMP-10	-0.343
PMP-11	-0.214
PMP-12	-0.153
PMP-13	-0.046
PMP-14	-0.007

5.0 POST INSTALLATION BALANCING & TESTING

5.1 Post Installation Testing

Following the installation of the VM system, the post installation testing included the following:

5.1.1 Verification that sub-system fans are operating normally.

5.1.2 Verification that system gauges are operating correctly by turning off system fans and observing results.

5.1.3 Post mitigation pressure field extension testing, results are located in Appendix A and Table 4.6 above.

5.1.4 Post mitigation air quality testing are provided under separate report issued by CHA Companies.

6.0 OPERATIONS & MAINTENANCE

6.1 Operating Procedures

6.1.1 System Startup

6.1.1.01 Review the manufacturer's information for individual system components.

6.1.1.02 Notify Building Representative of intent to start the VM system.

6.1.1.03 Confirm the fan electrical disconnect switch adjacent to the fan is in the off position.

6.1.1.04 Check the sub-system pressure monitoring gauge for a notification that the exhaust stack is not functional due to a sealed cover being in place.

6.1.1.05 Check exhaust discharge pipe for potential blockage (i.e. air tight cap or plastic cover from "moth balling", ice accumulation, etc.).

6.1.1.06 Inspect the sub-system piping and extraction points for breeches or deficiencies. Repair any observed deficiencies.

6.1.1.07 Turn the fan switch on.

6.1.1.08 Observe the fan. If unusual noise or no operation is observed, turn the fan switch off and proceed to Section 6.2 Maintenance.

6.1.1.09 If fan appears to operate normally, compare system pressure with previously recorded operating pressure and evaluate. If unacceptable difference in pressures is observed, turn electrical disconnect switch off and proceed to Section 6.2 Maintenance.

6.1.2 Shutdown

6.1.2.01 Review the O&M procedures including the manufacturer information for individual system components.

6.1.2.02 Notify Building Representative of intent to shutdown the mitigation system.
**Please note: In the event of an emergency or immediate concern, disconnect power from the sub-system at electrical disconnect prior to notification.

6.1.2.03 Turn off the electrical disconnect to the fan on the roof, adjacent to the fan.

6.1.2.05 If system is to be off for an extended amount of time, consider covering the exhaust pipe with a screw on flexible PVC cover. If the cover is applied over the exhaust stack, place a notification covering the entire pressure monitoring gauge for that sub-system. The notification should clearly identify the exhaust stack is not functional due to a sealed cover that is in place.

6.1.3 Operation

Following the start up (Section 6.1.1) of the mitigation system, no operational control or adjustments are needed. System monitoring and periodic Inspection during the system operation are performed to identify system problems and deficiencies.

6.1.4 System Monitoring

Each sub-system is connected to a single pressure gauge located in a monitoring panel at one of two first floor locations. See Figures V-100 and V-102 for panel locations. The monitoring panel contains a mechanical pressure gauge to monitor the operating pressure in each sub-system fan. The gauges are read in a positive scale, however, they are connected in a manner which indicates the vacuum (negative differential pressure) in each sub-system. The pressure readings can be compared to "acceptable" operating range in Table 6.2, below.

6.2 Maintenance

This section presents procedures and schedules for the maintenance of the equipment and instrumentation, troubleshooting information, and periodic inspection procedure and documentation.

6.2.1 System Fan

Each mitigation system fan is factory sealed. No maintenance is required and the fan casing should not be opened. Any attempt to open the fan casing shall void the manufacturer's warranty on the fan. The Fantech RN4EC-4 fans carry a five-year manufacturer's warranty. Fan Manufacturer's specifications are located in Appendix B.

6.2.2 System Monitoring Devices

No maintenance is required for the installed monitoring devices. For monitoring devices functioning abnormally, consult the troubleshooting guide in the user manuals for the specific equipment (Appendix B).

6.2.3 Periodic Inspection

A periodic inspection is recommended to verify the VM system is operating as designed. At a minimum, an annual inspection should be performed.

Inspection Procedures:

6.2.3.01 System Fans: Observe each fan during operation. Pay special attention to any abnormal noises coming from the fan, buzzing or scraping, or no sound at all. If abnormal noises (i.e. scraping, buzzing, cyclical pointed sounds, or no operational sound at all, etc.) are observed, refer to the Troubleshooting Guide (Section 6.2.4 of O & M Manual). Observe the exhaust stack for possible obstructions (i.e. ice, etc.). Please Note: The system fans are designed to be maintenance free, for the life of the fans. All moving parts of the system are sealed in the fan-housing unit. The fan-housing unit should only be opened by the fan manufacturer. Any attempt to open the fan-housing unit will destroy the factory-installed seals and void any warranty on the fan.

6.2.3.02 System Piping and Connections: Inspect the exposed System piping and connections for any breach or damage. Repair or replace any observed damage effecting System operation.

6.2.3.03 Slab/System Interface Seals (if accessible): Inspect the caulk/cold joint seal at each of the extraction points (a breach in the seal should produce an air leak noise when the system is in operation). If breech is observed, caulk with polyurethane caulk.

6.2.3.04 Pressure Gauges:

6.2.3.04a Test system pressure gauges for functionality. Remove input line or shut down sub-system to verify differential pressure gauges return to a zero reading. Replace any dysfunctional differential pressure gauges and restore sub-system operation.

6.2.3.04b Observe the operating pressure on the gauges at the monitoring panel for the system. Record the operating pressure in the table provided in Appendix D. Compare the operating pressure in to the initial operating pressure. See Table 6.2, below:

TABLE 6.2: Sub system initial Operating Pressure and Acceptable Operating Range.

Date:	Initial Reading: October 19, 2021
Sub-System 1 (Fan F1)	
Fantech RN4EC-4 Operating Pressure	1.6"WC
Acceptable Operating Range:	0.25 - 4.75"WC
Sub-System 2 (Fan F2)	
Fantech RN4EC-4 Operating Pressure	2.0"WC
Acceptable Operating Range:	0.25 - 4.75"WC
Sub-System 3 (Fan F3)	
Fantech RN4EC-4 Operating Pressure	1.4"WC
Acceptable Operating Range:	0.25 - 4.75"WC
Sub-System 4 (Fan F4)	
Fantech RN4EC-4 Operating Pressure	1.4"WC
Acceptable Operating Range:	0.25 - 4.75"WC
Sub-System 5 (Fan F5)	
Fantech RN4EC-4 Operating Pressure	1.2"WC
Acceptable Operating Range:	0.25 - 4.75"WC

If operating pressure has reduced by greater than 50%, evaluate the fan for problems. If no problems are identified with the fan, perform sub-slab pressure testing using a micro manometer to verify the sub-slab pressure field extension (PFE) is acceptable, that is greater than or equal to -0.004"WC using permanent sub slab monitoring ports (See Figure 100 in Appendix A for port locations) under the “new” operating pressure. If PFE is acceptable, document the change and the new PFE results in the table located in Appendix D. If acceptable PFE cannot be achieved, replace the system fan.

6.2.3.05 Electrical:

6.2.3.05a Observe electrical components for damage.

Repair damaged components.

6.2.3.05b Test system electrical disconnects / switches / for functionality by turning them to the "off" position, verifying System fan de-energizes. Restore disconnect / switch / circuit breaker to the "on" position, verifying System fan re-energizes. Repair any dysfunctional components.

6.2.3.06 Inspection Documentation: Complete an inspection documentation form (Appendix D) for each periodic inspection and maintain a logbook of the periodic inspections for the life of the mitigation system.

6.2.4 Troubleshooting Chart

Problem	Evaluation		Repair
1. Low pressure alarm, or low fan pressure (less than 0.25"WC)	a. Is the System fan running?	Y - Go to 1b N - Go to Repair	Replace Fan
	b. Check the system pressure on the pipe barb the gauge is connected to with a digital manometer. Is the operating pressure in the range of the acceptable operating range? Check the fan speed control for possible increase in fan speed.	Y - Go to 1c N - Go to Repair	Replace Fan
	c. Is tubing between fan barb and gauge connection kinked?	Y - Go to Repair N - Go to 1d	Cut out kink.
	d. Smoke test fan seal (Notify fire Department prior to smoke testing). Is fan seal leaking?	Y - Go to Repair N - Go to 1e	Replace Fan
	e. Inspect for blockage in or over exhaust stack (ie ice, etc). Blockage found?	Y - Go to Repair 1 N - Go to Repair 2	1. Clear Blockage or replace exhaust stack. 2. Replace Fan
Problem	Evaluation		Repair
3. Elevated Vapor Test Result	a. Are all system fans running at acceptable operating pressures?	Y - Go to 2b N - Go to Repair	Replace Fan(s) and re-test vapor.
	b. Check sub slab vacuum levels and compare to initial sub slab vacuum levels in Appendix A. Are sub slab vacuum levels close to the start up vacuum levels?	Y - Go to Repair	Consult Engineer.
		N - Go to Repair	Check fan(s) for malfunction. Check for pipe or seal breaches.
Problem	Evaluation		Repair
4. Electric *Electric evaluation and repair should be performed by a qualified electrician.	a. Is electric breaker serving the system is on?	N - Go to Repair Y - Go to 3b	Turn on electric breaker.
	b. Is electrical disconnect switch (serving fan) receiving power?	Y - Go to Repair N - Go to 3c	Check for defective disconnect switch and replace, otherwise replace fan.
	c. Are any circuit junctions receiving power?	Y - Go to Repair	Replace circuit from junction to fan.
		N - Go to Repair	Replace entire electrical circuit.

6.3 Safety

This section presents an outline of major safety concerns related to inspecting and repair work on the VM system.

6.3.1 General

Prior to performing any inspection or repair work at the site, familiarize yourself with the type of operations performed at the site, and assess any

hazards associated with the operations at the site. Formulate a plan to mitigate the site-specific hazard and implement the plan prior to performing the VM system inspection or repair.

6.3.2 Utility Hazards

Use extreme caution when drilling/penetrating the slab within the Subject Property. Known utilities are present under the floor slabs and outside the building. Call appropriate utility notification organization, review existing utility drawings, and contract private utility locators as appropriate, prior to any subsurface penetrations.

6.3.3 Fan Hazards

The VM system fan rotor continues to spin for some time following the removal of power to the fan. No object or body part should ever be inserted into the fan openings unless it can be verified that the fan blades have stopped spinning.

6.3.4 Electrical Hazards

The VMS fans are connected to 120 volt electrical system of the building. Standard safety precautions and procedures for working with electricity should be employed for any work on the vapor mitigation system electrical system repair/modification.

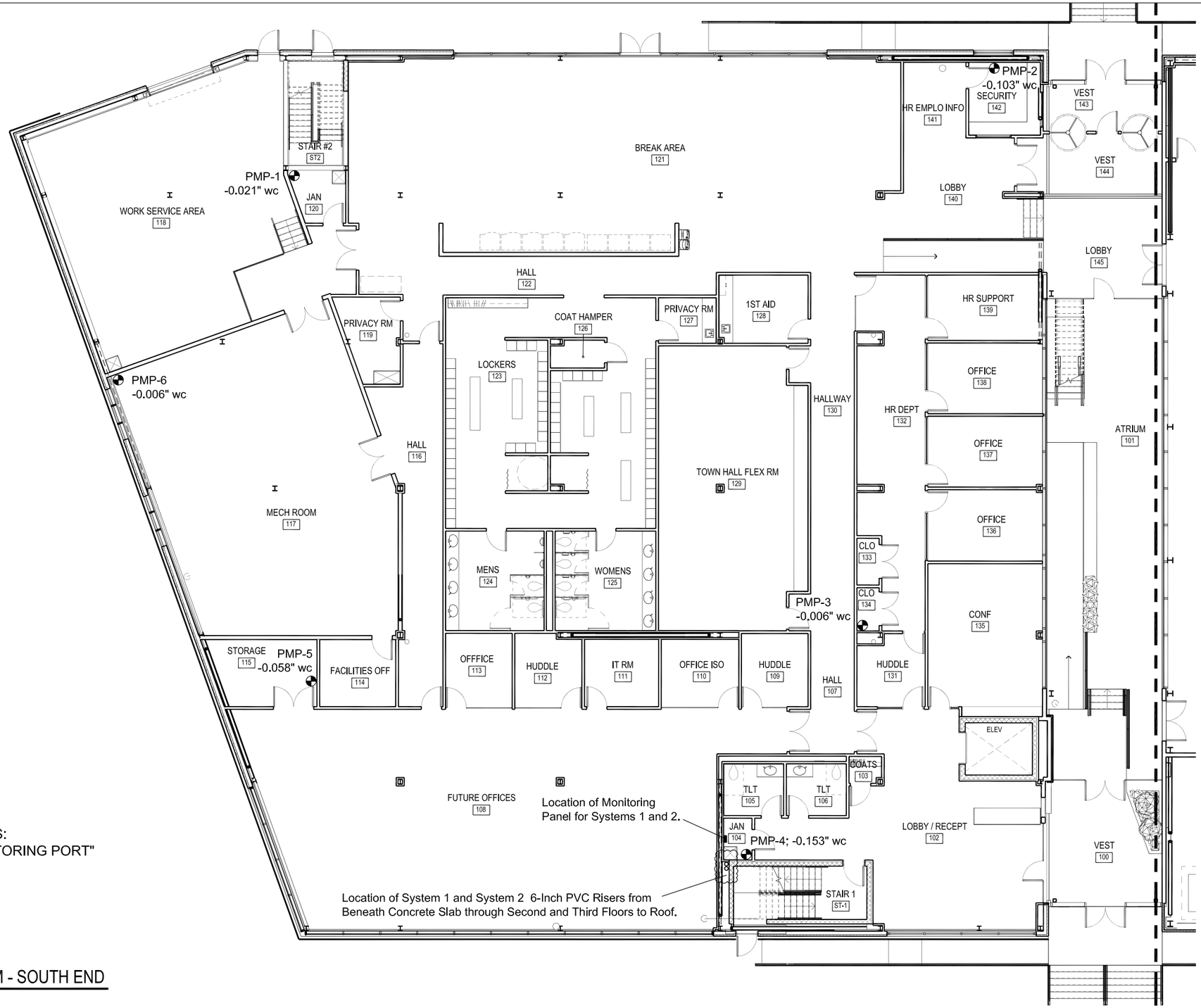
6.3.5 Inhalation Hazards

Avoid inhalation of the exhaust air stream of the VM system as it may contain CVOC soil gas.

Appendix A
Figures

Figures

V-100 1st Floor Vapor Mitigation System Components: South Portion of SP Building
V-101 1st Floor Vapor Mitigation System Components: North Portion of SP Building
V-102 Roof Fan Mounting Locations



NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"

1 VAPOR MITIGATION SYSTEM - SOUTH END
SCALE: 3/32" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: October 2021

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
FINAL	October 22, 2021

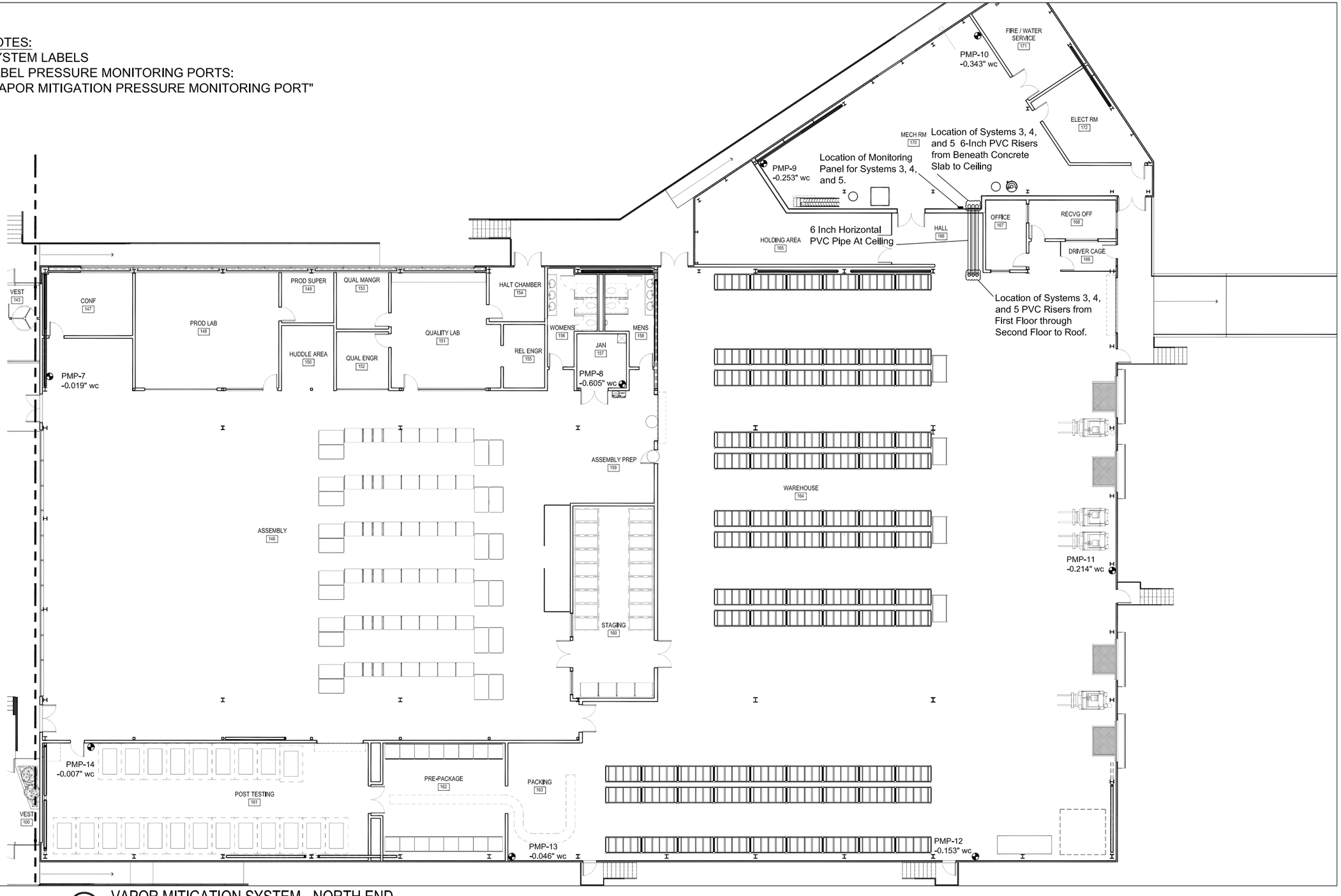
PROJECT NO: 19-24156-R

SHEET NO:

V - 100

SHEET TITLE:	VAPOR MITIGATION SYSTEM - SOUTH END		
DRAWN BY:	BG	CHECKED BY:	MS

NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"



1 VAPOR MITIGATION SYSTEM - NORTH END
SCALE: 3/64" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

DATE:
October 2021

140 Cortland Avenue
Syracuse, NY

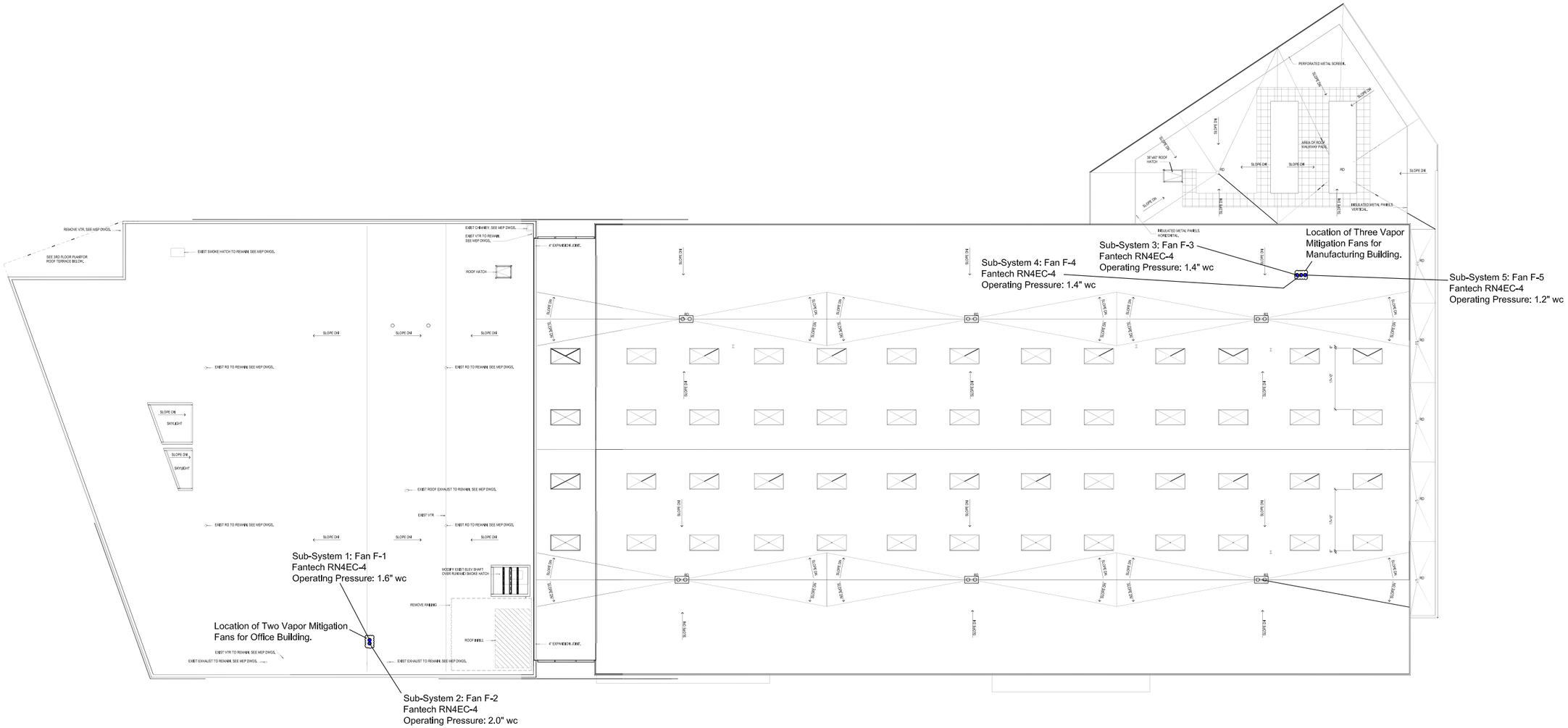
DESCRIPTION:	DATE:
FINAL	October 22, 2021

PROJECT NO: 19-24156-R

SHEET NO:

V - 101

SHEET TITLE:	VAPOR MITIGATION SYSTEM - NORTH END		
DRAWN BY:	BG	CHECKED BY:	MS



1 VAPOR MITIGATION SYSTEM - ROOF
SCALE: 1/32" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

DATE:
October 2021

140 Cortland Avenue
Syrause, NY

DESCRIPTION:	DATE:
FINAL	October 22, 2021

PROJECT NO: 19-24156-R

SHEET NO:

V - 102

SHEET TITLE:	VAPOR MITIGATION SYSTEM - ROOF		
DRAWN BY:	BG	CHECKED BY:	MS

Appendix B

Manufacturer Specifications/Information

Attachment 01: System Fans

- Fantech RN4EC-4

Attachment 02: Gauges

- Dwyer Series 2000 Magnehelic Pressure Gauge

Attachment 03: Pressure Switch

- Dwyer ADPS Differential Pressure Switch

Attachment 04: Low Pressure Alarm

- Diversitech Universal Alarm

Rn 4EC-4 Inline Radon Fan

Radon Fan, Inline, 4.5" Pipe, 4.25" max SP
Item #: 99923
Variant: 120V 1~ 60Hz

Rn4EC-4 Radon Fan is the most powerful product on the market for active radon mitigation applications where high suction and high flow are required. It is an excellent solution for high radon levels, poor sub-slab communication, multiple suction points and/or large sub slab footprint.

• Designed specifically for Active Soil Depressurization (ASD) mitigation applications
• High Suction, High Flow
• Dial your suction in with a built-in speed control
• Two soft anti-vibration couplers included
• Set up for a 4” PVC pipe
• For residential and commercial applications
• Air-tight housing - zero leakage
• UV resistant plastic housing
• UL Listed for safety and outdoor use
• HVI certified fan performance
• 5-year factory warranty

Rn4EC-4 can create 4.75” of suction while moving 20 cfm, or moving from 200 to 310 cfm when operating at only 0.5” of suction.

Inherently efficient and operationally stable at full and reduced speeds, Rn 4EC-4 fan arms the radon professional with installation methods not previously practical. Integrated control system allows for “dialing in” the fan speed necessary to achieve either the required sub-slab depressurization or required system air flow rate.

Manufactured from two molded plastic pieces seamlessly joined together. It is inherently and permanently airtight ensuring no Radon gas leakage. A large watertight electrical wiring enclosure ensures electrical installation quick and simple. Fan motor is thermal overload protected with automatic reset and can be installed both indoors or outdoors. Two anti-vibration couplers are included with the fan.

Technical parameters

Norminal data		
Voltage (nominal)	120	V
Frequency	60	Hz
Phase(s)	1~	
Input power	169	W
Input current	2.1	A
Impeller speed	4,084	r.p.m.
Air flow	max 555	cfm

Protection/Classification		
Enclosure class, motor	IP54	
Insulation class	B	
Certificate	HVI, cULus	

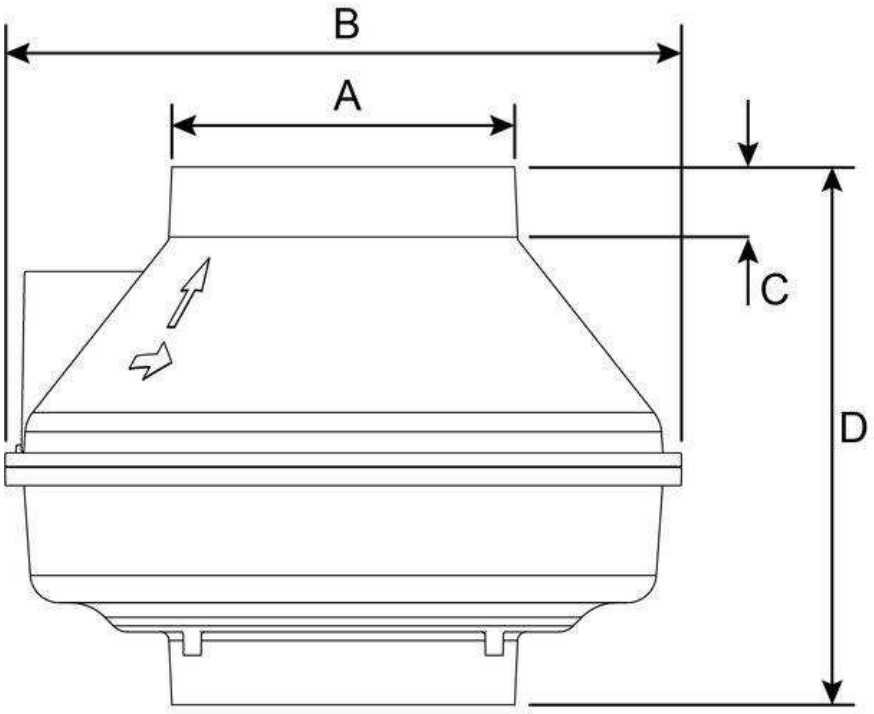
Dimensions and weights		
Weight	7.8	lb

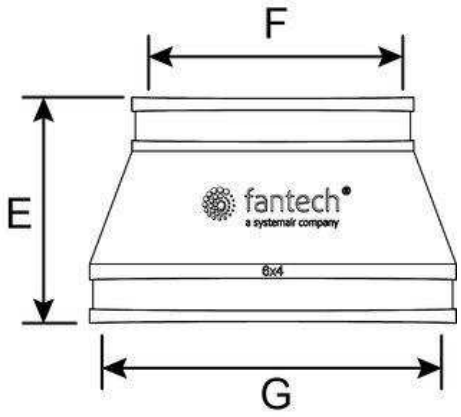
Performances

Model	Speed	Ctrl Voltage	HVI Certified Rating(s)					
			High Static/Low Flow			Low Static/High Flow		
			Inch WC	CFM	W	Inch WC	CFM	W
Rn4EC-4	100%	10V	4.5	39	141	0.2	320	174
	80%	8V	3.14	31	84	0.2	300	135
	60%	6V	1.56	20	33	0.2	210	52

NOTE: Performance is based on 4 inch diameter ducting.

Dimensions

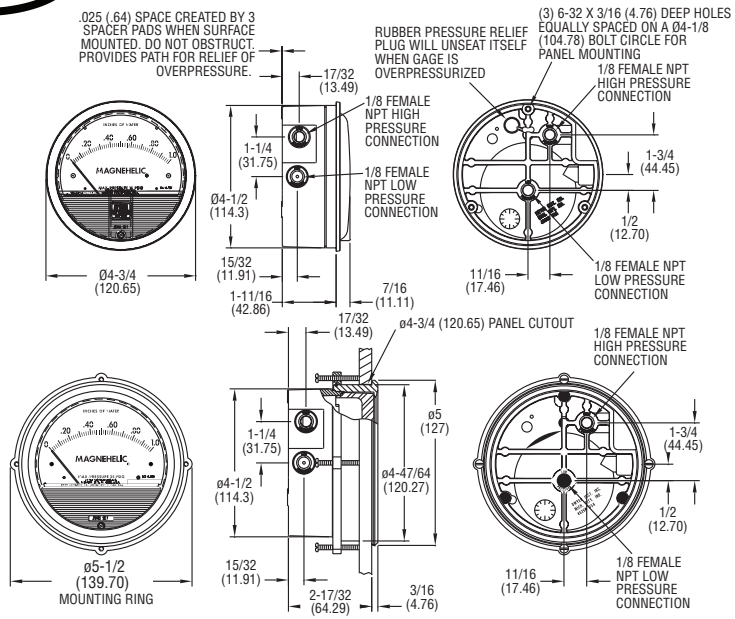




Model	A	B	C	D	E	F	G
Rn2EC	4 15/32 (114)	10 (254)	1 1/4 (32)	9 1/4 (235)	-	-	-
Rn4EC-3	5 7/8 (149)	11 1/2 (292)	1 1/4 (32)	9 1/4 (235)	4 (102)	3 1/2 (89)	6 (152)
Rn4EC-4	5 7/8 (149)	11 1/2 (292)	1 1/4 (32)	9 1/4 (235)	4 (102)	4 1/2 (114)	6 (152)

Dimensions in inches (mm).

Magnehelic® Differential Pressure Gage



**The blowout plug is not used on models above 180 inches of water pressure, medium or high pressure models, or on gages which require an elastomer other than silicone for the diaphragm.*

STANDARD GAGE ACCESSORIES: Two 1/8″ NPT plugs for duplicate pressure taps, two 1/8″ pipe thread to rubber tubing adapters and three flush mounting adapters with screws.

MP AND HP GAGE ACCESSORIES: Mounting ring and snap ring retainer substituted for 3 adaptors, 1/4" compression fittings replace 1/8" pipe thread to rubber tubing adaptors.

OVERPRESSURE PROTECTION: Standard Magnehelic® Differential Pressure Gages are rated for a maximum pressure of 15 psig and should not be used where that limit could be exceeded. Models employ a rubber plug on the rear which functions as a relief valve by unseating and venting the gage interior when over pressure reaches approximately 25 psig (excludes MP and HP models). To provide a free path for pressure relief, there are four spacer pads which maintain .023″ clearance when gage is surface mounted. Do not obstruct the gap created by these pads.

SPECIFICATIONS

Service: Air and non-combustible, compatible gases. (Natural Gas option available.)
Wetted Materials: Consult factory.
Housing: Die cast aluminum case and bezel, with acrylic cover. (MP model has polycarbonate cover).
Accuracy: ±2% of full scale (±3% on - 0, -100 Pa, -125 Pa, 10MM and ±4% on -00, - 00N, -60 Pa, -6MM ranges), throughout range at 70°F (21.1°C).
Pressure Limits: -20″ Hg to 15 psig.† (-0.677 bar to 1.034 bar); MP option: 35 psig (2.41 bar), HP option: 80 psig (5.52 bar).
Overpressure: Relief plug opens at approximately 25 psig (1.72 bar), standard gages only. The blowout plug is not used on models above 180 inches of water pressure, medium or high pressure models, or on gages which require an elastomer other than silicone for the diaphragm.
Temperature Limits: 20 to 140°F (-6.67 to 60°C). *Low temperature models available as special option.
Size: 4″ (101.6 mm) diameter dial face.
Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.
Process Connections: 1/8″ female NPT duplicate high and low pressure taps - one pair side and one pair back.
Weight: 1 lb 2 oz (510 g), MP & HP 2 lb 2 oz (963 g).
Agency Approvals: RoHS.

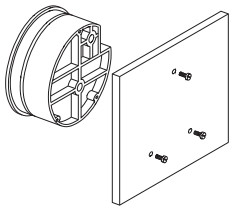
†For applications with high cycle rate within gage total pressure rating, next higher rating is recommended. See Medium and High pressure options.

Note: May be used with hydrogen when ordering Buna-N diaphragm. Pressure must be less than 35 psi.

INSTALLATION

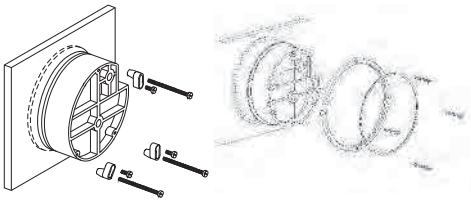
Select a location free from excessive vibration and where the ambient temperature will not exceed 140°F (60°C). Also, avoid direct sunlight which accelerates discoloration of the clear plastic cover. Sensing lines may be run any necessary distance. Long tubing lengths will not affect accuracy but will increase response time slightly. Do not restrict lines. If pulsating pressures or vibration cause excessive pointer oscillation, consult the factory for ways to provide additional damping.
All standard Magnehelic® Differential Pressure Gages are calibrated with the diaphragm vertical and should be used in that position for maximum accuracy. If gages are to be used in other than vertical position, this should be specified on the order. Many higher range gages will perform within tolerance in other positions with only rezeroing. Low range models of 0.5" w.c. plus 0.25" w.c. and metric equivalents must be used in the vertical position only.

SURFACE MOUNTING



Locate mounting holes, 120° apart on a 4-1/8" dia. circle. Use No. 6-32 machine screws of appropriate length.

FLUSH MOUNTING



Provide a 4-9/16" dia. (116 mm) opening in panel. Provide a 4-3/4" dia. (120 mm) opening for MP and HP models. Insert gage and secure in place with No. 6-32 machine screws of appropriate length, with adapters, firmly secured in place.

PIPE MOUNTING

To mount gage on 1-1/4" - 2" pipe, order optional A-610 pipe mounting kit.

TO ZERO GAGE AFTER INSTALLATION

Set the indicating pointer exactly on the zero mark, using the external zero adjust screw on the cover at the bottom. Note that the zero check or adjustment can only be made with the high and low pressure taps both open to atmosphere.

OPERATION

Positive Pressure: Connect tubing from source of pressure to either of the two high pressure ports. Plug the port not used. Vent one or both low pressure ports to atmosphere.
Negative Pressure: Connect tubing from source of vacuum or negative pressure to either of the two low pressure ports. Plug the port not used. Vent one or both high pressure ports to atmosphere.
Differential Pressure: Connect tubing from the greater of two pressure sources to either high pressure port and the lower to either low pressure port. Plug both unused ports.
When one side of the gage is vented in dirty, dusty atmosphere, we suggest an A-331 Filter Vent Plug be installed in the open port to keep inside of gage clean.

A. For portable use of temporary installation use 1/8" pipe thread to rubber tubing adapter and connect to source of pressure with flexible rubber or vinyl tubing.
B. For permanent installation, 1/4" O.D., or larger, copper or aluminum tubing is recommended.

MAINTENANCE

No lubrication or periodic servicing is required. Keep case exterior and cover clean. Occasionally disconnect pressure lines to vent both sides of gage to atmosphere and re-zero. Optional vent valves should be used in permanent installations. The Series 2000 is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

WARNING

Attempted field repair may void your warranty. Recalibration or repair by the user is not recommended.

TROUBLE SHOOTING TIPS

Gage won't indicate or is sluggish.

1. Duplicate pressure port not plugged.
2. Diaphragm ruptured due to overpressure.
3. Fittings or sensing lines blocked, pinched, or leaking.
4. Cover loose or "O"ring damaged, missing.
5. Pressure sensor, (static tips, Pitot tube, etc.) improperly located.
6. Ambient temperature too low. For operation below 20°F (-7°C), order gage with low temperature, (LT) option.

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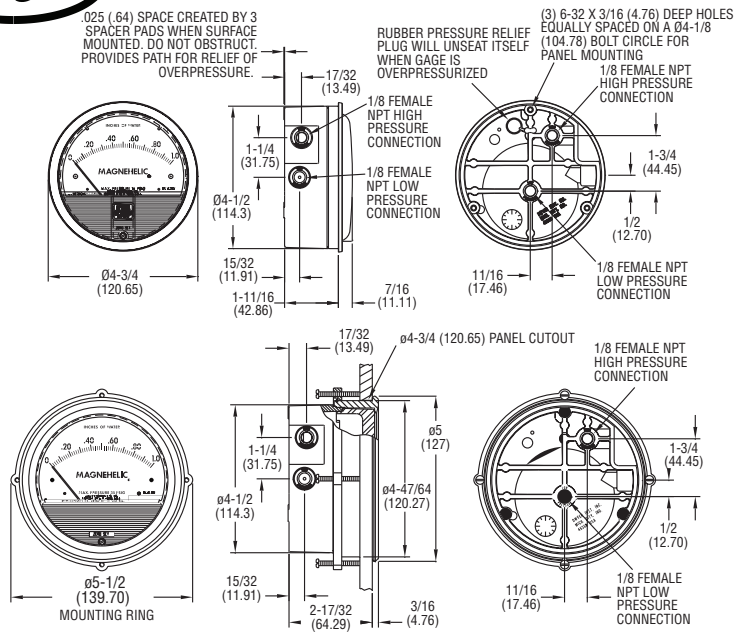
Magnehelic® Differential Pressure Gage
INSTRUCCIONES Y LISTA DE PARTES



(El tapón de goma no es usado en los modelos sobre 180 pulgadas de presión de agua, modelos de presión media o alta, o en instrumentos que requieren un elastizado en cualquier otro material que no sea silicona para el diafragma.)

Accesorios: Tapones 1/8" NPT para las conexiones duplicadas, dos adaptadores de rosca 1/8" NPT a tubo de goma; y tres adaptadores para montaje al ras y tornillos.

Accesorios para Los Modelos MP y HP: El anillo de montaje y el retensor del anillo de presión son substituidos por 3 adaptadores, accesorios de compresión de 1/4" remplazan a los adaptadores de rosca 1/8" a tubo de goma.

Protección Para Sobrepresión: Los Manómetros Diferenciales Magnehelic Estándar están clasificados para una presión máxima de 15 psi y no se deberían de usar donde el límite puede excederse. Los modelos emplean un tapón de goma en el trasero que funciona como una válvula de alivio desmontándose y ventilando el interior del instrumento cuando la sobrepresión alcanza aproximadamente 25 psig. (Los modelos MP y HP son excluidos) Para proveer un camino libre para el alivio de presión, el instrumento viene con rodilleras que mantienen un espacio de .023" cuando el instrumento es montado en superficie. No bloque el espacio creado por estas rodilleras.

† Para aplicaciones con alto ciclo de velocidad dentro de la clasificación de presión total del instrumento, la próxima clasificación mas alta es recomendada. Vea las opciones de media y alta presión.

El instrumento puede ser usado con hidrogeno cuando se ordena con diafragma de Buna-N. La presion tiene que ser menos de 35 psi.

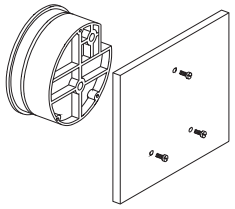
ESPECIFICACIONES

Servicio: aire y gases no combustibles, gases compatibles. (ópcion disponible para uso con gas natural).
Materiales Mojados: Consulte con la fábrica.
Carcasa: Caja y anillo de retención de aluminio fundido a presión con tapadera de acrílico. (El modelo MP tiene la tapadera de policarbonato.)
Exactitud: ±2% de fondo de escala a 21 °C
Mod. 2000-0 ±3%; Mod. 2000-00 ±4%
Límite de Presión: -20 Hg. a 15 psig. † (-0.677 bar a 1,034 bar); opción MP: 35 psig (2.41 bar), opción HP: 80 psig (5.52 bar).
Sobrepresión: El tapón de alivio se abre aproximadamente a los 25 psig, modelos estandard únicamente. El tapón de goma no es usado en los modelos sobre 180 pulgadas de presión de agua, modelos de presión media o alta, o en instrumentos que requieren un elastizado en cualquier otro material que no sea silicio para el diafragma.
Límite de Temperatura: -6.67 a 60ºC. * Modelos de baja temperatura disponibles como opción especial.
Dimensiones: diám. 120,65 mm x 55,6 prof.
Orientación de Montaje: El diafragma debe ser usado solo en posición vertical. Consulte con la fábrica para otras orientaciones de posición.
Conexiones: 1/8" NPT para alta y baja presión, duplicadas (atrás, a los lados).
Peso: 510 g, MP y HP 963 g.
Aprobación de la agencia: RoHS.

Instalacion

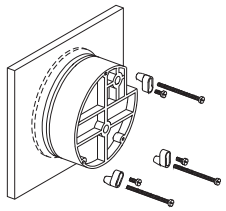
Seleccione un lugar libe de exceso de vibraciones, y donde la temperatura ambiente no supere los 60°C. Evite luz solar directa, para evitar decoloración de la cubierta plástica. Las conexiones de proceso pueden tener cualquier longitud sin afectar la exactitud, pero pueden extender el tiempo de respuesta del instrumento. Si hay pulsación de presión o vibración, consulte a fábrica sobre medios de amortiguación.
Los MAGNEHELIC han sido calibrados con el diafragma vertical, y deben ser usados en esas condiciones. Para otras posiciones, se debe especificar en la orden de provisión. Los de rango elevado pueden ser usados en diversas posiciones, pero se debe reajustar el cero. Los modelos de la serie 2000-00 y equivalentes métricos deben ser usados solo verticalmente.

Montaje en Superficie



Perfore tres orificios separados 120° sobre una circunferencia de 105 mm de diám. y sostenga el instrumento con tres tornillos 6-32 de long. apropiada.

Montaje alineado



Perfore un circulo de 115 mm de diám. en el panel, y sostenga el instrumento mediante los.

Montaje Sobre Pipa

Para montar el instrumento sobre pipas de 32 a 50 mm de diám., ordene el adaptador opcional A-610.

Puesta a Cero Después de Instalar

Deje las conexiones de presión abiertas a atmósfera y ajuste a cero desde tornillo del panel frontal.

Operacion

Presión Positiva: Conecte la tubería desde la fuente de presión a cualquiera de las dos conexiones de alta presión (HIGH), bloqueando la no usada; Las conexiones de baja (LOW) presión pueden dejarse uno o los dos abiertos a la atmósfera.
Presión Negativa: Repita el procedimiento anterior, conectado en este caso las conexiones de baja presión (LOW). Deje las otras conexiones abiertas.
Presión diferencial: Conecte el tubo correspondiente a la presión más positiva al cualquiera de los conectores de alta presión (HIGH) bloqueando el no usado, y la más baja presión o presión negativa (vacío) al conector de baja presión (LOW). Puede usarse cualquier conector de cada par, dejando siempre uno bloqueado. Si se deja una conexión abierta a la atmósfera, se recomienda el uso de un filtro tipo A-331 en el lugar correspondiente para mantener limpio el interior del instrumento. Para uso portable, o instalación temporaria, uso adapta dores para rosca de tubo de 1/89 a tubo flexible, y conecte a proceso mediante una tubería de goma, o equivalente. Para instalación permanente, se recomienda el uso de tubo de cobre o aluminio de por lo menos 1/4" de diám. exterior.

No se requiere mantenimiento específico alguno, ni lubricación. Periódicamente, desconecte el instrumento, ventee la presión acumulada, y reajuste el cero. Para instalaciones permanentes, se debe usar un juego de válvulas de montaje permanente para el venteo.
El instrumento de Serie 2000 no puede ser re parado en el campo y debería de ser regresado si reparos son necesarios (Reparos en el campo no deben de ser intentados y pueden cancelar la garantía.). Asegurarse de incluir una descripción breve del problema más cualquier notas pertinentes a la aplicación para devolución de productos antes de enviar el instrumento.

Cuidado! : La recalibración en campo puede invalidar la garantía. No se recomienda la recalibracion por parte del usuario. En caso necesario envie el instrumento con transporte pago a:

Localización De Fallas

• *El instrumento no indica, o es lento en reacción.*
1. Conexión duplicada abierta.
2. Diafragma roto por sobrepresión.
3. Tubería de conexión perforada, con pérdidas o pinchazos.
4. Anillo de retención flojo, u "O " ring dañado.
5. Conexión a proceso indebida o inadecuada.
6. Temperatura muy baja. Para este caso ordene tipos LT (baja temperatura).

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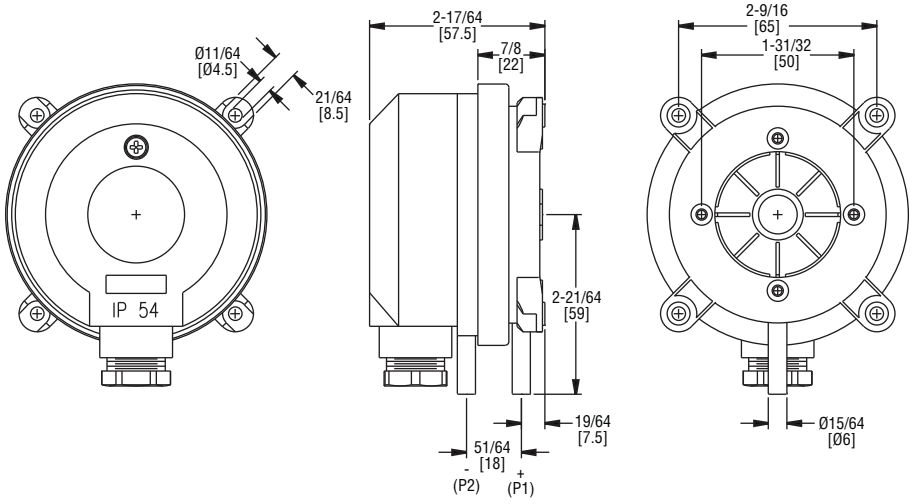
Series ADPS Differential Pressure Switch

Specifications - Installation and Operating Instructions



The Series ADPS Adjustable Differential Pressure Switch is designed for overpressure, vacuum, and differential pressure applications. The scaled adjustment knob allows changes to the switching pressure to be made without a pressure gage. The ADPS is available with settings from 0.08˝ w.c. (20 Pa) to 20˝ w.c. (5000 Pa). The silicone diaphragm and PA 6.6 body make the Series ADPS perfect for use with air and other noncombustible gases. The Series ADPS can be used in monitoring air filters, ventilators, and industrial cooling-air circuits along with controlling air and fire-protection flaps and many other applications.

Use only with mediums such as air, or other noncombustible or non-aggressive gases. Otherwise operating faults or accidents may occur.

Mounting Switch

First check the pressure switch to ascertain whether any damage is visible on the housing. If the housing is leaky because of damage, the pressure switch must not be used.

Switching pressure specifications apply to vertical installation which is also the recommended position with pressure connections pointing downwards.

Only if there is no potential for condensate forming can you mount the pressure switch horizontally. In this case, however, the switching values are approximately 0.08 in w.c. (20 Pa) higher as indicated on the scale. In the horizontal position, the pressure switch should be mounted 'lying down' only (that is to say with the electrical connections pointing upwards). Do not mount the pressure switch in a hanging position (that is to say, not 'overhead' with the electrical connections pointing downwards). Otherwise the device will function inaccurately.

a) Mounting with screws or brackets

1. To mount the pressure switch, L-shaped A-288 and S-shaped A-289 mounting brackets can be ordered separately. To secure the device on the rear side of the housing, only use the sheet metal screws (3.5 x 8 mm) which are supplied together with the mounting brackets. Under no circumstances must you use longer screws. Otherwise, the base of the housing could be punctured resulting in the pressure switch leaking.

2. You can also mount the pressure switch directly on a wall. To do this use screws with a maximum diameter of 0.315˝ (8.0 mm), if you use the outer mounting lugs to screw the device in place. Do not tighten the screws so much that the base of the device is deformed. Otherwise, the pressure switch can be shifted out of position, or leak.

SPECIFICATIONS

Service: Air and noncombustible, compatible gases.
Wetted Materials: Diaphragm material: Silicone; Housing material & switch body: POM and PA 6.6; Cover: Polystyrene.
Temperature Limits: Process ambient temperature from -4 to 185˚F (-20 to 85˚C).
Pressure Limits: Max. Operating Pressure: 40" W.C. (10 kPa) for all pressure ranges.
Switch Type: Single-pole double-throw (SPDT).
Repeatability: ±15% FS.
Electrical Rating: Standard: Max., 1.5A/250 VAC, max. switching rate: 6 cycles/min.; Gold Contact Option: 0.4 A/ 250 VAC.
Electrical Connections: Push-on screw terminals. M20x1.5 with cable strain relief or optional 1/2˝ NPT connection.
Process Connections: 5/16˝ (7.94 mm) outside diameter tubing, 1/4˝ (6.0 mm) inside diameter tubing.
Mounting Orientation: Vertically, with pressure connections pointing downwards.
Mechanical Working Life: Over 10^6 switching operations.
Weight: 5.6 oz (160 g).
Enclosure Rating: IP54.
Agency Approvals: CE, RoHS.

Installing Hoses

Important: Pressure tubing cannot be kinked. Pay particular attention to this point if you run hoses over an edge. It is better to form a loop. If the hoses are kinked, the device cannot function accurately.

a) For connection to the pressure switch two fittings inherent in the housing are provided for hoses with an internal diameter of 1/4˝ (6.0 mm).

1. Connect a hose with the higher pressure to socket P1 which is located on the lower section of the housing.

2. Connect a hose with the lower pressure to socket P2 which is located on the middle section of the housing.

After you have installed the hoses, it is absolutely essential to check them for tightness of fit at the connection points and to make sure that they run without any kinks.

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Electrical Connection
Work on electrical installations must only be carried out by electricians who are specifically trained for this purpose.

⚠CAUTION First make sure that there is no voltage on the connecting cable while you are working on the electrical connections. Otherwise, a possible electric shock may result and the connected equipment may be damaged. The connecting cable can be run to the pressure switch from three sides, according to choice. The screw cable connection has a plug-in design for this purpose. Rotate protective cover accordingly.

For cable gland models, the seal in the screw cable connection is designed for cables with alternative sheath diameters of 0.275″ (7 mm) or 0.393″ (10 mm). Only use these sizes – otherwise the screw cable connection cannot seal adequately.

1. If using a 0.275″ (7 mm) connecting cable, you can line up the press nut, the plain washer and the sealing ring directly on the cable.

2. If using a 0.393″ (10 mm) connecting cable, you must first break the inner rubber ring out of the sealing ring directly on the cable. Then line up the press nut, the plain washer and the sealing ring on the cable.

Wiring
The switching device in this pressure switch is designed as a change-over contact as can be seen from the wiring diagram (Figure 1). The rest position is shown in Figure 1 (pressure below the activation switch point on dial).

1. In the instance where pole 3 (COM) closes to Pole 2, the pressure is increasing (NO).

2. In the instance where pole 3 (COM) closes to Pole 1, the pressure is decreasing (NC).

Protect the feed line (to pole 3) by fuse, either in control system or along the line, and do so with:

1. Max. 1.5 A / 250 VAC, if you are loading the contact with an resistive load;

2. Max 0.4 A / 250 VAC, if you are loading the contact with an inductive load (such as relay);

3. Max. 0.1 A / 250 VDC, if you are using the pressure switch in the weak current version with gold-plated contacts.

The connections are intended for crimp-type sockets, 0.25 in (6.3 mm).

1. Make sure the crimp connection is perfect, and that the cable lugs fit properly on to the connections.

2. If you do not have any crimp-type sockets available, you can also use the cable lugs which are supplied with mounted screw terminals. However, these are only intended for rigid copper wire.

3. On flex, it is either necessary to crimp on strand end sleeves – and then you can also screw the strands on – or to crimp cable lugs on directly as previously described.

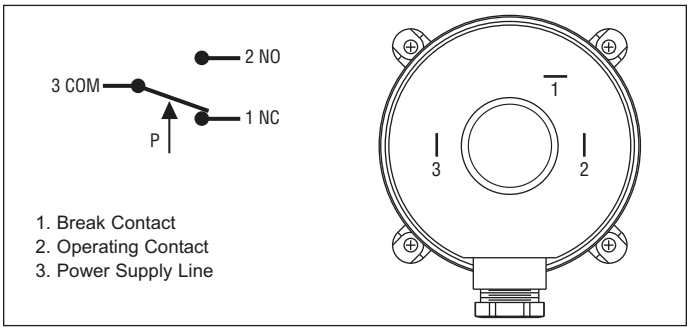

Figure 1

Setting the Pressure Range
Make absolutely certain that there is no voltage on the electrical connections before you carry out any setting on the pressure switch. Otherwise, it could be fatal if you accidentally touch the electrical connections or the metal adjusting screw while you are performing the settings.

a) Use the adjustment dial to set the pressure which should trip the switch on an increase of pressure.

1. The indications on the dial are only correct for the vertical mounting position.

2. When the pressure falls, the switch returns to its resting position as soon as the pressure falls below the dead band.

Attaching Cover
a) Insert the screw cable connection into the recess provided for this purpose on the housing.

b) Then place the housing cover in position and screw it down evenly on to the pressure switch.

Testing the Setting
Do not operate the system until the housing is closed. Otherwise there is the possibility of an electric shock if you accidentally touch live parts.
Check the trip and reset pressures by slowly increasing the pressure and then allowing it to fall again.

IMPORTANT: Observe the maximum permissible operating pressure of 40″ w.c. (10 kPa) which is indicated in the data sheet. Otherwise the pressure switch may be damaged.

MAINTENANCE
Upon final installation of the Series ADPS Adjustable Differential Pressure Switch, no routine maintenance is required. A periodic check of system operation is recommended. The Series ADPS is not field serviceable and should be returned if repair is needed (field repair should not be attempted and may void warranty). Be sure to include a brief description of the problem plus any relevant application notes. Contact customer service to receive a return goods authorization number before shipping.

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Universal Alarm

DIVERSITECH

Installation Instructions

DESCRIPTION

The Universal Alarm may be connected to existing 24VAC control circuits to indicate possible system trouble. The Universal alarm may be connected across normally closed switches such as those found in condensate pumps and condensate overflow switch found in typical residential HVAC systems.

The Universal Alarm may be operated on "phantom" current provided by typical HVAC contactor coils. This allows the alarm to be wired in parallel with existing condensate pump shut off circuits not equipped for alarm contacts.

The alarm is provided with 2 wire nuts, a sheet metal screw, and double sided tape for convenient installation options.

DESCRIPCIÓN

Se puede conectar la Universal Alarm a circuitos de control de 24 VAC existentes para indicar posibles problemas de sistema. También se puede conectar la Universal Alarm a través de interruptores normalmente cerrados, como los que se encuentran en bombas de condensación y en interruptores de condensación para evitar desbordes, que se encuentran en sistemas residenciales típicos de HVAC.

La Universal Alarm se puede hacer funcionar con corriente "fantasma" alimentada por las bobinas típicas de contactores de HVAC. Esto permite el cableado de la alarma en paralelo con circuitos existentes de desconexión de bombas de condensación que no están equipados para contactos de alarmas.

La alarma viene con cómodas opciones de instalación mediante 2 tuercas para cables, un tornillo de plancha (cabeza plana) y cinta biadhesiva.

DESCRIPTION

L'Alarme Universelle peut être raccordée à un circuit de contrôle de 24 V CA existant pour signaler les défaillances possibles d'un système. L'Alarme Universelle peut être raccordée aux bornes d'un interrupteur normalement fermé comme ceux que l'on trouve dans les pompes à condensats et dans les commutateurs de trop-plein de condensats des systèmes de CVC résidentiels habituels.

L'Alarme Universelle peut fonctionner à partir de l'alimentation fantôme offerte par les bobines de contact des systèmes de CVC habituels. Cela permet de câbler l'alarme en parallèle avec les circuits de coupure de la pompe de condensats existants qui ne sont pas dotés de bornes pour actionner une alarme.

L'alarme est pourvue de deux connecteurs de fils, d'une vis pour métal et de ruban gommé à deux faces pour offrir plusieurs options d'installation.

Instructions for wiring normally open switch systems (For the CP-22 or other condensate pumps).
Instrucciones para el cableado de sistemas con interruptor normalmente abierto (Para la CP-22 u otras bombas de condensación).
Instructions pour le câblage des systèmes dotés d'un interrupteur normalement ouvert (pour le modèle CP-22 ou d'autres pompes à condensats).

1. Turn off the power to the system.
2. Install the condensate pump per the manufacturer's instructions.
3. Cut the wire between the transformer and the unit/contactor/thermostat.
4. Connect the Universal Alarm wires shown in diagram A.
5. Restore power to the system.
6. Test the alarm by manually causing the pump to go into alarm condition.

1. Desconecte la alimentación al sistema.
2. Instale la bomba de condensación según las instrucciones del fabricante.
3. Corte el cable entre el transformador y la unidad/contactor/termostato.
4. Conecte los cables de la Universal Alarm que se muestran en el diagrama A.
5. Restablezca la alimentación al sistema.
6. Pruebe la alarma. Para esto provoque manualmente el estado de alarma en la bomba.

1. Couper l'alimentation du système.
2. Installer la pompe à condensats selon les directives du fabricant.
3. Couper le fil entre le transformateur et l'ensemble appareil, contacteur et thermostat.
4. Raccorder les fils de l'Alarme Universelle comme illustré à la figure A.
5. Réalimenter le système.
6. Vérifier l'alarme en forçant la pompe à déclencher l'alarme.

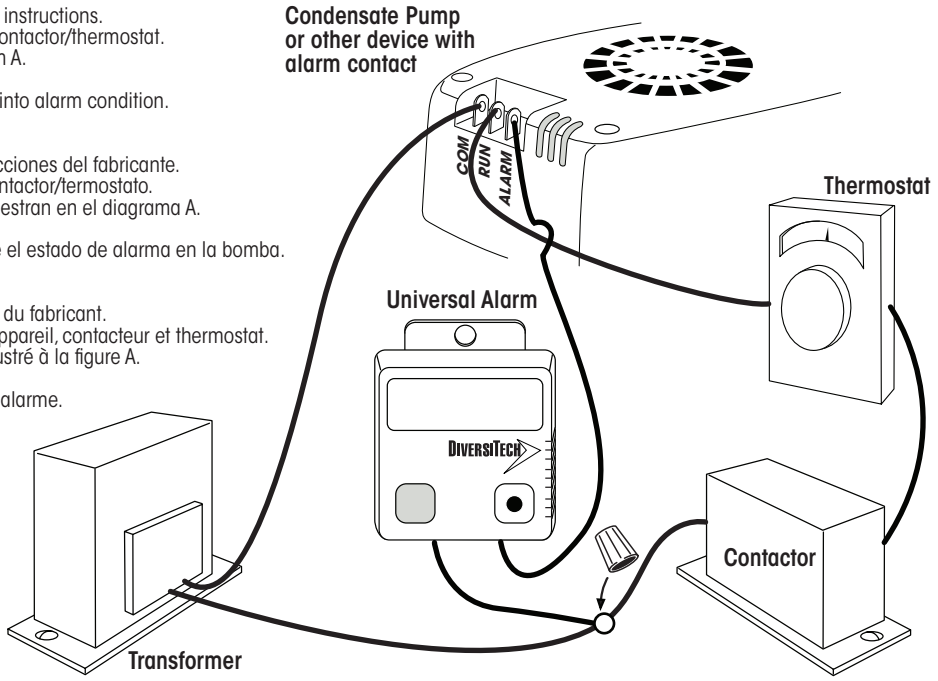


Diagram A

Instructions for wiring normally closed 2 wire float switch systems (For CC-1, SOS-1 or other 2 wire float switches).

Instrucciones para el cableado de sistemas con interruptor de flotación de 2 cables normalmente cerrado (Para CC-1, SOS-1 u otros interruptores de flotación de 2 cables).

Instructions pour le câblage des systèmes dotés d'un interrupteur à flotteur normalement fermé à deux fils (pour les modèles CC-1, SOS-1 ou autres interrupteurs à flotteur à deux fils).

1. Turn off the power to the system.
2. Install the float switch per the manufacturer's instructions.
3. Connect each Universal Alarm wire to each junction point where the float switch is already connected as shown in diagram B.
4. Restore power to the system.
5. Test the alarm by manually actuating the float switch.

1. Desconecte la alimentación al sistema.
2. Instale el interruptor de flotación según las instrucciones del fabricante.
3. Conecte cada cable de la Universal Alarm a cada punto de unión en el que el interruptor de conexión ya está conectado, como se muestra en el diagrama B.
4. Restablezca la alimentación al sistema.
5. Pruebe la alarma. Para esto accione manualmente el interruptor de flotación.

1. Couper l'alimentation du système.
2. Installer l'interrupteur à flotteur selon les directives du fabricant.
3. Raccorder chaque fil de l'Alarme Universelle à chacun des points de raccordement auxquels l'interrupteur à flotteur est déjà connecté comme illustré à la figure B.
4. Réalimenter le système.
5. Vérifier l'alarme en activant manuellement l'interrupteur à flotteur.

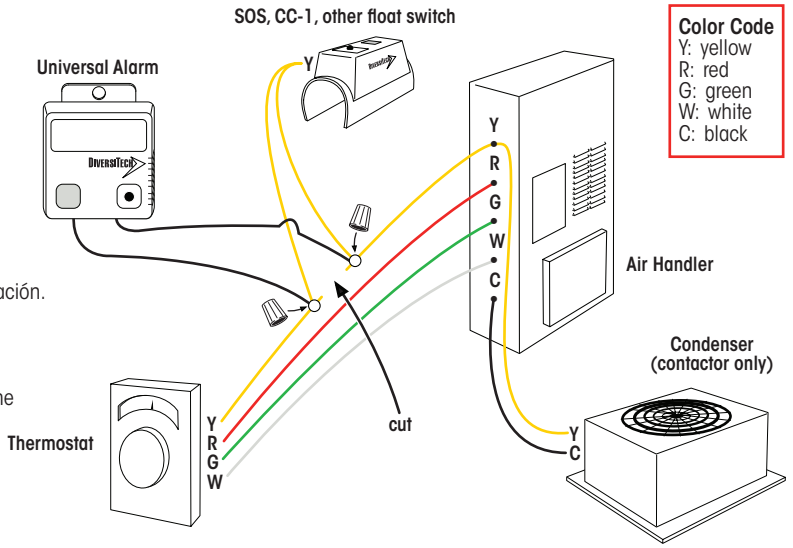


Diagram B

Instructions for wiring normally closed 5 wire float switch systems (For WS-1, SOS-2 or other 5 wire float switches).

Instrucciones para el cableado de sistemas con interruptor de flotación de 5 cables normalmente cerrado (Para WS-1, SOS-2 u otros interruptores de flotación de 5 cables).

Instructions pour le câblage des systèmes dotés d'un interrupteur à flotteur normalement fermé à cinq fils (pour les modèles WS-1, SOS-2 ou autres interrupteurs à flotteur à cinq fils).

1. Turn off the power to the system.
2. Connect one wire of the Universal Alarm to the red wire junction as shown in diagram C.
3. Connect the other wire of the Universal Alarm to the white wire of the float switch as shown in diagram C.
4. Restore power to the system.
5. Test the alarm by manually actuating the float switch.

1. Desconecte la alimentación al sistema.
2. Conecte un cable de la Universal Alarm al empalme del cable rojo, como se muestra en el diagrama C.
3. Conecte el otro cable de la Universal Alarm al cable blanco del interruptor de flotación, como se muestra en el diagrama C.
4. Restablezca la alimentación al sistema.
5. Pruebe la alarma. Para esto accione manualmente el interruptor de flotación.

1. Couper l'alimentation du système.
2. Raccorder un fil de l'Alarme Universelle au point de raccordement du fil rouge comme illustré à la figure C.
3. Raccorder l'autre fil de l'Alarme Universelle au fil blanc de l'interrupteur à flotteur comme illustré à la figure C.
4. Réalimenter le système.
5. Vérifier l'alarme en activant manuellement l'interrupteur à flotteur.

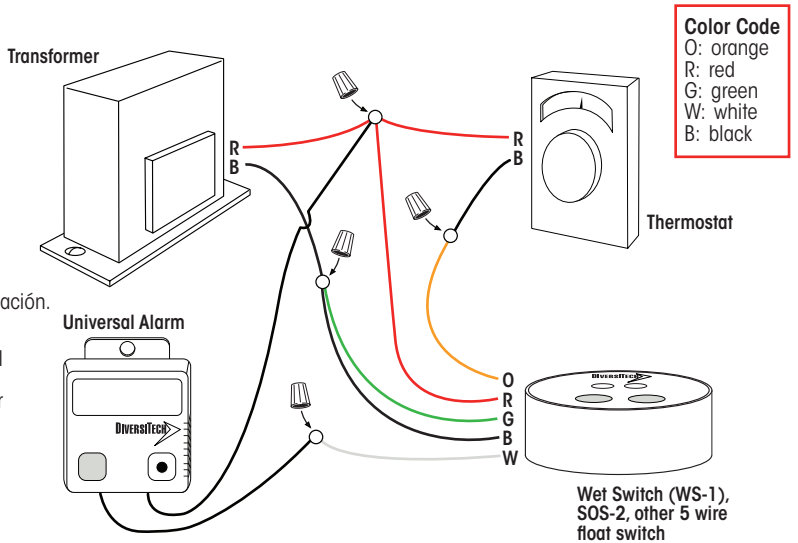
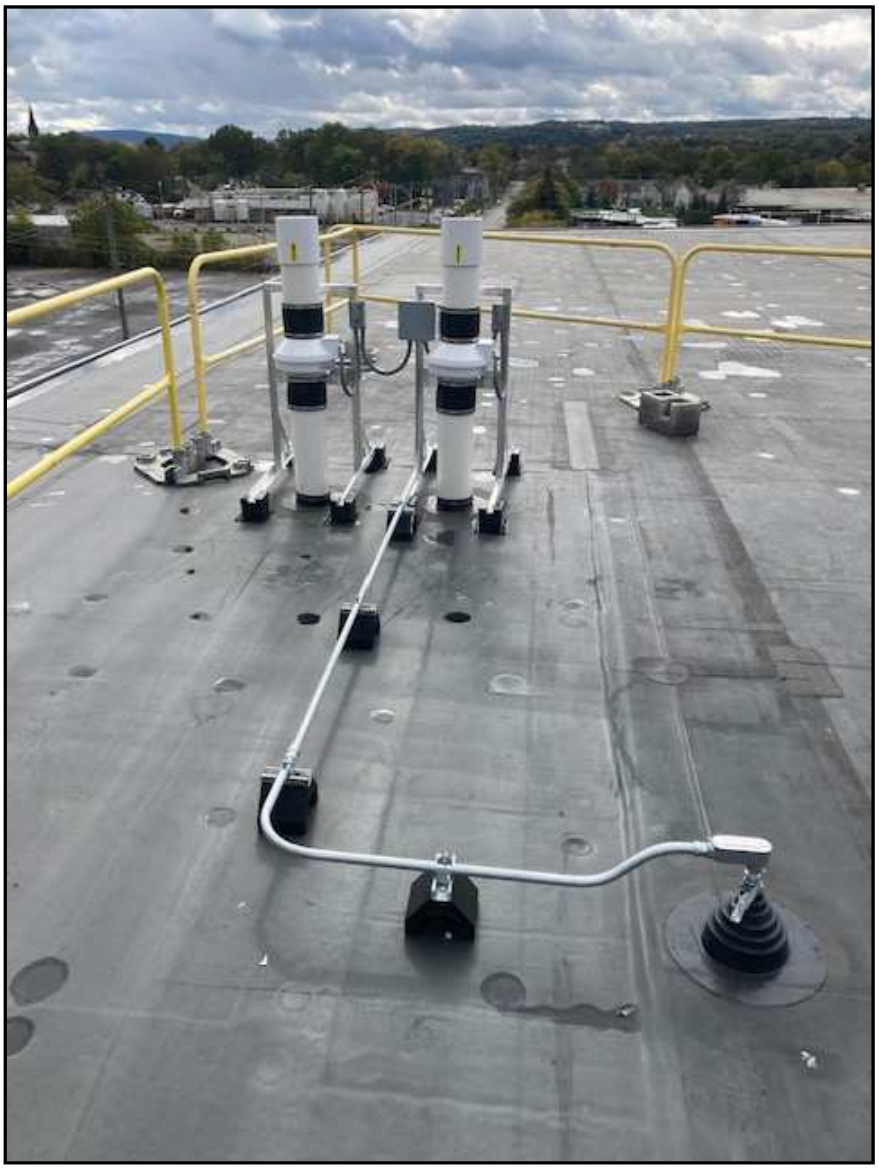


Diagram C

Appendix C

Vapor Mitigation System Photo Description Sheet

Vapor Mitigation System Photo Description Sheet



Fans F-1 and F-2 located on the roof. Electrical disconnect located adjacent to each fan.

Alpine Environmental Services, Inc., 438 New Karner Road, Albany, New York 12205
Ph. (518) 250-4047; Fax (518) 250-4353

Fans F-3, F-4, and F-5 located on the roof. Electrical disconnect located adjacent to each fan.

Monitoring panel for systems 1 and 2. Pressure gauges visible, low pressure alarms located on the side of the monitoring panel.

Monitoring panel for systems 3, 4, and 5. Pressure gauges visible, low pressure alarms located on the side of the monitoring panel.

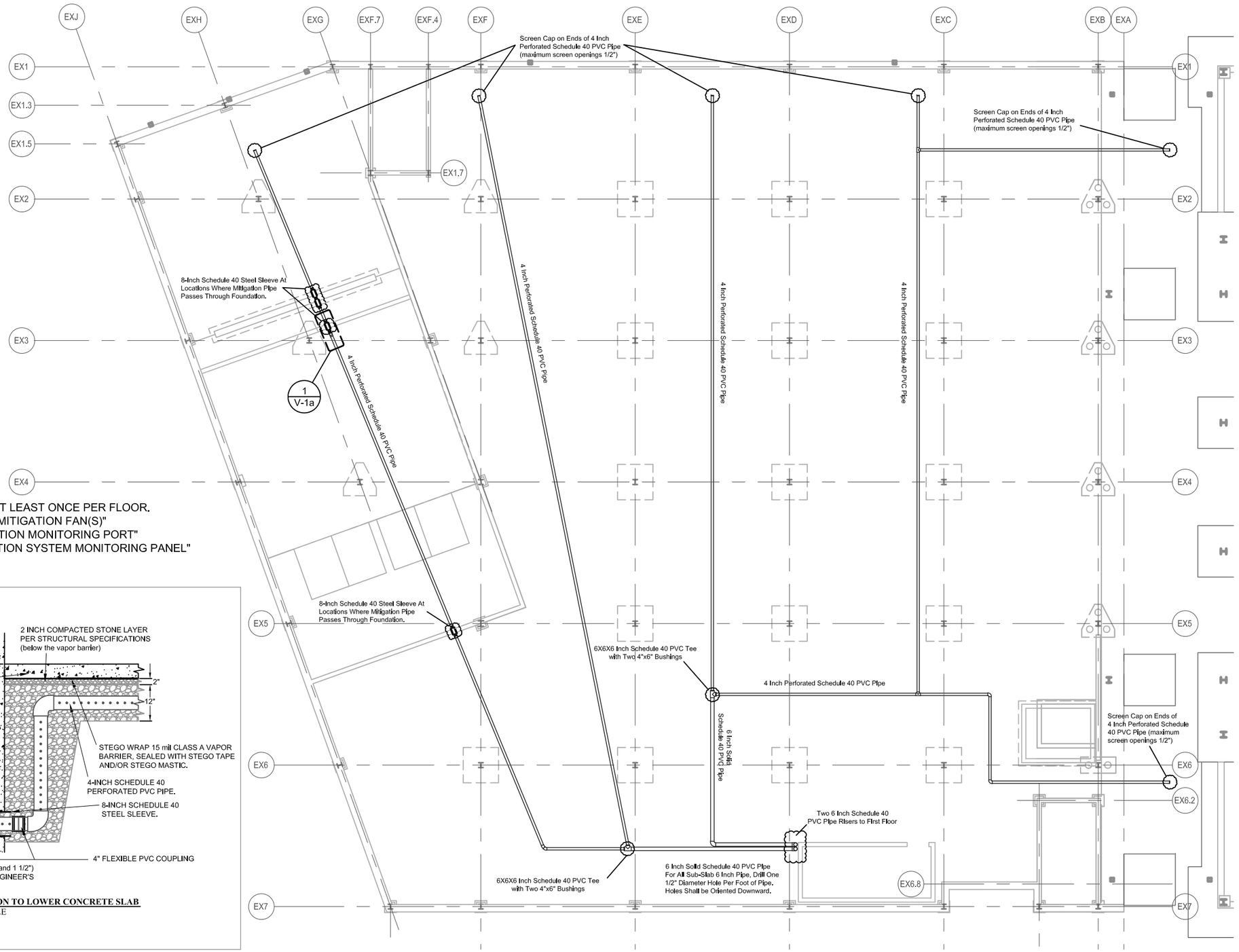
Low pressure alarms located on the side of the monitoring panel.

Pressure monitoring port in enclosure (typical).

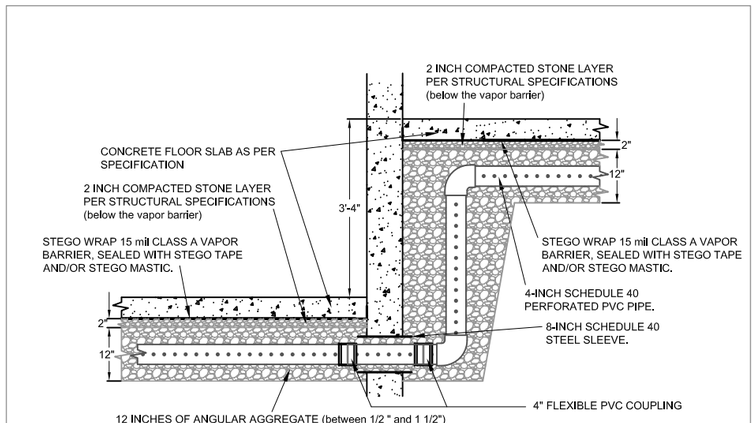
Appendix D

Vapor Mitigation System Design Plans

Alpine Environmental Services, Inc., 438 New Karner Road, Albany, New York 12205
Ph. (518) 250-4047; Fax (518) 250-4353



NOTES:
SYSTEM LABELS
LABEL PIPE: "VAPOR MITIGATION SYSTEM" AT LEAST ONCE PER FLOOR.
LABEL ELECTRICAL BREAKER(S) IN PANEL: "MITIGATION FAN(S)"
LABEL MONITORING PORTS: "VAPOR MITIGATION MONITORING PORT"
LABEL MONITORING PANEL: "VAPOR MITIGATION SYSTEM MONITORING PANEL"



1
V-1a

SUB-SLAB PIPE - SIDE VIEW - AT TRANSITION TO LOWER CONCRETE SLAB
NOT TO SCALE

Alpine Inc.
ENVIRONMENTAL SERVICES

DATE:
August 2020

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
DRAFT	August 12, 2020
DRAFT 2	September 10, 2020
FINAL	October 1, 2020

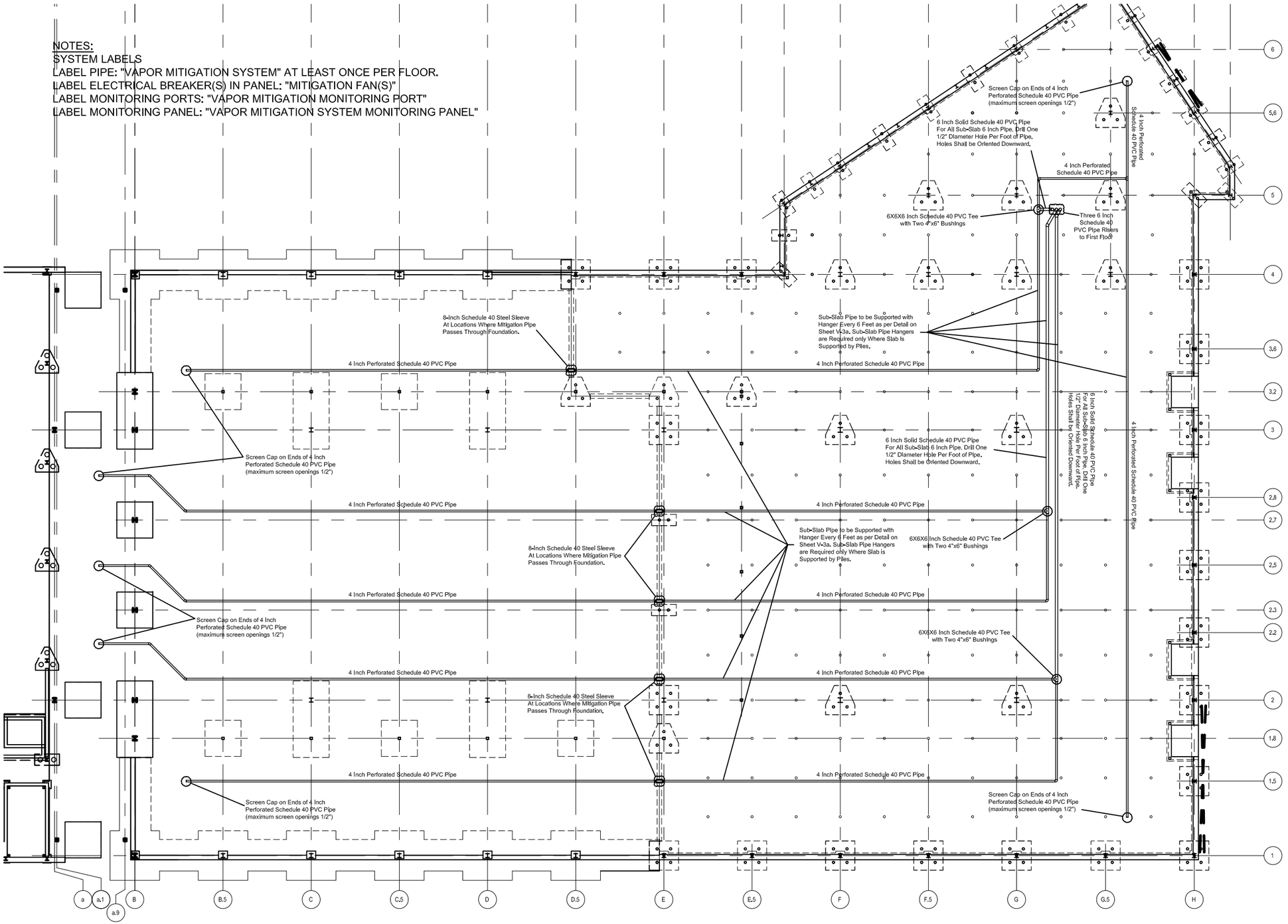
PROJECT NO: 19-24156-R

SHEET NO:

V - 1a

SHEET TITLE:	VAPOR MITIGATION SYSTEM: SUB-SLAB - OFFICES			
DRAWN BY:	BG	CHECKED BY:	MS	

NOTES:
SYSTEM LABELS
LABEL PIPE: "VAPOR MITIGATION SYSTEM" AT LEAST ONCE PER FLOOR.
LABEL ELECTRICAL BREAKER(S) IN PANEL: "MITIGATION FAN(S)"
LABEL MONITORING PORTS: "VAPOR MITIGATION MONITORING PORT"
LABEL MONITORING PANEL: "VAPOR MITIGATION SYSTEM MONITORING PANEL"



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August 2020

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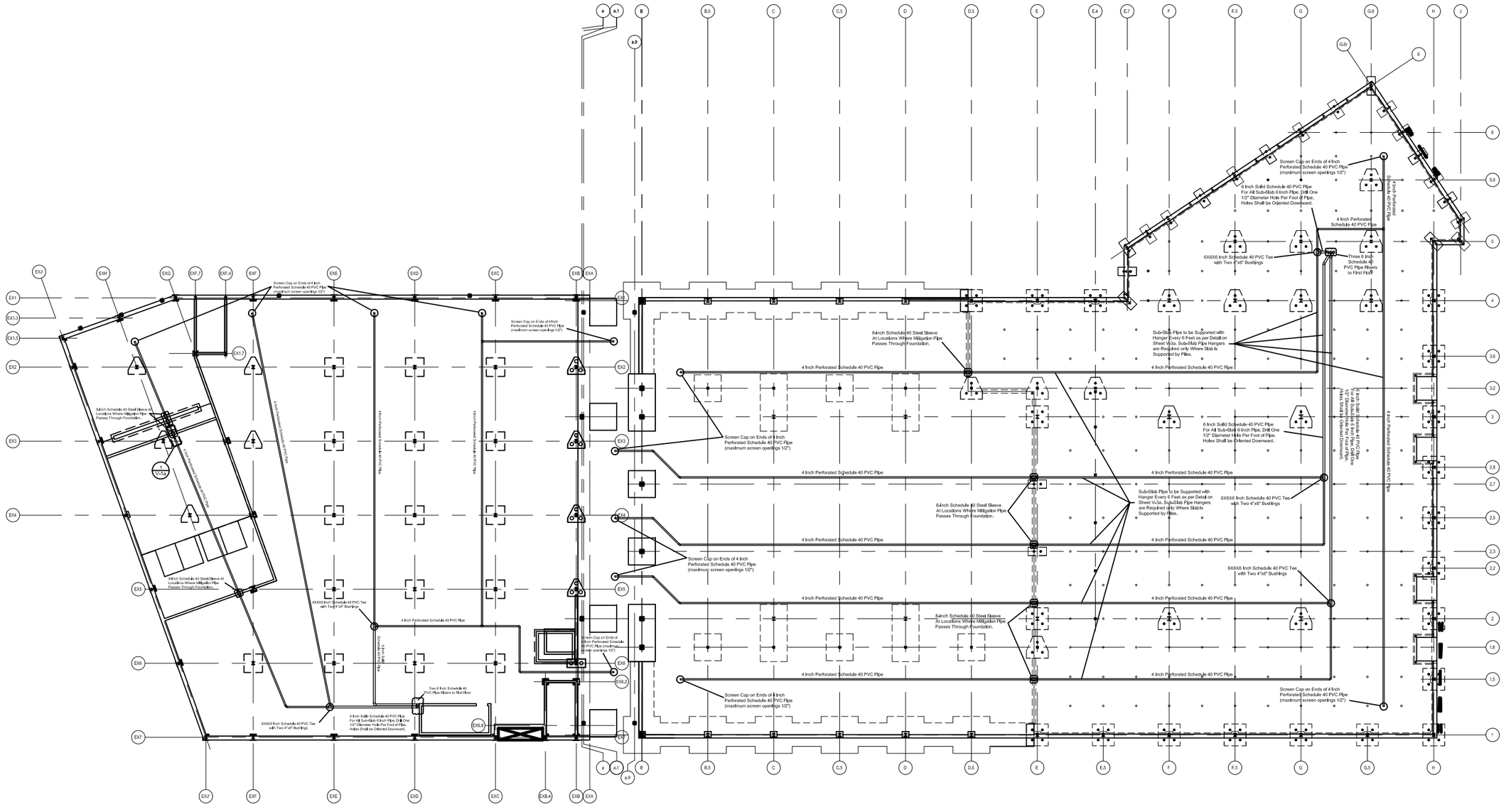
DESCRIPTION:	DATE:
DRAFT	August 12, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO:

V - 1b

SHEET TITLE:	VAPOR MITIGATION SYSTEM: SUB-SLAB - MANUFACTURING		
DRAWN BY:	BG	CHECKED BY:	MS



Alpine Inc. ENVIRONMENTAL SERVICES

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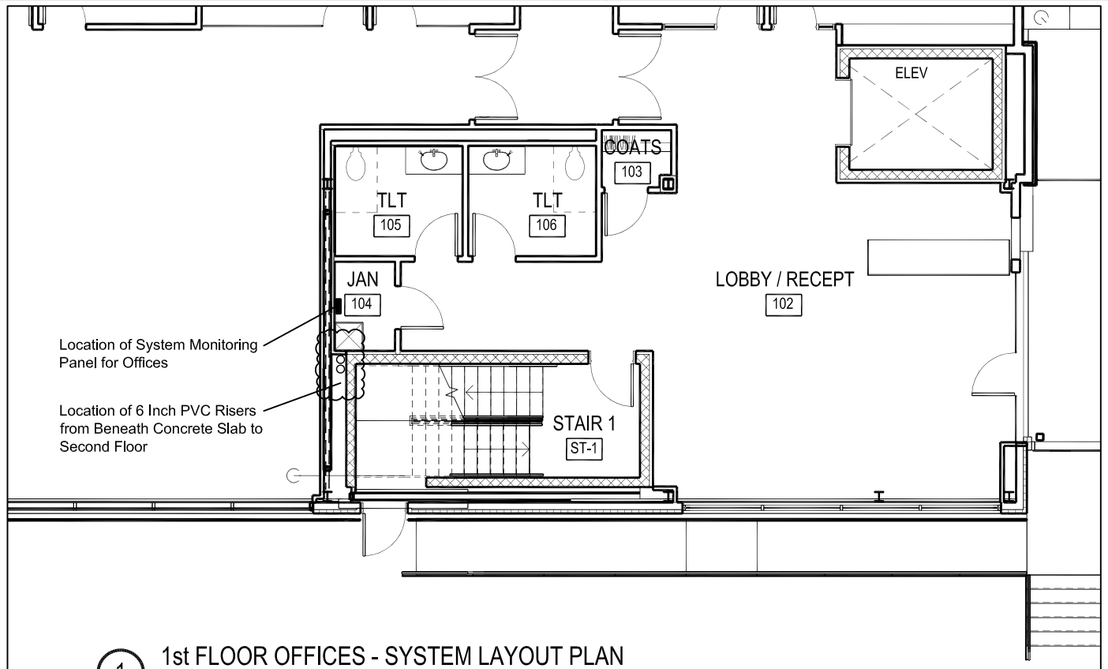
PROJECT NO: 19-24156-R

SHEET NO:

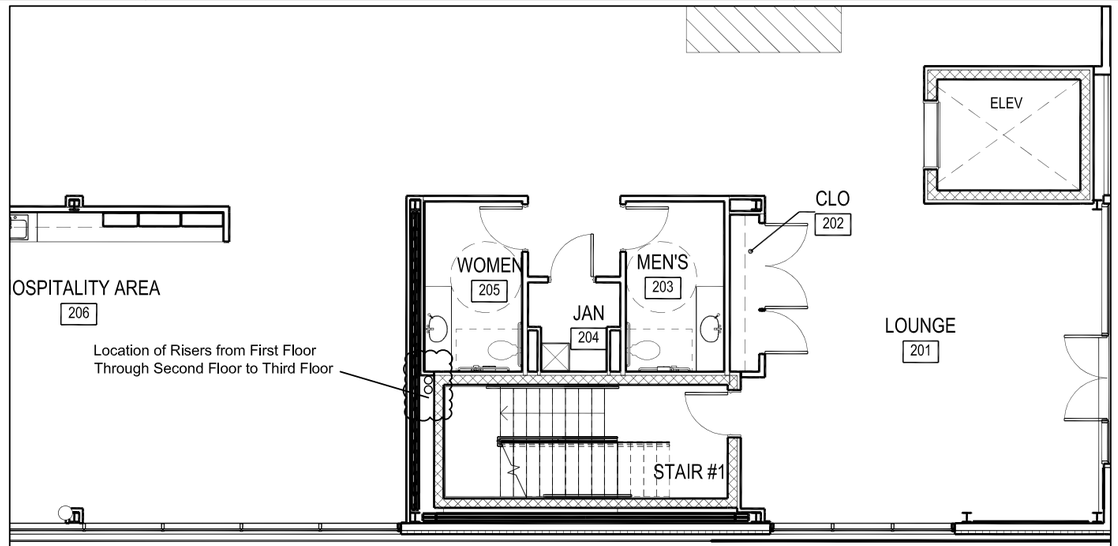
V - 1c

SHEET TITLE:	VAPOR MITIGATION SYSTEM: SUB-SLAB - OVERVIEW			
DRAWN BY:	BG	CHECKED BY:	MS	



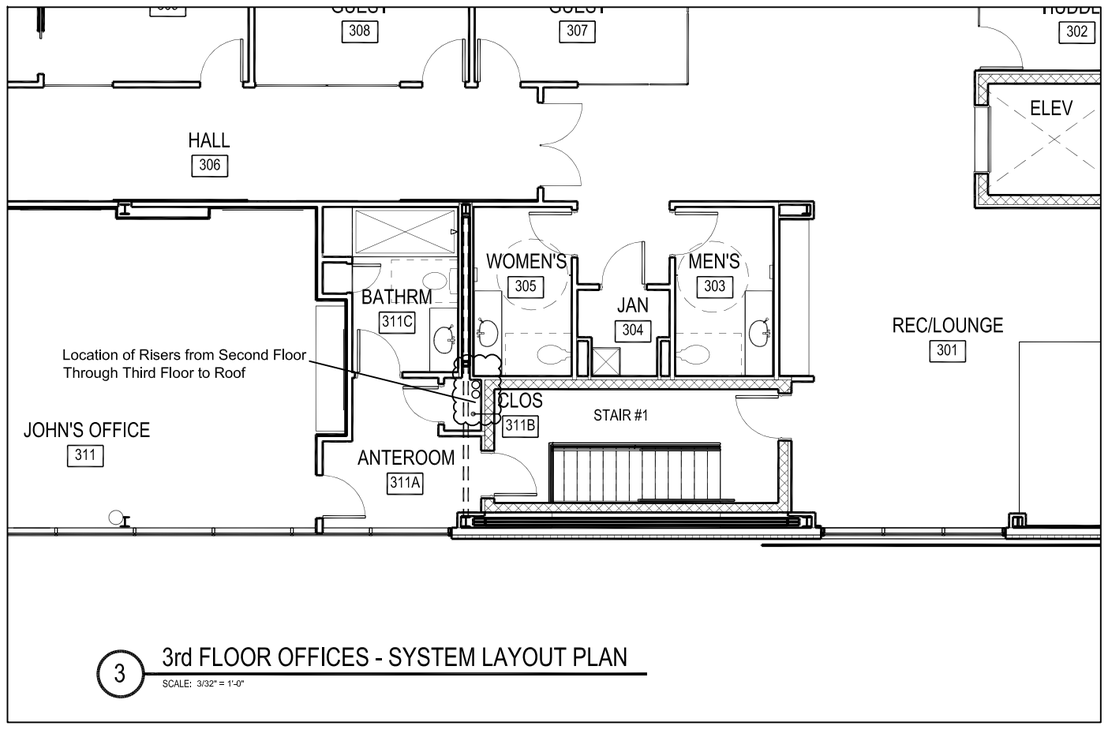
1 1st FLOOR OFFICES - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"



2 2nd FLOOR OFFICES - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"



3 3rd FLOOR OFFICES - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"

NOTES:

SYSTEM LABELS

LABEL PIPE: "VAPOR MITIGATION SYSTEM" AT LEAST ONCE PER FLOOR.

LABEL ELECTRICAL BREAKER(S) IN PANEL: "MITIGATION FAN(S)"

LABEL MONITORING PORTS: "VAPOR MITIGATION MONITORING PORT"

LABEL MONITORING PANEL: "VAPOR MITIGATION SYSTEM MONITORING PANEL"

Alpine Inc. ENVIRONMENTAL SERVICES

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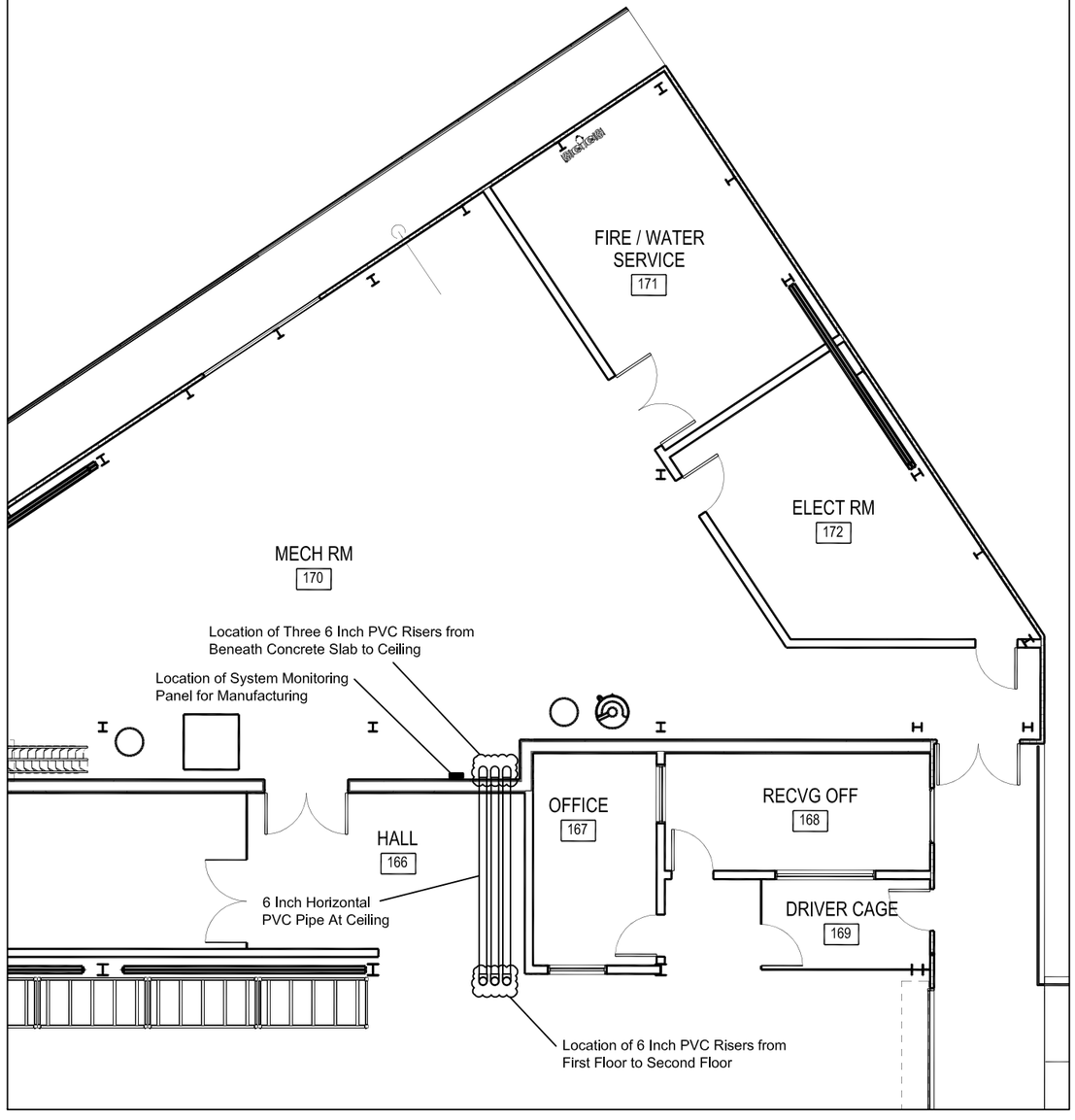
PROJECT NO: 19-24156-R

SHEET NO:

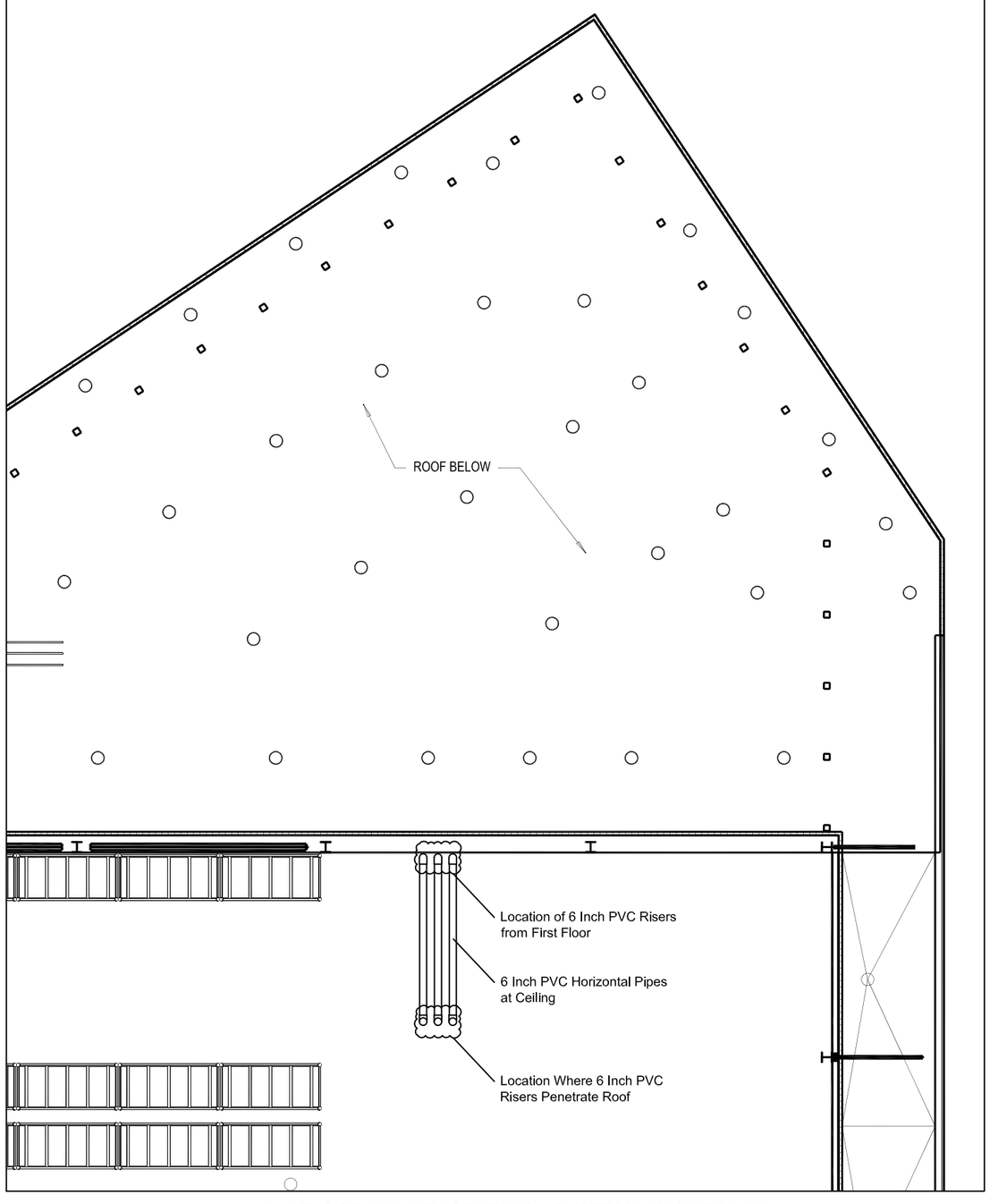
V - 2a

SHEET TITLE:	VAPOR MITIGATION SYSTEM: SYSTEM LAYOUT - OFFICES			
DRAWN BY:	BG	CHECKED BY:	MS	



1 1st FLOOR MANUFACTURING - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"



2 2nd FLOOR MANUFACTURING - SYSTEM LAYOUT PLAN

SCALE: 3/32" = 1'-0"

NOTES:
SYSTEM LABELS
LABEL PIPE: "VAPOR MITIGATION SYSTEM" AT LEAST ONCE PER FLOOR.
LABEL ELECTRICAL BREAKER(S) IN PANEL: "MITIGATION FAN(S)"
LABEL MONITORING PORTS: "VAPOR MITIGATION MONITORING PORT"
LABEL MONITORING PANEL: "VAPOR MITIGATION SYSTEM MONITORING PANEL"

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FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO:

V - 2b

SHEET TITLE:	VAPOR MITIGATION: SYSTEM LAYOUT - MANUFACTURING			
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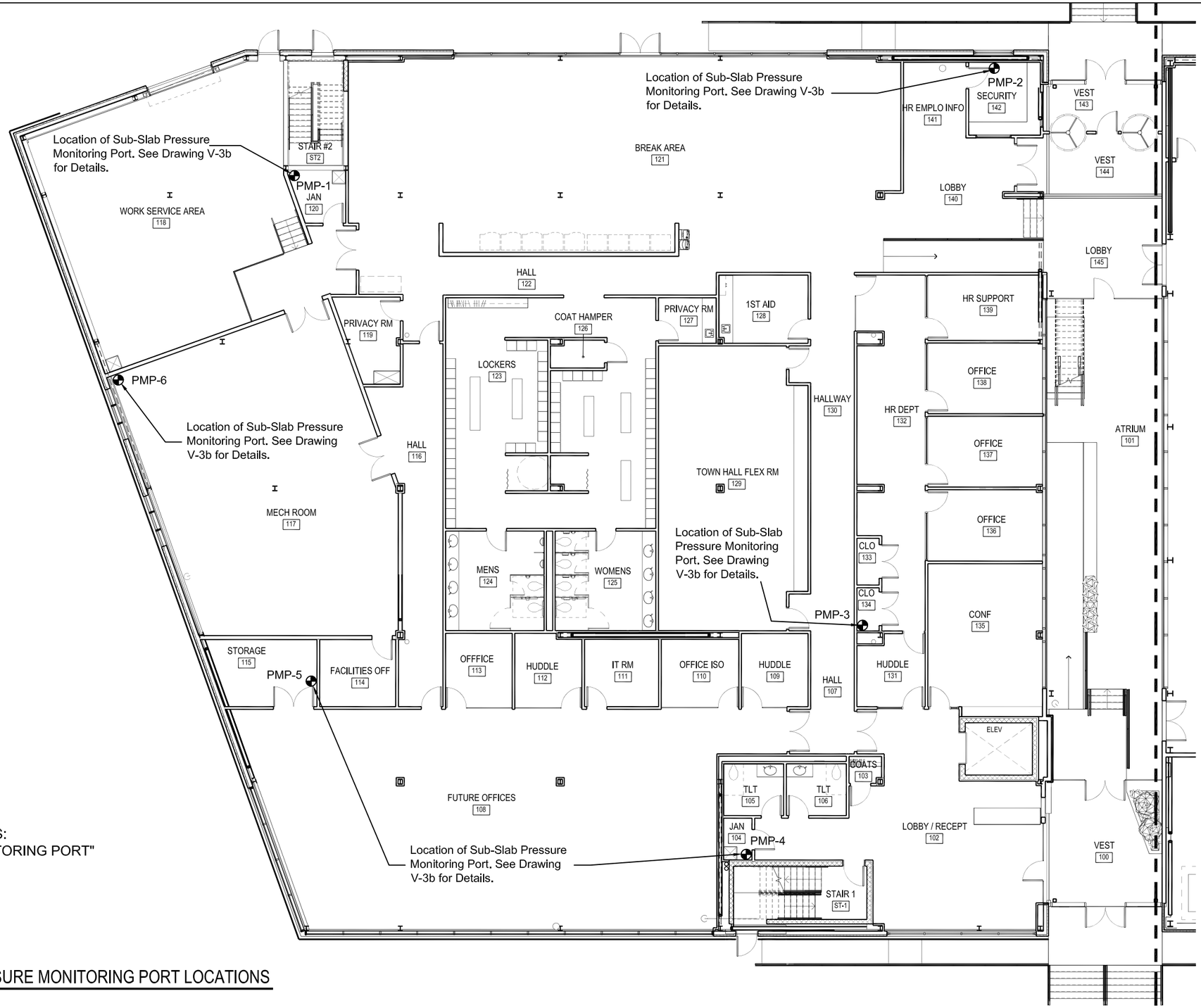

NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"

1 1st FLOOR OFFICES - PRESSURE MONITORING PORT LOCATIONS
SCALE: 3/32" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

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DATE:	August 12, 2020	October 1, 2020

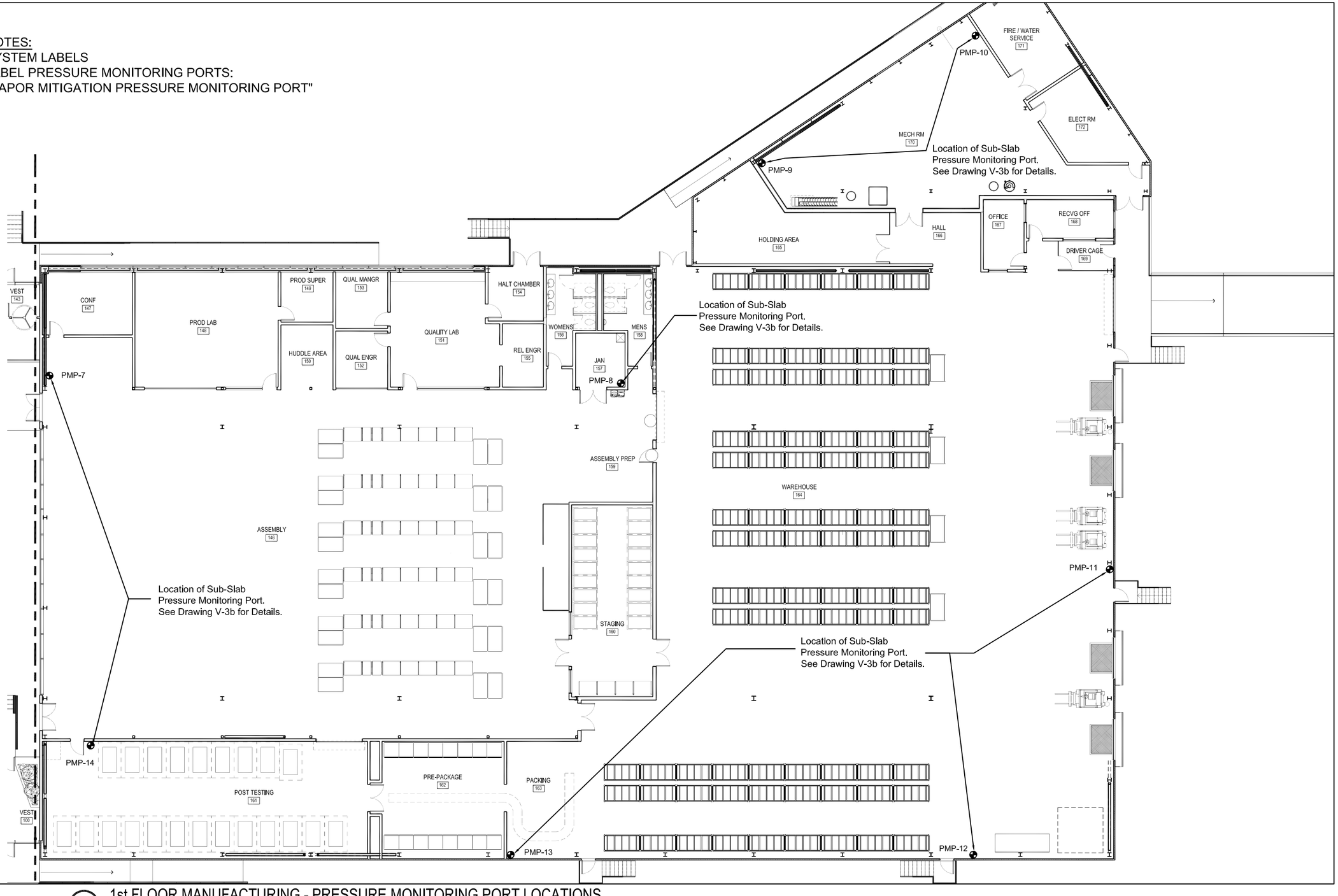
PROJECT NO: 19-24156-R

SHEET NO:

V - 2c

SHEET TITLE:	VAPOR MITIGATION SYSTEM: OFFICES		
DRAWN BY:	BG	CHECKED BY:	MS

NOTES:
SYSTEM LABELS
LABEL PRESSURE MONITORING PORTS:
"VAPOR MITIGATION PRESSURE MONITORING PORT"



1 1st FLOOR MANUFACTURING - PRESSURE MONITORING PORT LOCATIONS
SCALE: 3/64" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

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August 2020

140 Cortland Avenue
Syracuse, NY

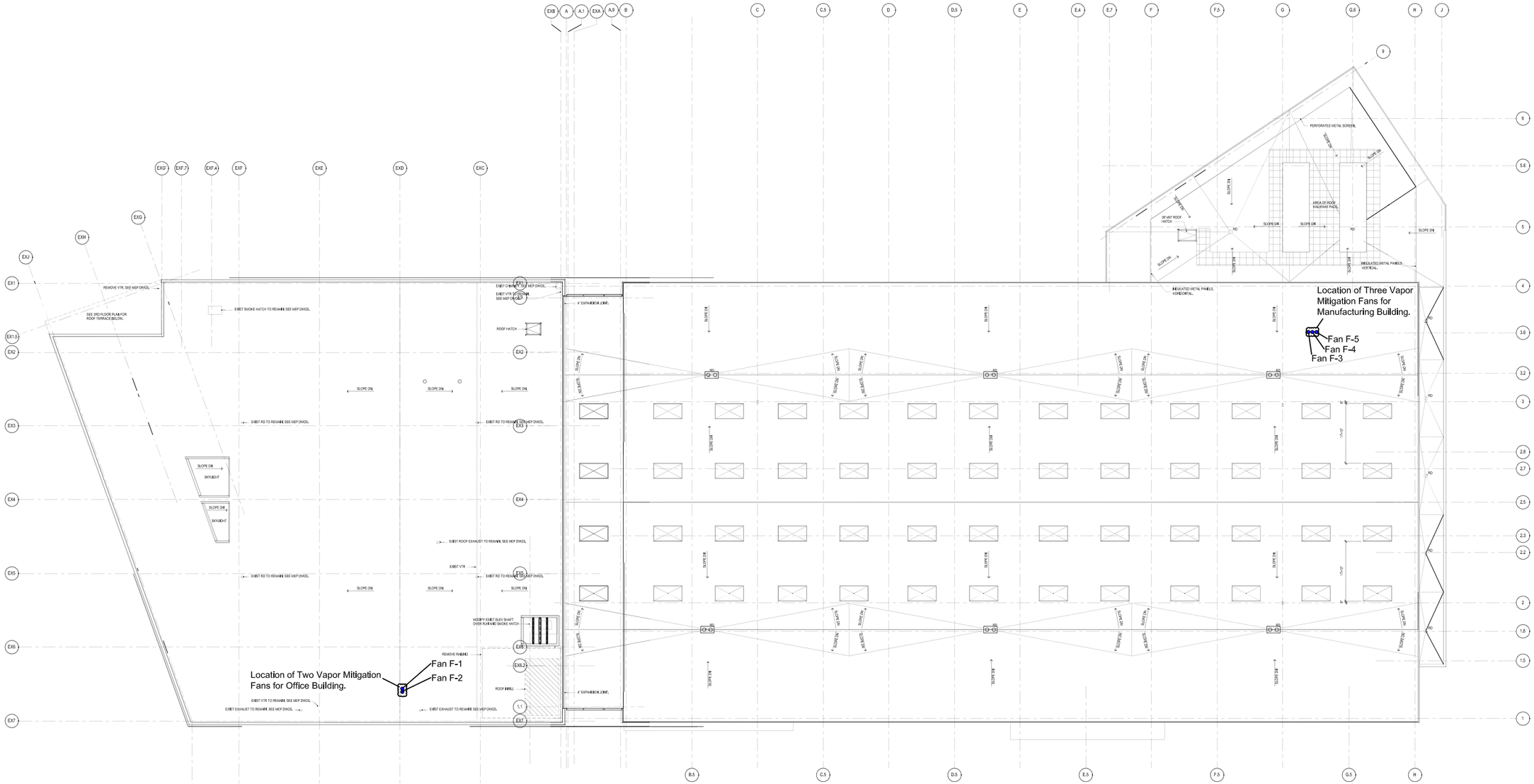
DESCRIPTION:	DATE:
DRAFT	August 12, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO:

V - 2d

SHEET TITLE:	VAPOR MITIGATION: MANUFACTURING		
DRAWN BY:	BG	CHECKED BY:	MS



1 ROOF - FAN LOCATION PLAN

SCALE: 1/32" = 1'-0"

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
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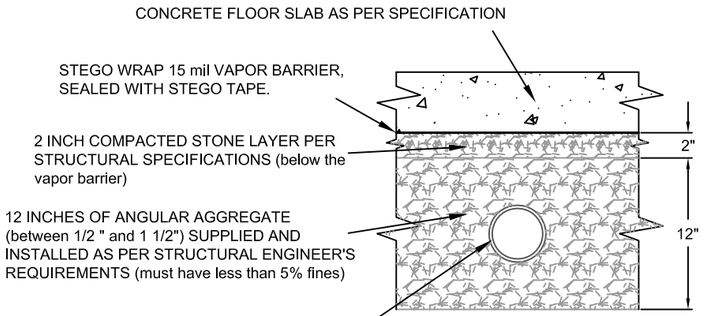
DESCRIPTION:	DATE:
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

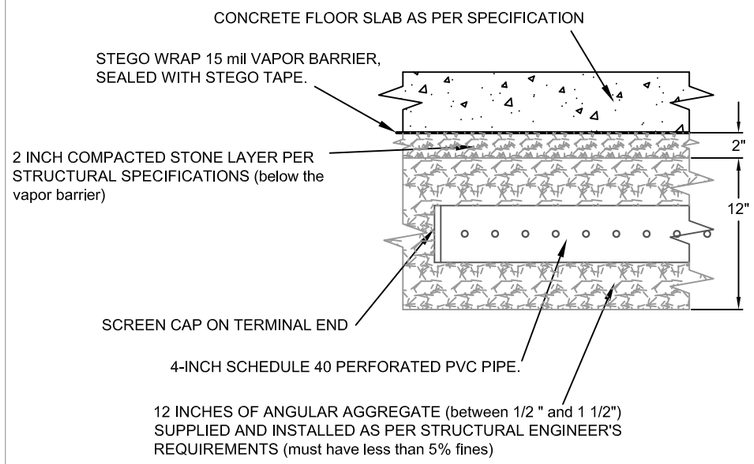
SHEET NO:

V - 2e

SHEET TITLE:	VAPOR MITIGATION SYSTEM: ROOF - FAN LOCATIONS			
DRAWN BY:	BG	CHECKED BY:	MS	



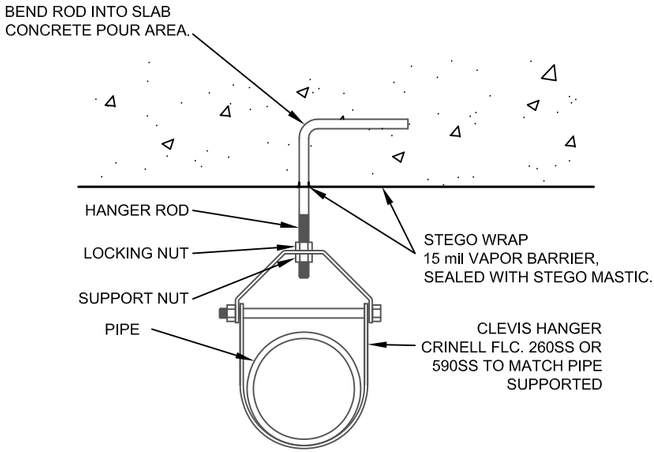
SUB-SLAB PIPE - END VIEW
NOT TO SCALE



SUB-SLAB PIPE TO BE PLACED LEVEL.

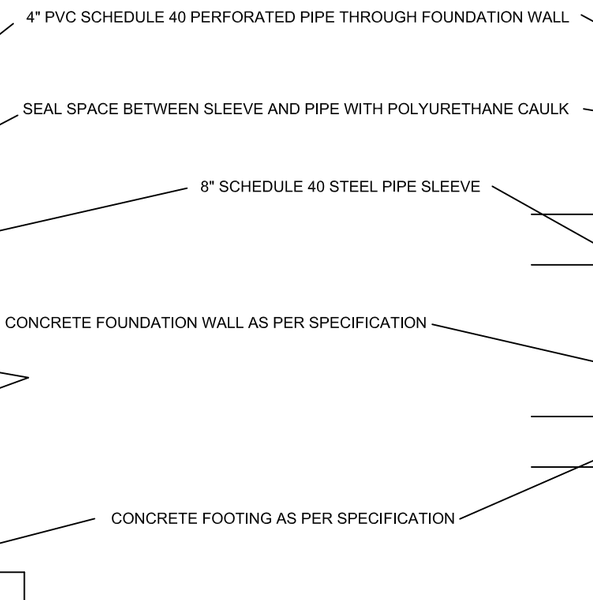
12 5/8" HOLES PER FOOT IN PERFORATED PIPE LOCATED AT 3 O'CLOCK, 6 O'CLOCK, AND 9 O'CLOCK POSITIONS AT FINAL INSTALL.

SUB-SLAB PIPE - SIDE VIEW
NOT TO SCALE

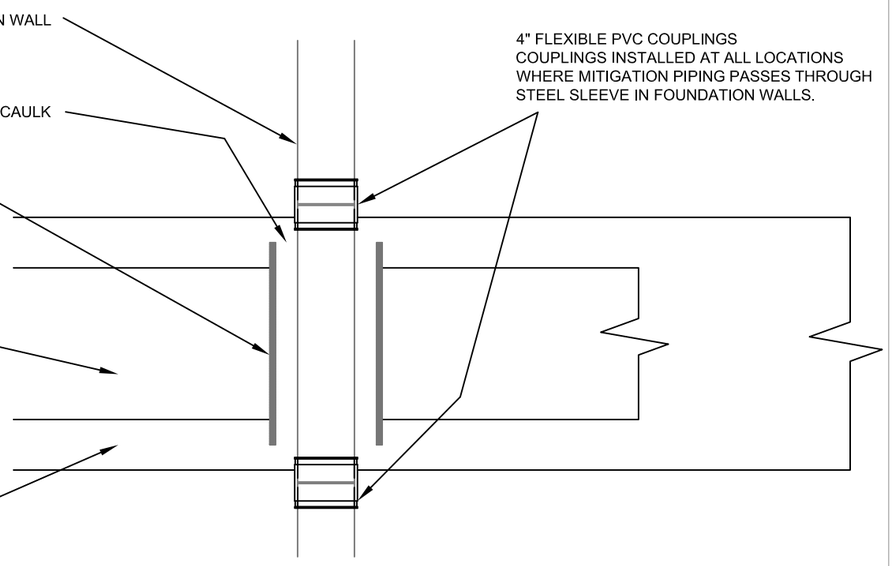


NOTE: ALL HANGER MATERIALS TO BE STAINLESS STEEL

SUB-SLAB PIPE - HANGER DETAIL
NOT TO SCALE



FOUNDATION PENETRATION: END VIEW
NOT TO SCALE



FOUNDATION PENETRATION: TOP VIEW
NOT TO SCALE

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
Syracuse, NY

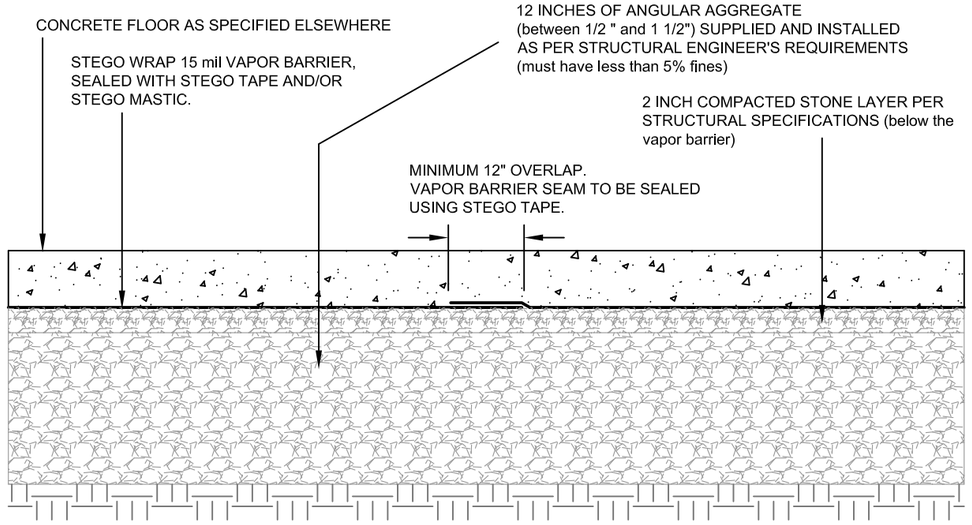
DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

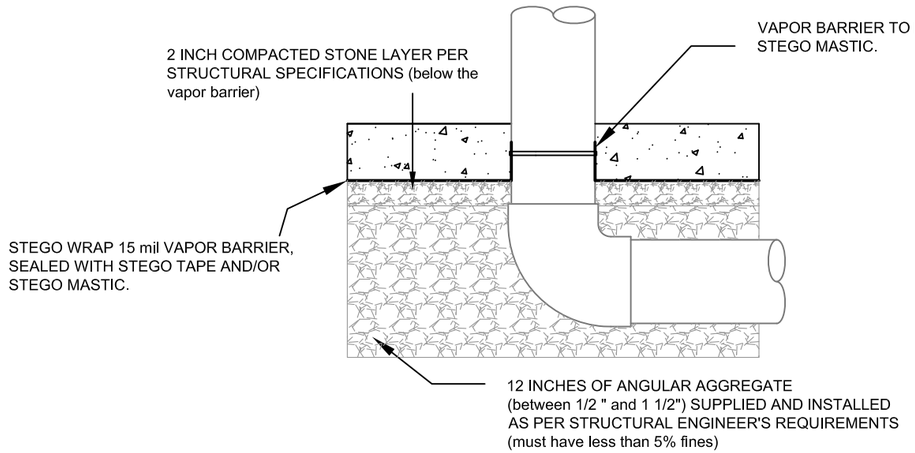
SHEET NO:

V - 3a

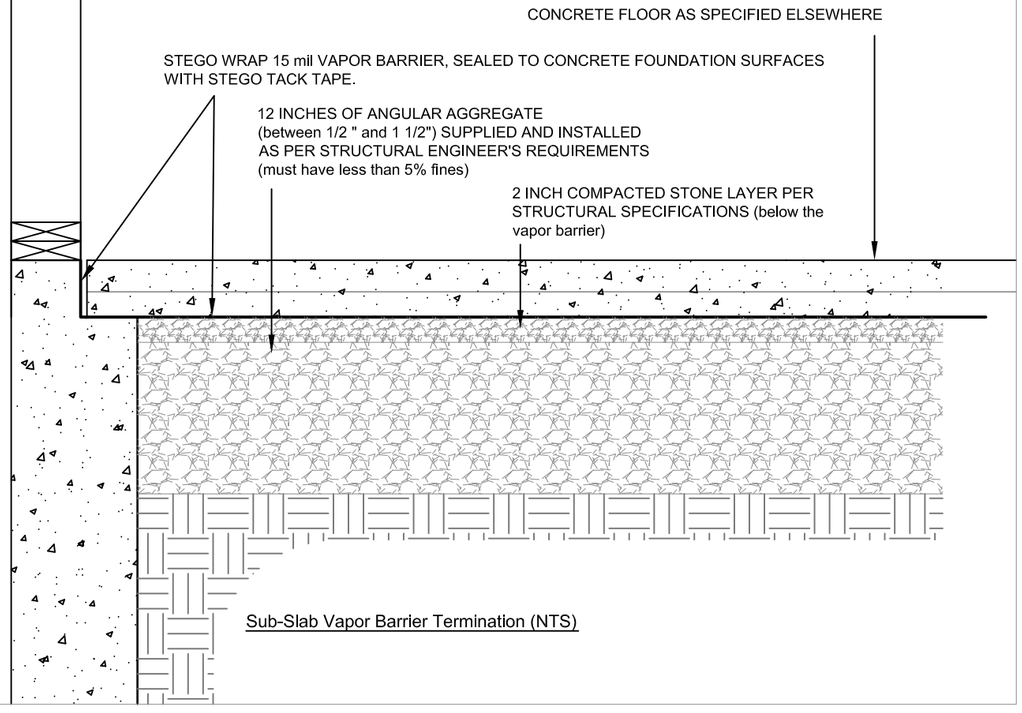
SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 1			
DRAWN BY:	BG	CHECKED BY:	MS	



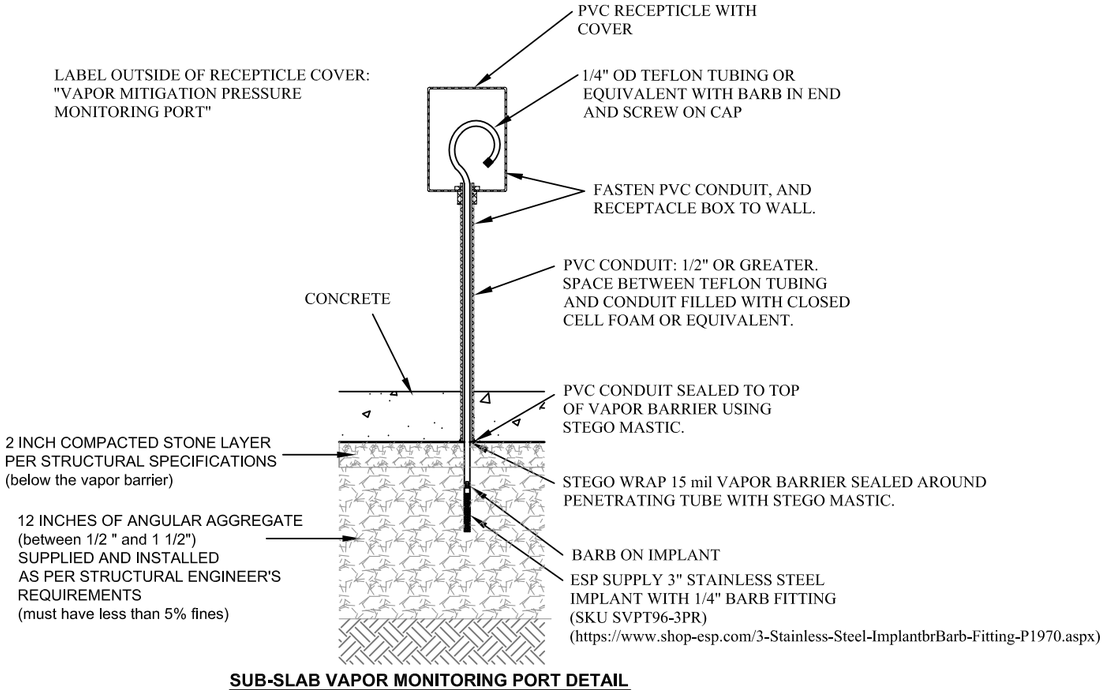
Detail for Overlap of Vapor Barrier System (NTS)



Underslab Gas Vapor Barrier Detail At Penetrations Through Floor (NTS)



Sub-Slab Vapor Barrier Termination (NTS)



SUB-SLAB VAPOR MONITORING PORT DETAIL
NOT TO SCALE

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
Syracuse, NY

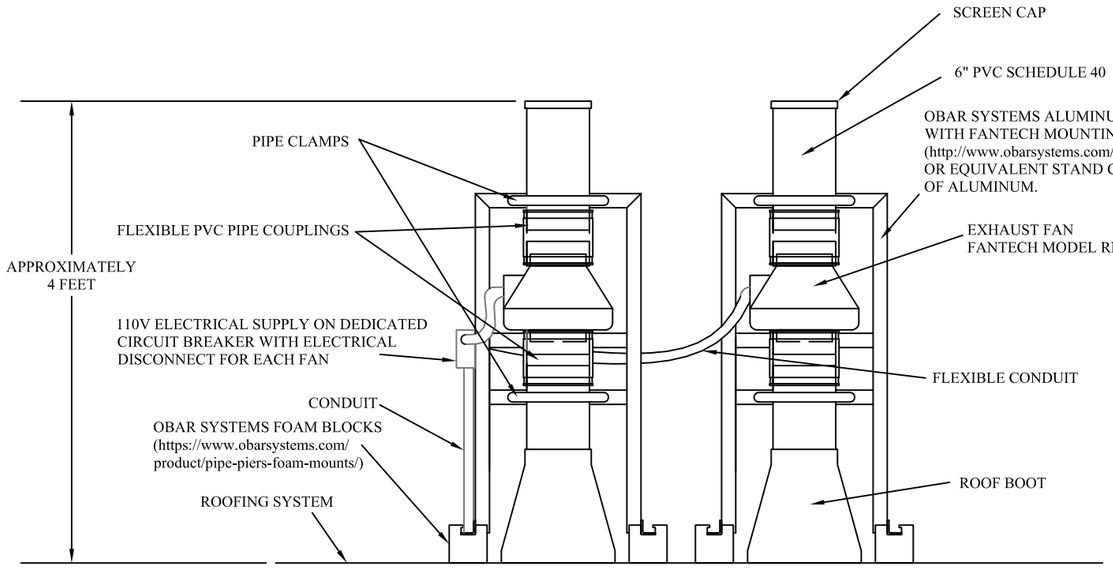
DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

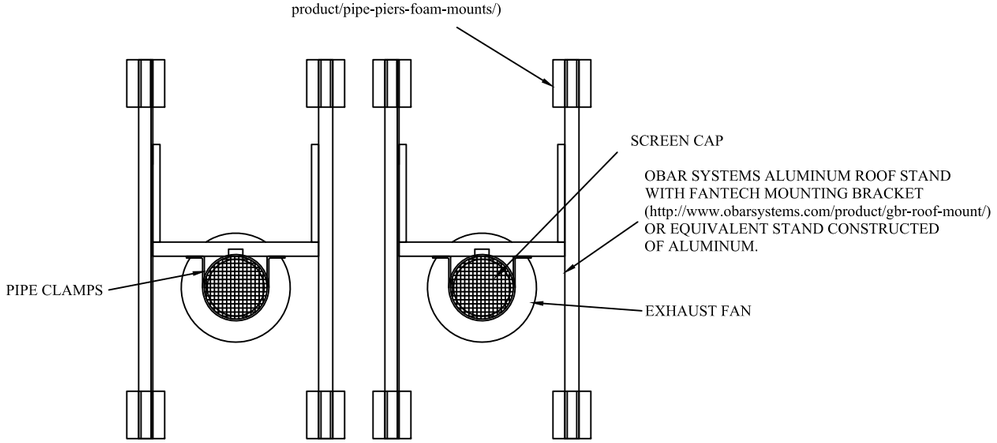
SHEET NO:

V - 3b

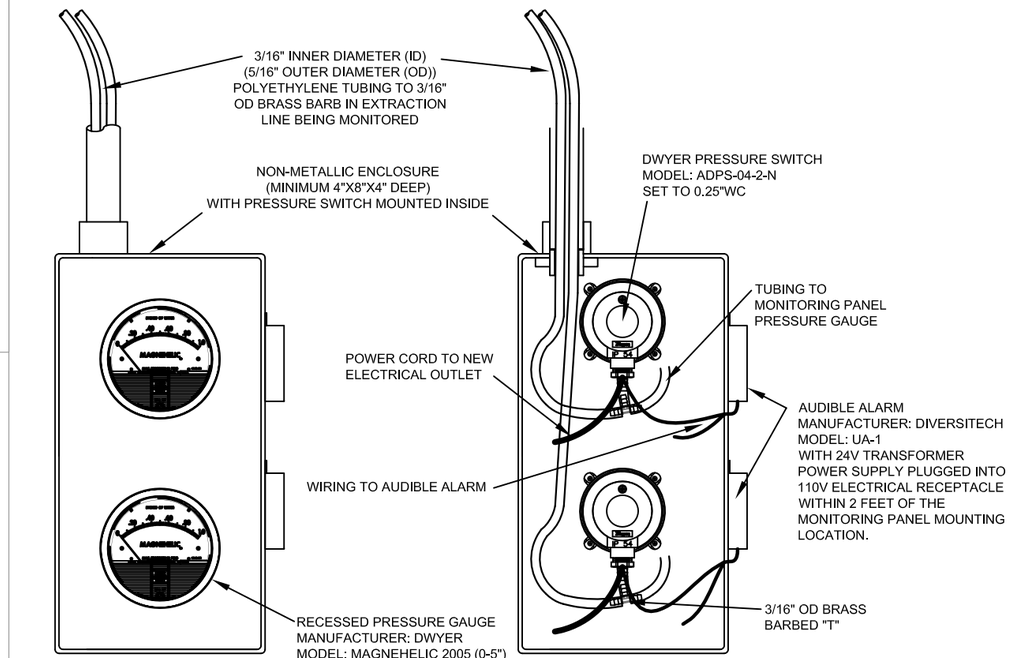
SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 2		
DRAWN BY:	BG	CHECKED BY:	MS



OFFICE BUILDING - FANS F-1 AND F-2
FANTECH RN4 MOUNTING DETAIL
ROOF MOUNT - SIDE VIEW
NOT TO SCALE



OFFICE BUILDING - FANS F-1 AND F-2
FANTECH RN4 FAN MOUNTING DETAIL
ROOF MOUNT - TOP VIEW
NOT TO SCALE



OFFICE BUILDING
MONITORING PANEL - FRONT VIEW
NOT TO SCALE

OFFICE BUILDING
MONITORING PANEL - INTERIOR VIEW
NOT TO SCALE

NOTE:

PROVIDE 115V ELECTRICAL SERVICE TO FANS ON 20 AMP DEDICATED CIRCUIT BREAKER. MULTIPLE MITIGATION FANS CAN BE ON THE SAME BREAKER. ELECTRICAL POWER SERVING THE ALARM SHALL BE ON A DIFFERENT CIRCUIT THAN THE FAN, BUT IS NOT REQUIRED TO BE A DEDICATED CIRCUIT.

Alpine Inc. ENVIRONMENTAL SERVICES

DATE:
August 2020

140 Cortland Avenue
Syracuse, NY

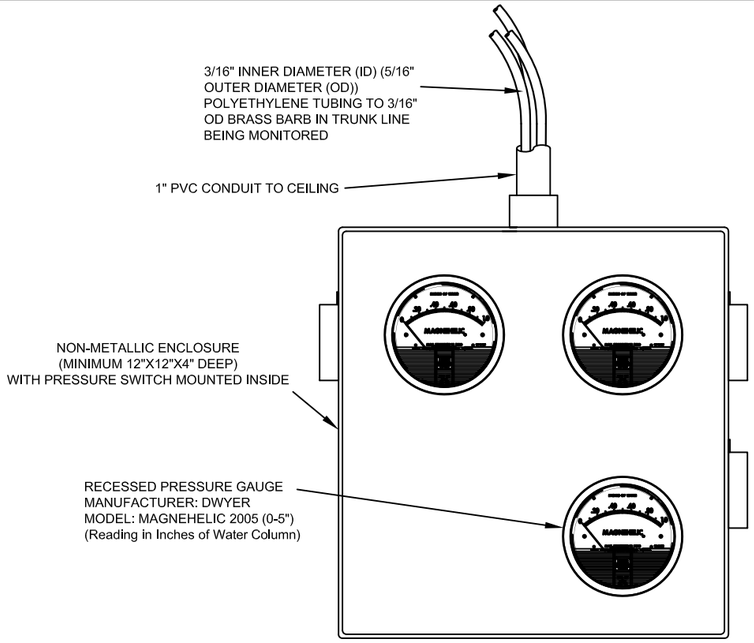
DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

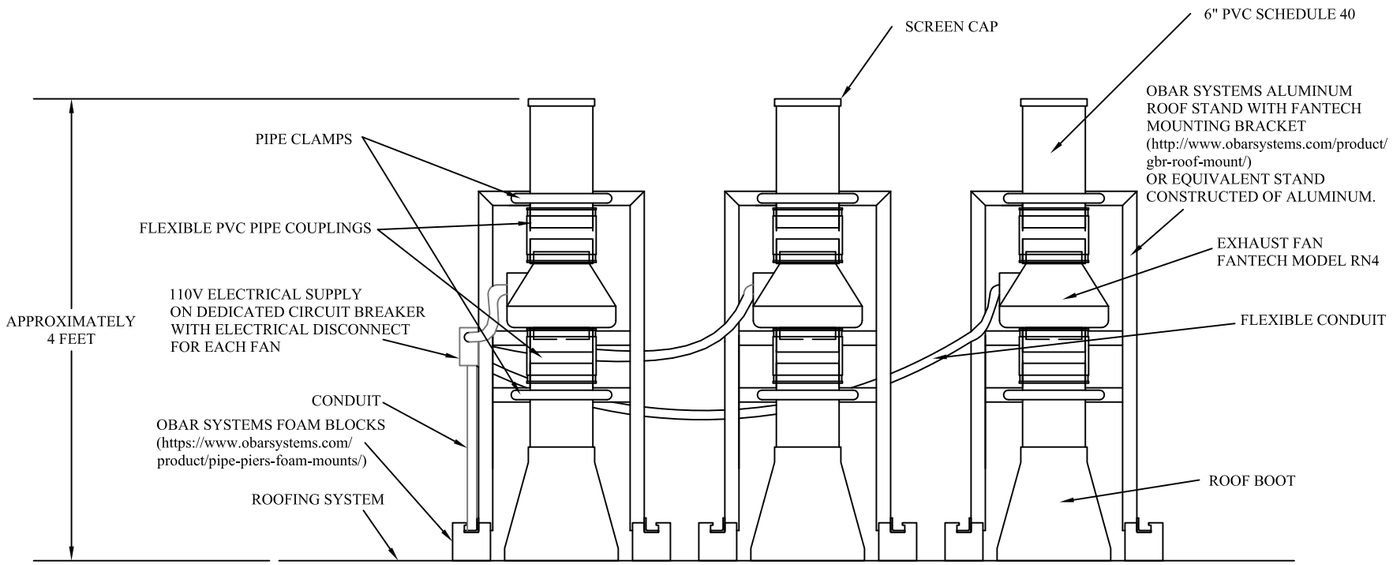
SHEET NO:

V - 3c

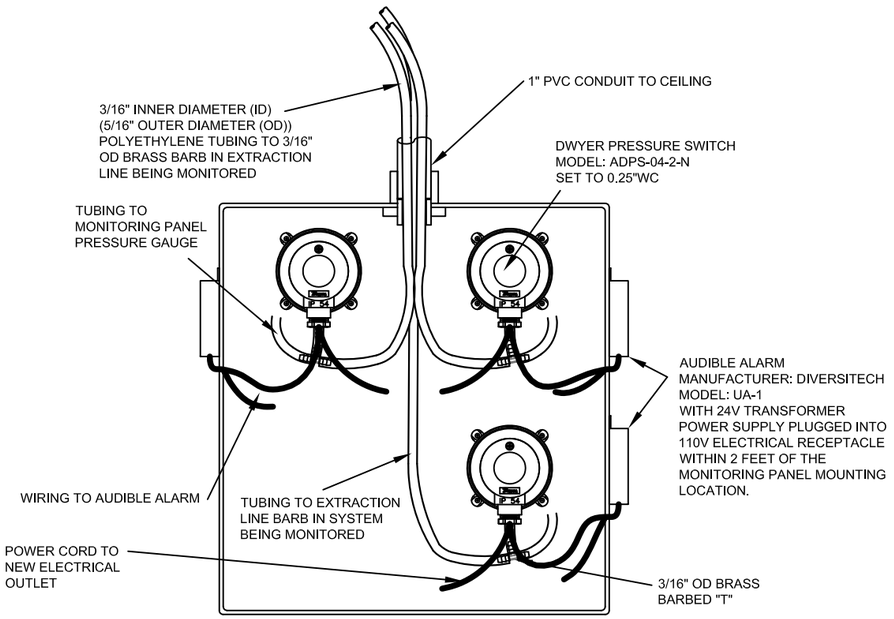
SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 3			
DRAWN BY:	BG	CHECKED BY:	MS	



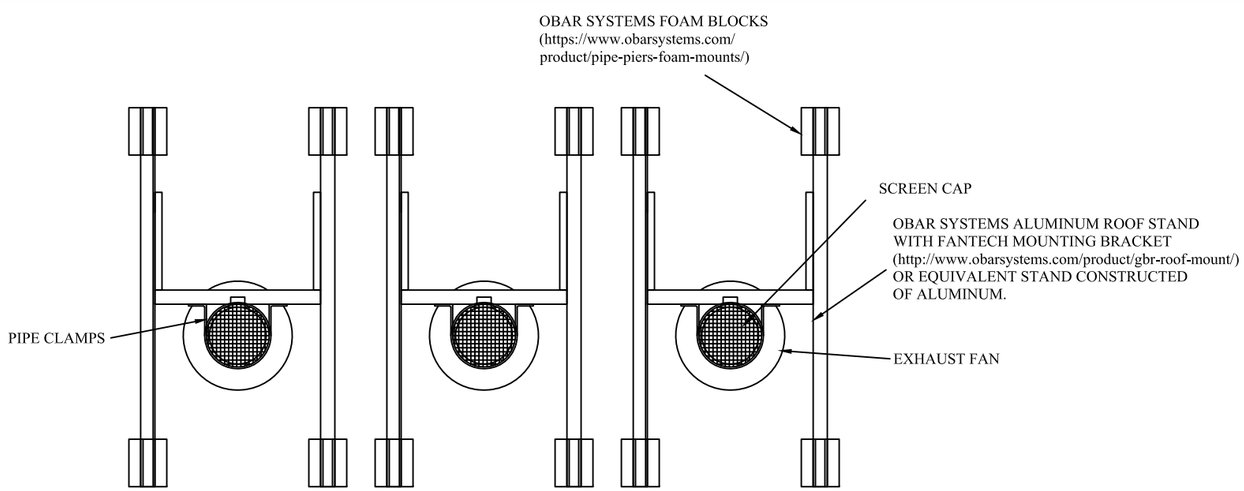
MANUFACTURING BUILDING
MONITORING PANEL - FRONT VIEW
NOT TO SCALE



MANUFACTURING BUILDING - FANS F-3, F-4 AND F-5
FANTECH RN4 MOUNTING DETAIL
ROOF MOUNT - SIDE VIEW
NOT TO SCALE



MANUFACTURING BUILDING
MONITORING PANEL - INTERIOR VIEW
NOT TO SCALE



MANUFACTURING BUILDING - FANS F-3, F-4 AND F-5
FANTECH RN4 FAN MOUNTING DETAIL
ROOF MOUNT - TOP VIEW
NOT TO SCALE

NOTE:

PROVIDE 115V ELECTRICAL SERVICE TO FANS ON 20 AMP DEDICATED CIRCUIT BREAKER. MULTIPLE MITIGATION FANS CAN BE ON THE SAME BREAKER. ELECTRICAL POWER SERVING THE ALARM SHALL BE ON A DIFFERENT CIRCUIT THAN THE FAN, BUT IS NOT REQUIRED TO BE A DEDICATED CIRCUIT.

Alpine Inc. ENVIRONMENTAL SERVICES

DATE: August 2020

140 Cortland Avenue
Syracuse, NY

DESCRIPTION:	DATE:
DRAFT	August 17, 2020
FINAL	October 1, 2020

PROJECT NO: 19-24156-R

SHEET NO:

V - 3d

SHEET TITLE:	VAPOR MITIGATION SYSTEM: DETAILS 4		
DRAWN BY:	BG	CHECKED BY:	MS

Appendix E

Vapor Mitigation System Inspection & Monitoring

- Inspection Procedures
- Operating Pressure & PMP Result Tables
- Repair / Modification Log

Alpine Environmental Services, Inc., 438 New Karner Road, Albany, New York 12205
Ph. (518) 250-4047; Fax (518) 250-4353

1.0 Radon Mitigation System Annual Inspection Procedures

A periodic inspection is recommended to verify the mitigation system is operating as designed. At a minimum, an annual full inspection should be performed as well as a monthly check of system fans and gauges. Prior to performing any test on the system, notify parties managing the building of the intent to test.

Inspection Procedures:

1.01 System Fans: Observe each fan during operation. Pay special attention to any abnormal noises coming from the fan, buzzing or scraping, or no sound at all. If abnormal noises (i.e. scraping, buzzing, cyclical pointed sounds, or no operational sound at all, etc.) are observed, refer to the Troubleshooting Guide (Section 6.2.4 of O & M Manual). Observe the exhaust stack for possible obstructions (i.e. ice, etc.). Please Note: The system fans are designed to be maintenance free, for the life of the fans. All moving parts of the system are sealed in the fan-housing unit. The fan-housing unit should only be opened by the fan manufacturer. Any attempt to open the fan-housing unit will destroy the factory-installed seals and void any warranty on the fan.

1.02 System Piping and Connections: Inspect the exposed system piping and connections for any breach or damage. Repair or replace any observed damage effecting system operation.

1.03 Slab/System Interface Seals: If accessible, inspect the seal at each of the extraction pipe (a breach in the seal should produce an air leak noise when the system is in operation). If breech is observed, caulk with polyurethane caulk

1.04 Operating Pressure: Test system pressure gauges for functionality. Remove input line or shut down sub-system to verify pressure reading on gauges returns to zero. Replace any dysfunctional pressure gauges and restore sub-system operation.

1.05 Observe the operating pressure on the gauges at the monitoring panel for the system. Record the operating pressure in the table provided (Section 2.0 below). Compare the operating pressure in to the initial

operating pressure. If operating pressure has reduced by greater than 50%, evaluate the fan for problems. If no problems are identified with the fan, perform sub-slab pressure testing using a micro manometer to verify the sub-slab pressure field extension (PFE) is acceptable (ie greater than or equal to -0.004"WC) using permanent sub slab monitoring points (See Figures V-100 and V-101 in Appendix A for pressure monitoring port locations) under the "new" operating pressure. If acceptable PFE cannot be achieved, replace the system fan.

1.06 Electrical: Observe electrical components for damage. Repair damaged components. Test system electrical disconnects / switches for functionality. Repair any dysfunctional components.

1.07 Inspection Documentation: Document the inspection (Table A), sub-system and extraction line pressure readings (Section 2.0), and any repairs or modifications made (Section 3.0) and maintain a logbook of the periodic inspections for the life of the mitigation system.

TABLE A

Inspection Date	Inspector Name	Address/Phone #	Inspection Result

2.0 Vapor Mitigation System Pressure Gauge Readings:

Date:	Initial Reading: October 19, 2021							
Sub-System 1 (Fan F1)								
Fantech RN4EC-4 Operating Pressure	1.6"WC							
Acceptable Operating Range:	0.25 - 4.75"WC							
Sub-System 2 (Fan F2)								
Fantech RN4EC-4 Operating Pressure	2.0"WC							
Acceptable Operating Range:	0.25 - 4.75"WC							
Sub-System 3 (Fan F3)								
Fantech RN4EC-4 Operating Pressure	1.4"WC							
Acceptable Operating Range:	0.25 - 4.75"WC							
Sub-System 4 (Fan F4)								
Fantech RN4EC-4 Operating Pressure	1.4"WC							
Acceptable Operating Range:	0.25 - 4.75"WC							
Sub-System 5 (Fan F5)								
Fantech RN4EC-4 Operating Pressure	1.2"WC							
Acceptable Operating Range:	0.25 - 4.75"WC							

3.0 Repair Log

	Date:	Date:	Date:
Component (ie fan, gauge, etc.)			
Description of the Deficiency or Problem			
Description of the Modification or Repair			

	Date:	Date:	Date:
Sub System ID			
Component (ie fan, gauge, etc.)			
Description of the Deficiency or Problem			
Description of the Modification or Repair			

APPENDIX M

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REMEDIAL SYSTEM OPTIMIZATION FOR The Former Coyne Textile Facility

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