INSTALLATION REPORT

Vapor Intrusion Mitigation System
Former Sealectro Site
NYSDEC Site No. 360027
Mamaroneck, New York

ITT Corporation

July 2014

O'BRIEN & GERE

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1. INTRODUCTION

1.1 PURPOSE

On behalf of ITT Corporation (ITT), this report by O'Brien & Gere provides documentation of the installation, design, and commissioning procedures, along with the proposed operations, maintenance, and monitoring plan for the vapor intrusion mitigation system (sub-slab depressurization system [SSDS]) installed at the Former Sealectro, Inc. facility located at 139 Hoyt Avenue in the Village of Mamaroneck, Westchester County, New York.

1.2 SITE BACKGROUND

1.2.1 Location and Description

The former Sealectro, Inc. Facility (Site) is located at 139 Hoyt Avenue in the Village of Mamaroneck, Westchester County, New York. As shown on **Figure 1**, the 0.92-acre Site is relatively flat and contains a single story building that sits on a concrete slab on grade. Paved parking areas cover nearly the entire remaining area and the majority of the Site is fenced to maintain Site security. The building has a floor space of approximately 20,000 square feet and is currently occupied by a single tenant – Half Time Beverage. A figure showing the tenant's floor plan has been included as **Exhibit 1**. The building had been previously subdivided into two units for leasing to various businesses prior to the current tenant's occupancy in December 2013.

The building is serviced by overhead electric and telephone, and underground sanitary sewer and potable water (piping leads from street directly into building). A water main vault (discussed below) exists in a front closet of the building.

1.2.2 Vapor Intrusion Mitigation Background and Objective

In January 2007, at the request of New York State Department of Environmental Conservation (NYSDEC), vapor intrusion sampling was conducted at the Site. The results of the sampling were submitted to NYSDEC within the *Vapor Intrusion Evaluation Results Report* (O'Brien & Gere, 2007a). Based on the sample results, NYSDEC requested, in a letter dated May 21, 2007, that a work plan be developed for the pre-design testing of an on-Site vapor intrusion mitigation system. The *Vapor Intrusion On-Site Pre-Design Testing* Work Plan (pre-design testing work plan) for the mitigation system was submitted to NYSDEC on December 17, 2007 and approved in a letter dated January 2, 2008 (NYSDEC, 2008). In accordance with the approved pre-design testing work plan, diagnostic communication testing was conducted to assess if the sub-slab was conducive to sub-slab depressurization for the building, and if so, to provide the basis of design for an SSDS. Results of the diagnostic communication testing were submitted to NYSDEC in the *On-Site Design Testing Results and Preliminary VI Mitigation Basis of Design letter report* (BOD letter) dated October 22, 2008 (O'Brien & Gere, 2008). NYSDEC and NYSDOH approved the basis of design for the SSDS in a letter dated December 31, 2008 (NYSDEC, 2008). The approval also included a request from NYSDEC/NYSDOH to further evaluate sub-slab communication beneath the "Showroom" area of the previous tenant's space.

O'Brien & Gere sent email correspondence to NYSDEC on February 2, 2009 (O'Brien & Gere, 2009a) documenting an on Site meeting with NYSDEC and the proposed locations for the additional communication testing. NYSDEC responded via telephone on February 3, 2009 confirming the additional locations were acceptable. A follow up email was sent by NYSDEC on February 4, 2009 (NYSDEC, 2009a) and the additional communication testing in this area was conducted on February 5, 2009. The results were reported to NYSDEC via email on March 13, 2009 (O'Brien & Gere, 2009b). On March 16, 2009, NYSDEC/NYSDOH sent email confirmation acknowledging the receipt of the additional communication testing (NYSDEC, 2009b).

The overall objective of the vapor intrusion mitigation system is to prevent the entry of Site constituents of concern (COCs) into the building by the installation of an SSDS.

1.3 REPORT ORGANIZATION

The remainder of the report is organized into the following sections:

- Section 2 – System Design: describes the general overall design basis used for the implementation of the SSDS.
- Section 3 – Installation and Commissioning: provides the specific procedures for the construction and start-up for the SSDS.
- Section 4 – Operations, Monitoring and Maintenance: provides the specific procedures for routine monitoring and maintenance, as well as contingency plans for non-routine maintenance of the SSDS.

2. SYSTEM DESIGN

2.1 OVERALL BASIS OF DESIGN

The design is based on the ability of the sub-slab soils to allow air movement beneath the slab toward the extraction points (i.e., sub-slab depressurization). To quantitatively analyze this, a network of suction holes and measurement test holes were drilled through the slab. A vacuum was applied sequentially at the suction holes using a six horsepower "shop vac" and, using a micro-manometer, the pressure differential across the slab (pressure above the slab versus the pressure below the slab) was measured at each test hole. This procedure is referred to as communications testing. A negative pressure differential (i.e., pressure is lower in the subsurface than the interior of the structure) of 0.002 inches of water is considered an acceptable indicator that airflow can be obtained during system operation as noted in the approved pre-design testing work plan.

Variables such as building footers, sub-slab piping, and slab penetrations can affect the results of the testing and must be accounted for in the design and installation. Based on the test readings, zones of influence for each suction hole were estimated. To maximize building coverage, an overlap of these zones was obtained. During the communication testing, the building was divided into two distinct areas for the purpose of design. The east and west portions of the building were treated as individual entities due to the two tenants that were occupying the building at the time.

2.2 COMMUNICATION TESTING

In accordance with the approved pre-design testing work plan, the diagnostic communication testing was conducted to assess if the sub-slab was conducive to sub-slab depressurization for the building, and if so, to provide the basis of design for an SSDS. The pre-design testing and basis of design activities were developed based on the U.S. Environmental Protection Agency's (USEPA's) *Radon Reduction Techniques for Existing Detached Houses*[1]. Testing was conducted on August 18-19, 2008. The results of this communication testing were presented in a letter to NYSDEC dated October 22, 2008 and are summarized below.

At the time of the initial communication testing, the Site building was subdivided into two tenant spaces (herein referred to as the Eastern tenant space and Western tenant space). During the communication testing, each tenant space was considered as a separate entity, not knowing future-use scenarios including heating, ventilation and air conditioning (HVAC) considerations. As part of the testing, a total of ten communication test suction holes (CTSHs) and twelve communication test points (CTPs) were installed throughout both units. Within the Eastern tenant space, a total of six CTSHs and eight CTPs were installed. Within the Western tenant space, a total of three CTSHs and four CTPs were installed in the warehouse area only.

For the communication testing, a minimum sub-slab depressurization of 0.002 inches of water was established in the approved pre-design testing work plan as a guideline for acceptable communication between the subject CTSH and surrounding CTSHs and CTPs. Manometer readings were recorded for each tenant space and are included in the October 22, 2008 letter (BOD letter). Acceptable results ranging from 0.002 to 0.025 inches of water were achieved for all CTSH and CTP pairings tested, except for those performed around CTSH-1. However, testing from the nearby CTSH-3 provided acceptable communication results to the CTPs that were not communicating with CTSH-1.

There was one area of the Eastern tenant space (the southeast portion of the tenant's showroom) in which communication was unable to be evaluated because the tenant at the time requested that holes not be drilled in the show room area. Therefore, the southeast portion of the showroom did not include any CTSHs or CTPs.

In February 2009, pursuant to NYSDEC's December 31, 2008 letter, supplemental communication testing was conducted to address the areas within the Eastern tenant space where communication was unable to be evaluated during the 2008 testing. Approval to conduct the additional communications was granted during a January 27, 2009 Site meeting between O'Brien & Gere, the property owner, and NYSDEC. The results of this

[1] *Radon Reduction Techniques for Existing Detached Houses: Technical Guidance (Third Edition) for Active Soil Depressurization Systems*, EPA 625/R-93-011, U.S. Environmental Protection Agency, October 1993.

testing were transmitted to NYSDEC via email on March 13, 2009 (O'Brien & Gere, 2009b) and were subsequently acknowledged by NYSDEC/NYSDOH in an email dated March 16, 2009 (NYSDEC, 2009b)

2.3 SSDS DESIGN

Once the communication testing was finalized, a design drawing package showing the proposed locations of the SSDS suction points, pipe routing, and fan locations was developed and submitted to the property owner's representative (Simone Development) for review and approval on November 2, 2009.

From the initial November 2009 design submittal through 2013, the SSDS design underwent a number of revisions based on the property owner's numerous requests in consideration of the then current and future tenant requirements. The SSDS suction points, pipe routing, and fan locations were modified; most notably in April 2010, December 2010, February 2011, and November 2012. In December 2012, both of the previous tenants had moved out of the building and the property owner requested a final modification where all SSDS suction points were relocated along structural columns and exterior walls, as a new tenant would be moving in and the building would be undergoing a complete renovation.

In May 2013, a final SSDS layout (included as **Appendix A**) was prepared and submitted to the property owner for review and approval. The property owner approved this layout via email on May 21, 2013 (Simone Development, 2013), at which time a final design drawing package was prepared for submittal to NYSDEC, the Village of Mamaroneck Building Department, and the Westchester County Department of Health (WCDOH).

The design drawing package was submitted to NYSDEC via email on June 20, 2013 (O'Brien & Gere, 2013a). Approval was received from NYSDEC and NYSDOH in a letter dated July 2, 2013 (NYSDEC, 2013).

3. INSTALLATION AND COMMISSIONING

3.1 CONSTRUCTION

Upon receipt of approval from NYSDEC, NYSDOH, and the Village of Mamaroneck Building Department construction of the SSDS was initiated on August 6, 2013. Installation of the SSDS was completed by O'Brien & Gere Inc., of North America.

As shown on the SSDS design drawings (included as **Appendix A**), the system consists of fourteen SSPs and associated CTPs, system piping, and five mitigation fans. The system piping, which comprises the suction point piping and system manifold, consists of Schedule 40, 3-inch and 4-inch polyvinyl chloride (PVC) piping. The mitigation fans that were installed are RadonAway™ DynaVac high-suction series weatherproof fans (model # HS-5000).

As shown in the system design drawings and **Figure1**, the SSDS suction points were manifolded together so that no more than three SSPs would be connected to a single fan.

The installation of the SSDS involved the following:

- Advancing a 4-½ inch diameter concrete coring bit to a sufficient depth to core through the existing building floor (approximately 12-inches);
- Hand-excavating a small earthen cavity horizontally and vertically at each suction point and profiling and disposing of the soil off-Site in accordance with all local, state, and Federal laws;
- Installing a 4-inch diameter Schedule 40 PVC pipe from each suction point to a piping manifold;
- Connecting the piping manifold to an in-line mitigation fan, equipped with a condensation bypass, mounted on the exterior of the building;
- Providing electrical power and a switch to each fan;
- Constructing the fan enclosures on each side of the building;
- Sealing the suction point with a polyurethane sealant (Geocel® 3300);
- Installing six permanent CTPs at the four quadrants and along the northern and southern centerlines of the building (as shown in **Figure1**). Details of the permanent CTPs are included on **Figure 2**; and
- Installing Magnehelic pressure gages and vacuum monitoring alarms at each system manifold prior to connecting to the mitigation fan.

During construction, it was established that the SSPs located adjacent to the building's columns could not be installed as planned, due to a sub-grade column footer that had not been previously identified. As a result, the sub-slab penetration locations for suction points 1, 2, 5, 6, 9, 10, 11, and 14 were slightly modified. As shown on **Figures 1 and 2**, each of the affected sub-slab suction points was moved approximately 2-feet laterally away from the sub-grade column pier and connected to the system manifold via 3-inch diameter PVC piping. This change does not have any material impact upon the design intent or operation of the system. A detail of the sub-slab penetration at these SSP locations is provided on **Figure 2**. All other SSPs were installed as designed.

The approved BOD letter (O'Brien & Gere, 2008), as well as the design drawings (O'Brien & Gere, 2013a), identified that observable slab cracks and other openings will be sealed, caulked, or covered. Additionally, floor drains that are not connected to the municipal sewer were to be replaced with Dranjer-type devices that allow water to travel down the drain but do not allow vapors to migrate up the drain. As part of the building renovation conducted by the owner and new tenant, the previously identified floor drains were removed and sealed with concrete. Additionally, the entire building slab was sealed with an epoxy floor coating by the tenant. Specifics of the epoxy coating have not been provided by the property owner or tenant to ITT.

In accordance with local building codes, proper building and electrical permits were obtained prior to the start of installation activities (see Section 3.1.1 below). In accordance with the Westchester County Sanitary Code (Article XIII - Air Quality), an Application for a Permit to Construct/Certificate to Operate was submitted to the

WCDOH, Bureau of Environmental Quality (O'Brien & Gere, 2013b) (see Section 3.1.2 below). In accordance with 6 NYCRR 201-3.3(c), as the SSDS was installed with an order on consent, it is defined as a trivial activity and is exempt from the registration and permitting provisions of Subparts 201-4, 201-5, and 201-6 of 6 NYCRR 201.

3.1.1 Construction Permits

Prior to the initiation of construction of the SSDS, the design drawing package was submitted to the Village of Mamaroneck Building Department on June 20, 2013 (with additional fee submitted on June 26, 2013) for a building and electrical permit. As a follow-up to the building and electrical permit application, O'Brien & Gere conducted a site visit with the Village of Mamaroneck Building Department review the proposed SSDS. On August 6, 2013 the building and electrical permits were issued: Building Permit Number: 13-0638 and Electrical Permit Number: 13-0664 (included as **Exhibit 2**). O'Brien & Gere initiated construction of the SSDS on August 6, 2013.

An inspection of the construction of the electrical components of the SSDS was conducted and an electrical permit Certificate of Compliance was issued by State Wide Inspection Services on August 22, 2013 (included as **Exhibit 3**).

At the completion of construction of the SSDS, the Village of Mamaroneck Building Department conducted a final building inspection on May 23, 2014. The Building Department issued a Certificate of Compliance on July 8, 2014 (included as **Exhibit 4**). Along with the Certificate of Compliance, **Exhibit 4** includes the final cost affidavit, professional certification, and elevation certificate.

3.1.2 Environmental Permit – WCDOH Air Permit

An application package was submitted to the WCDOH on October 22, 2013 to apply for a Permit to Construct a Source of Air Contamination for the emission points associated with the SSDS (O'Brien & Gere, 2013). Once the Permit to Construct is approved, an application for a Certificate to Operate the SSDS will be submitted to WCDOH. During discussions with WCDOH, and confirmed in an email dated September 9, 2013, WCDOH informed O'Brien & Gere that the installation and operation of the SSDS could proceed prior to the WCDOH approval of the Permit to Construct and issuance of a Certificate to Operate (WCDOH, 2013a).

Administrative and technical comments on the Permit to Construct by WCDOH were received on December 5, 2013 (WCDOH, 2013b) and June 12, 2014 (WCDOH, 2014). Requirements associated with the Certificate to Operate will be incorporated into the SSDS Operations, Monitoring, and Maintenance Plan as required. If additional monitoring will be necessary based on the WCDOH Certificate to Operate, then the Operations, Monitoring, and Maintenance portions of this report will be updated and submitted to NYSDEC.

No other environmental permits were necessary for the construction and operation of the SSDS.

3.2 SYSTEM COMMISSIONING

Upon SSDS installation, each fan manifold system was commissioned to document that it was properly installed, achieving the design criteria, and performing in accordance with the performance specifications defined in the approved BOD letter (O'Brien & Gere, 2008). Results of the installation and operation commissioning are documenting on the Installation and Operation Commissioning Checklist included as **Appendix B**.

The system was initially turned on September 4, 2013, at the completion of the interior construction and upon issuance of the electrical permit Certificate of Compliance. At this time, the system was inspected and preliminarily commissioned to confirm that it was achieving the design criteria. With the SSDS operating, smoke tubes were used to qualitatively check for leaks through cracks and floor joints in the building slab (as the floor was not sealed by the tenant at that time), as well as each suction point and in the system piping. No leaks within the building slab, at the SSPs, or within the system piping were identified based upon visual observations. The system could not be fully commissioned at that time, as the renovation work for the building was still ongoing and the new HVAC system was not functional (i.e., maximum building depressurization conditions could not be achieved).

As part of the system commissioning, communication testing was conducted to confirm that depressurization is occurring across the building slab. In accordance with the approved BOD letter (O'Brien & Gere, 2008), the SSDS was commissioned to achieve the design criteria of a measureable differential pressure of at least 0.002 inches of water measured at each of the four quadrants, as well as at the northern and southern centerlines of the building slab. The static pressure and velocity at each suction point and at the fan inlet were recorded. These measurements will define the operating performance of each manifolded SSPs as they achieve depressurization across the entire slab.

The SSDS was fully commissioned on December 17, 2013. At this time, the building renovation was complete and the HVAC system was fully operational. Commissioning was conducted prior to the opening of the tenant's business and all doors and windows were kept closed. As noted in Section 3.1 above, an inspection of the building slab identified that an epoxy coating had been installed by the tenant. A second qualitative smoke test of the building slab, the SSPs, and the system piping did not identify any leaks.

To confirm that a negative pressure is being attained as designed (i.e., the sub-slab pressure is lower than the overlying indoor air pressure within the building), micro-manometer readings were taken at each of the permanent CTPs. The results of the communication testing are included on **Table 1**. The building exhibited communication readings (i.e., a differential pressure between the indoor air and the sub-slab,) measured between -0.012 inches of water and -0.057 inches of water. The static pressure and velocity at each suction point and at the fan inlet measured during the system commissioning are included on **Table 2**.

3.3 POST-MITIGATION INDOOR AIR SAMPLING

A one-time post-mitigation indoor air (PMIA) sampling event will be conducted in the Site building no sooner than 30 days after commissioning of the system in accordance with October 2006 NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDEC, 2008b).

A total of six indoor air samples and one outdoor ambient air samples will be collected. This quantity of samples is consistent with the pre-mitigation sampling conducted in January 2007 and is in accordance with NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (October 2006). Sample locations will be selected with the tenant, so as to not interfere with their business operations. Three samples will be collected on the eastern side of the building, with the remaining three samples to be collected on the western half of the building. If accessible, the January 2007 sample locations will be used.

Each sample will be collected over a 24-hour period and will require two separate visits to the property, one visit to install and initiate the sampling, and a second visit approximately 24 hours later to terminate the sampling. All sample collection procedures (including a chemical inventory prior to sampling), sample analysis, quality assurance/quality control, and data evaluation and reporting will be conducted in accordance with the NYSDEC-approved Vapor Intrusion Work Plan dated May 23, 2006 (O'Brien & Gere, 2006) and the NYSDOH *Guidance for Evaluating Soil Vapor Intrusion in the State of New York* (NYSDOH,2006). Sampling reports will be prepared and submitted to NYSDEC, NYSDOH, and WCDOH prior to submittal to the property owner in accordance with 30-day notification requirements.

Results of the PMIA sampling will be evaluated to ascertain the effectiveness of the SSDS. Sample concentrations for Site compounds of concern and their respective degradation products (as shown in the table below) will be compared to their respective NYSDOH air guideline values. Ambient air results and the chemical inventory will also be used to evaluate the sample results. Other compounds will be analyzed and reported but will not be considered Site-related, and any follow-on actions to address impacts related to these compounds will not be the responsibility of ITT.

Primary Compound	Degradation (Daughter Compounds)	
Tetrachloroethene (PCE)	Trichloroethylene (TCE)	1,1-Dichloroethene (1,1-DCE)
	cis-1,2-Dichloroethene (cis-1,2-DCE)	Vinyl Chloride
	trans-1,2-Dichloroethene (trans-1,2-DCE)	
Carbon Tetrachloride	Chloroform	Methyl Chloride (Chloromethane)
	Methylene Chloride	
1,1,1-Trichloroethane (TCA)	1,1-Dichloroethane (1,1-DCA)	Ethyl Chloride (Chloroethane)

4. OPERATIONS, MONITORING, AND MAINTENANCE

4.1 SSDS OPERATION

The SSDS, as installed and commissioned, is operational and performing in accordance with the parameters established in the approved BOD letter (O'Brien & Gere, 2008). The SSDS is designed to operate continuously for many years. Life expectancy of the system is dependent primarily on the life expectancy and warranty of the fan, which is approximately ten years.

It is recommended that the local indicators (i.e., Magnehelic vacuum gage and low-vacuum alarm), located in the vicinity of the fans be checked periodically to confirm that the system is operating. The property owner and tenant have been and will be instructed to monitor the system's operation and to notify O'Brien & Gere and/or ITT in the event that they identify potential operational malfunction. The property owner and tenant's calls will be responded to and a non-routine maintenance visit will be conducted to evaluate the problem and make repairs, if warranted.

This section details the routine and non-routine maintenance activities that will be conducted for as long as the SSDS operation is required by NYSDEC/NYSDOH. In addition, this section will describe the ongoing communication that will be maintained with the property owner and tenant.

4.2 ROUTINE MONITORING AND MAINTENANCE

Routine maintenance activities include annual inspections and preventive maintenance of the SSDS.

Annual Inspections

Each annual inspection will be conducted within three months of the anniversary of the SSDS initial commissioning (December 17, 2013). Each routine maintenance inspection will assess the SSDS performance with respect to its prior commissioned performance as well as a visual inspection of the structure and the SSDS installation, both indoors and outdoors. **Appendix C** provides routine maintenance inspection field forms that will be used. The forms define all structure and system checks that will be conducted during annual inspections. In general, items inspected include:

- Structure – Checking for changes in the structure that could affect the SSDS performance, such as new doors or windows and major changes to the HVAC systems.
- Fan and Electrical – Recording fan inlet and suction point vacuums and comparison with the prior commissioned vacuums. Inspections of electrical connections.
- Piping, Slab and Wall – Inspecting piping supports, connections, and exhaust stack. Checking for visible new cracks in walls and floors.

Please note that it is assumed that the strength of the SSDS (i.e., induced vacuum) will not change so long as the fan(s) and suction point(s) vacuum remain the same as they were during the prior commissioning, which is either the initial commissioning or the latest re-commissioning. Communication testing will be conducted as part of the annual inspection to verify that the SSDS is meeting the design criteria of a measurable differential pressure of 0.002 inches of water.

The field forms provide documentation for "as-found" conditions, which are SSDS conditions existing at the beginning of the inspections. If changes are made to any component of the SSDS by the inspectors (referred to as corrective actions), then the field forms also provide documentation for "as-left" conditions, which are the SSDS conditions at the end of the inspection after corrective actions are performed. If no corrective actions are performed then documentation of "as-left" conditions is not applicable.

The criteria requiring some corrective actions are specified in the field forms, such as sealing floor and wall cracks that draw smoke (see Piping, Slab and Wall field form in **Appendix C**). Most corrective actions do not affect the SSDS's ability to depressurize the slab, such as stack exhaust cap replacement.

SSDS re-commissioning will be conducted if any of the following conditions occur:

- Depressurization in any of the slab's quadrants is measured below 0.002 inches of water during the aforementioned communication testing
- The SSDS needs to be redesigned for any reason

Re-commissioning field forms are presented as **Appendix D**. The "as-left" conditions documented on these forms set the new SSDS performance values for future inspections.

Whenever possible, corrective actions will be performed during the routine annual inspection site visit; however, for more significant corrective actions (such as piping or fan replacement), a follow-up appointment may be necessary.

Following a routine maintenance inspection visit, the results of the visit will be communicated in a letter to the property owner and will include a description of the corrective action(s) performed, if applicable. An example letter providing results of a routine maintenance inspection is included as **Appendix E**. Inspection letters will not require NYSDEC / NYSDOH review; however, copies will be submitted to NYSDEC / NYSDOH at the time they are submitted to the property owner.

Preventive Maintenance

The fan is the only component of the system that is anticipated to wear out over time. According to the manufacturer, the fans' expected life is 10 years. Therefore, as preventive maintenance for these systems, it is anticipated that the fans will be replaced at a frequency of once per ten years. However, fans may be replaced sooner than 10 years if fan degradation (that is, gradual decline in vacuum and flow rate) is observed during the annual inspections.

Health and Safety

A health and safety plan will be developed for the operations, monitoring, and maintenance of the SSDS. The health and safety plan will be prepared in the form of a Job-Safety Analysis and will be included as part of the overall Site Safety Plan.

4.3 NON-ROUTINE MAINTENANCE (CONTINGENCY)

An operational fact sheet (see **Appendix F**) will be provided to the property owner and tenant, which instructs them how to routinely monitor the SSDS and provides a telephone number that they can call whenever they perceive a problem with the system.

A non-routine maintenance visit will be arranged to inspect the system and perform corrective actions, as needed, when the property owner or tenant calls. As with routine inspections, any actionable items found will be addressed as soon as possible. If they cannot or do not require immediate attention, a follow-up visit will be scheduled. The field forms included as **Appendices C and D** will be used where applicable to document the as-found and as-left conditions during non-routine maintenance visits.

Following a non-routine maintenance visit, the results of the visit will be communicated in a letter to the property owner and will include a description of the corrective action(s) performed, if applicable. An example letter providing results of a non-routine maintenance inspection is included as **Appendix G**. Inspection letters will not require NYSDEC / NYSDOH review; however, copies will be submitted to NYSDEC / NYSDOH at the time they are submitted to the property owner.

4.4 COMMUNICATIONS PLAN

In addition to the two letters to the property owner described above and included as **Appendices E and G**, an annual communications letter will be sent, via certified return receipt mail, (a sample of which is included as **Appendix H**) to the property owner that will remind them of the following:

- How to check on the proper operation of the system;
- To keep the systems operating on a continuous basis;
- To contact OBG/ITT if there will be any structure changes or new combustion appliances;
- To contact OBG/ITT if they intend to sell the property or if there will be any upcoming tenant changes;
- How to contact OBG/ITT for non-routine maintenance;
- Upcoming routine maintenance activities;
- A telephone number to call should they have questions; and
- Property owner should provide the above information to their tenant(s) in accordance with applicable laws.

5.0 REFERENCES

NYSDEC, 2008a, Letter to O'Brien & Gere Re: December 17, 2007 Proposal *Vapor Intrusion On-Site Pre-Design Testing,* January 2, 2008.

NYSDEC, 2008b, Letter to O'Brien & Gere Re: *On-Site Design Testing Results and Preliminary VI Mitigation Basis of Design*, December 31, 2008.

NYSDEC, 2009a, "Re: Fwd: Sealectro Mamaroneck – Additional Communication Testing Points" Email from James Schreyer to Gary Angyal (O'Brien & Gere), February 4, 2009.

NYSDEC, 2009b, "RE: Sealectro-Mamaroneck VI Update" Email from James Schreyer to Gary Angyal (O'Brien & Gere), March 16, 2009.

NYSDEC, 2013, Letter to O'Brien & Gere Re: SSDS Design Report Approval, July 2, 2013.

NYSDOH, 2006, *Guidance for Evaluating Soil Vapor Intrusion in the State of New York*, October 2006.

O'Brien & Gere, 2006, *Vapor Intrusion Work Plan*, May 23, 2006

O'Brien & Gere, 2007a, *Vapor Intrusion Evaluation Results Report, Former Sealectro Site, Mamaroneck,* April 4, 2007

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O'Brien & Gere 2009b, "Sealectro-Mamaroneck VI Update" Email from Gary Angyal to James Schreyer (NYSDEC), March 13, 2009.

O'Brien & Gere 2009, "Sealectro-Mamaroneck VI Update" Email from Gary Angyal to James Schreyer (NYSDEC), March 13, 2009.

O'Brien & Gere 2013a, "Former Sealectro, Inc. Facility – SSDS Design Package" Email from Stephen Mastripolito to Scott Deyette (NYSDEC), June 20, 2013.

O'Brien & Gere, 2013b, Letter to Westchester County Health Department Re: Permit to Construct Applications / Emission Points 00001, 00002, 00003, 00004, and 00005, October 22, 2013.

Simone Development 2013, "Re: Mamaroneck – 139 Hoyt Avenue Modifications to Sub Slab Depressurization System Layout" Email from Michael Colarassi to Gary Angyal (O'Brien & Gere), May 21, 2013.

WCDOH 2013a, "Re: Air Permit for Sub Slab Depressurization System" Email from Natasha Court to Cris Hine (O'Brien & Gere), September 9, 2013.

WCDOH, 2013b, "Comments: 139 Hoyt Street – WCHD Review" Email from Antonella Caruso to Cris Hine (O'Brien & Gere), December 5, 2013.

WCDOH, 2014, "SSDS: 139 Hoyt Ave Mamaroneck" Email from Antonella Caruso to Gary Angyal (O'Brien & Gere), June 12, 2014.

Table 1

Commissioning Communication Test Reading

Former Sealectro Site
139 Hoyt Avenue Building
Vapor Intrusion Mitigation

SSD System Commissioning - Communication Test Readings (12/17/2013)

Communication Test Point	Mitigation Fans On Pressure Above Slab (inches water)	Mitigation Fans On Pressure Below Slab (inches water)	Pressure Delta	Location
A	0.000	-0.039	0.039	NW Corner of Building
B	0.000	-0.057	0.057	North centerline of building, in front of cooler
C	0.000	-0.036	0.036	Janitors Closet
D	0.000	-0.012	0.012	Office adjacent to Keg Cooler
E	0.000	-0.013	0.013	Electrical/Utility Room
F	0.000	-0.041	0.041	SW corner of building adjacent to exterior vestibule

Table 2

Fan Commissioning Data

Former Sealectro Site
139 Hoyt Avenue Building
Vapor Intrusion Mitigation

Commissioning Communication Test - Ventilation Fan Readings (12/17/2013)

Fan[1]	Ventilation Fan Identifier[2]	Manometer Reading[3] (Inches Water)	Velocity (feet/minute)	Fan Location
1	EP00001	-0.345	700	West Enclosure
2	EP00002	-0.209	730	West Enclosure
3	EP00003	-0.145	566	East Enclosure
4	EP00004	-0.340	655	East Enclosure
5	EP00005	-0.262	640	East Enclosure

Notes:
1. Fans are RadonAway Dyna Vac High Vacuum Series, model # HS-5000
2. Fan identifier per WCDOH Permit to Construct application
3. Manometer measured using micro-manometer

Sub-Slab SSP Static Pressure (Vacuum) Readings (12/17/2013)

SSP #	Static Pressure Reading (Inches Water)	Velocity at SSP (feet/minute)	Fan System	SSP Location
1	-0.211	210	1	Column B-5
2	-0.170	160	1	Column C-6
3	-0.148	190	1	Utility Closet
4	-0.073	430	2	Rear Wall between Columns D-1 and E-1
5	-0.086	131	2	Column E-4
6	-0.092	195	2	Column C-4
7	-0.080	520	3	Rear Wall between Columns G-1 and H-1
8	-0.145	220	3	Northeast corner of building adjacent to exterior vestibule
9	-0.290	188	4	Column H-2
10	-0.142	205	4	Column G-4
11	-0.155	190	4	Column F-6
12	-0.173	235	5	East wall south of exterior vestibule #2
13	-0.139	388	5	East wall, behind keg cooler
14	-0.145	194	5	Column G-6

Figure 1

As-Built Sub-Slab Depressurization System: Building Floor Plan

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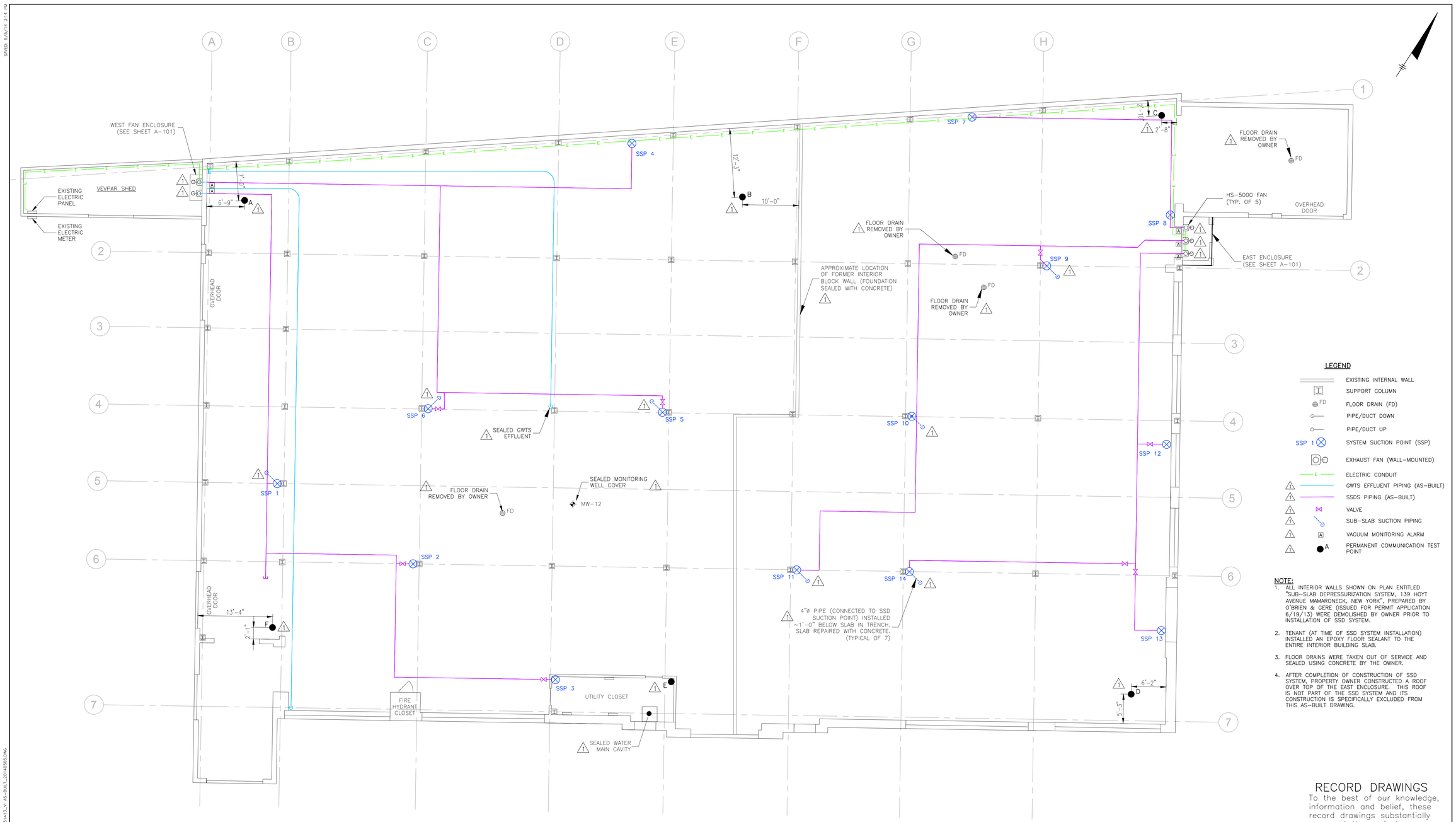

LEGEND

- EXISTING INTERNAL WALL
- SUPPORT COLUMN
- FD — FLOOR DRAIN (FD)
- PIPE/DUCT DOWN
- PIPE/DUCT UP
- SSP 1 — SYSTEM SUCTION POINT (SSP)
- EXHAUST FAN (WALL-MOUNTED)
- E — ELECTRIC CONDUIT
- 1 — GWTS EFFLUENT PIPING (AS-BUILT)
- 1 — SSDS PIPING (AS-BUILT)
- 1 — VALVE
- 1 — SUB-SLAB SUCTION PIPING
- 1 A — VACUUM MONITORING ALARM
- 1 A — PERMANENT COMMUNICATION TEST POINT

NOTE:

1. ALL INTERIOR WALLS SHOWN ON PLAN ENTITLED "SUB-SLAB DEPRESSURIZATION SYSTEM, 139 HOYT AVENUE MAMARONECK, NEW YORK", PREPARED BY O'BRIEN & GERE (ISSUED FOR PERMIT APPLICATION 6/19/13) WERE DEMOLISHED BY OWNER PRIOR TO INSTALLATION OF SSD SYSTEM.
2. TENANT (AT TIME OF SSD SYSTEM INSTALLATION) INSTALLED AN EPOXY FLOOR SEALANT TO THE ENTIRE INTERIOR BUILDING SLAB.
3. FLOOR DRAINS WERE TAKEN OUT OF SERVICE AND SEALED USING CONCRETE BY THE OWNER.
4. AFTER COMPLETION OF CONSTRUCTION OF SSD SYSTEM, PROPERTY OWNER CONSTRUCTED A ROOF OVER TOP OF THE EAST ENCLOSURE. THIS ROOF IS NOT PART OF THE SSD SYSTEM AND ITS CONSTRUCTION IS SPECIFICALLY EXCLUDED FROM THIS AS-BUILT DRAWING.

RECORD DRAWINGS

To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.

O'BRIEN & GERE ENGINEERS, INC.

By: _____

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NOTE: This document was developed in color. Reproduction in black/white may not represent the data as intended.

IN CHARGE OF GAA

DESIGNED BY SM CHECKED BY JMC

DRAWN BY SM/HC

1/8"=1'-0" (8 4 0 8 16)

NO.	DATE	REVISION	INIT.
1		AS-BUILT	
0	6/19/13	ISSUED FOR BUILDING PERMIT APPLICATION	JRH

O'BRIEN & GERE

FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN
139 HOYT AVENUE
MAMARONECK, NEW YORK

FILE NO. 3356.51413

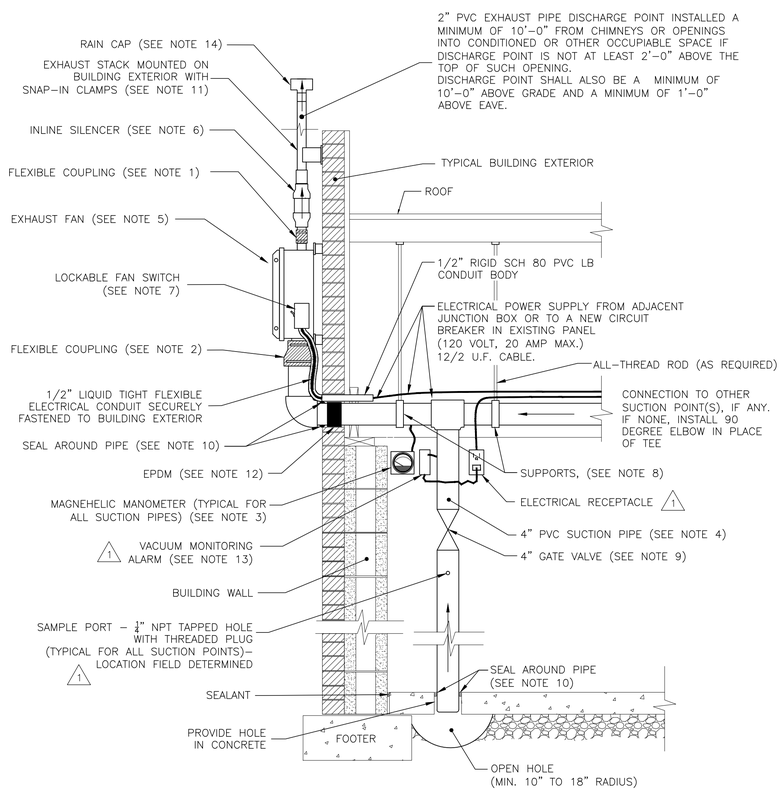
DATE MAY 2014

FIG. 1

I:\VT\3356\MAMARONECK\51413.2014 SERVICES\DOCS\DWG\51413_W_AS-BUILT_20140505.DWG

Figure 2

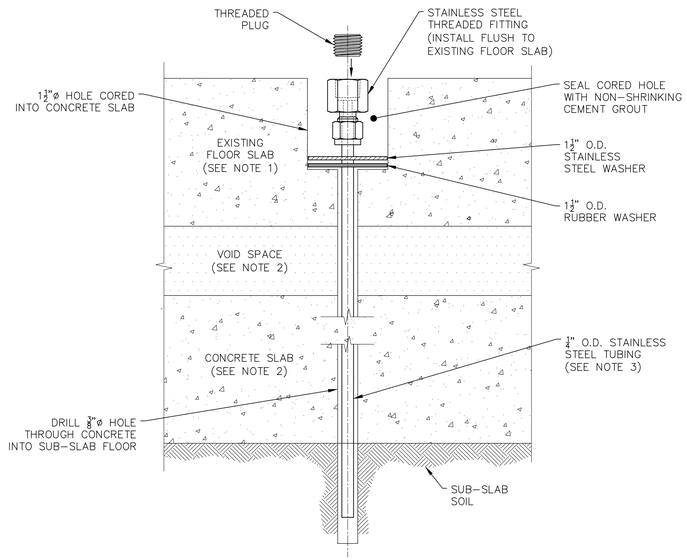
As-Built Sub-Slab Depressurization System: Section and Details



1 NOTE:
DETAIL FOR SUCTION POINT PENETRATIONS AT SSP LOCATIONS 2, 3, 4, 7, 12 AND 13.

TYPICAL SUCTION POINT SECTION

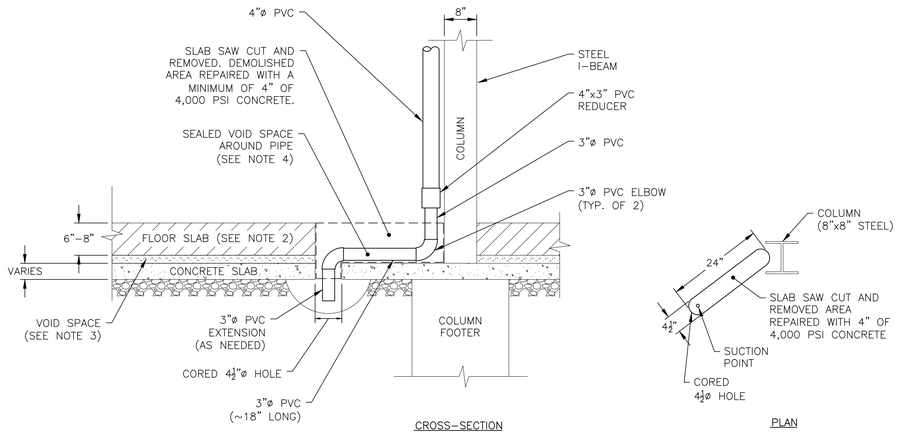
NOT TO SCALE



NOTES:
1. BUILDING FLOOR SLAB THICKNESS VARIES (TYPICAL THICKNESS IS 8").
2. THICKNESS OF VOID SPACE AND LOWER CONCRETE FLOOR SLAB VARIES BY LOCATION.
3. STAINLESS STEEL TUBING EXTENDS APPROXIMATELY 1" BELOW BOTTOM OF LOWER CONCRETE FLOOR SLAB.

PERMANENT COMMUNICATION TEST POINT DETAIL 1

NOT TO SCALE



NOTES:
1. DETAIL FOR SUCTION POINT PENETRATIONS AT SSP LOCATIONS 1, 5, 6, 9, 10, 11, AND 14.
2. BUILDING FLOOR SLAB THICKNESS VARIES (TYPICAL THICKNESS IS 8").
3. VOID SPACE BETWEEN BUILDING FLOOR SLAB AND LOWER FLOOR SLAB IDENTIFIED AT ALL SSP LOCATIONS (THICKNESS OF VOID SPACE VARIES BY LOCATION).
4. VOID SPACE SEALED AT SUCTION POINT WITH EXPANDING POLYURETHANE FORM.

TYPICAL SUCTION POINT WITH RECESSED PIPING DETAIL 1

NOT TO SCALE

SECTION NOTES:

1. RCI #B–156–22 FLEXIBLE PVC COUPLING WITH STAINLESS STEEL CLAMPS OR EQUAL, (2.0"x2.0", 5–REQUIRED).
2. RCI #B–156–43 FLEXIBLE PVC COUPLING WITH STAINLESS STEEL CLAMPS OR EQUAL, (4.0"x3.0", 5–REQUIRED).
3. RADONAWAY #50001–2 MAGNAHELIC MANOMETER 0–50" WC OR EQUAL, INSTALL IN HEADER PIPE BETWEEN FAN AND FIRST SUCTION POINT. (5–REQUIRED)
4. PVC PIPE IS DUAL RATED DWV/SCH. 40 WITH DWV FITTINGS. ALL PIPING SHALL BE INSTALLED WITH CLEAR LOW VOLATILE ORGANIC COMPOUND (VOC) GLUE AND PRIMER (IPS OR HERCULES).
5. RADONAWAY HS–5000 FAN OR EQUAL. FAN IS DIRECT WIRED FROM A DEDICATED 115–120 VAC–20 AMP MAX. SUPPLY. THE FAN DRAWS A MAXIMUM OF 320 WATTS. TEST LOAD CIRCUIT PRIOR TO INSTALLATION OF FAN. FAN TO BE MOUNTED WITHIN FAN ENCLOSURES AS SHOWN ON FIGURE 1 AND FIGURE A–101. (5–REQUIRED)
6. RADONAWAY #24002 2" ø INLINE MUFFLER OR EQUAL. (5–REQUIRED)
7. PROVIDE MOTOR RATED WEATHER PROOF SWITCH, RADONAWAY #20003 OPTIONAL ELECTRICAL BOX OR EQUAL, WITH DISCONNECT SWITCH BOX AND LOCKABLE COVERPLATE. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC AND LOCAL CODES. (5–REQUIRED)
8. CONTRACTOR SHALL SECURE EQUIPMENT AND PIPING TO MINIMIZE ANY MOVEMENT. HORIZONTAL PIPE RUNS SHALL BE SUPPORTED AS NECESSARY WITH "J" HOOKS (RCI #HT–4), STRAPS, PIPE CLAMPS, OR EQUAL AND SHALL BE SLOPED TOWARD THE SUCTION HOLE IN FLOOR. SUPPORTS TO BE CONNECTED TO CEILING WITH ALL–THREAD ROD, AS REQUIRED. VERTICAL PIPE RUNS SHALL BE SUPPORTED EVERY 8 FEET (MAXIMUM) OR AS REQUIRED.
9. VALTERRA BLADEX VALVE #6401 OR EQUAL. TO BE INSTALLED WHEN MORE THAN ONE SUCTION HOLE PIPE IS INSTALLED. (13–REQUIRED)
10. GEOCEL 3300 POLYURETHANE SEALANT OR EQUAL AROUND PIPE OPENING.
11. RADONAWAY #67032–3 CLIC–SYSTEM CLAMPS OR EQUAL MOUNTED TO THE EXTERIOR WALL EVERY 8' (MAXIMUM) OR AS REQUIRED.
12. WRAP PIPE WITH EPDM, BACKER ROD, OR EQUIVALENT WHERE PIPE PENETRATES THE BUILDING TO REDUCE VIBRATION. SEAL PENETRATION WITH GEOCEL 3300 POLYURETHANE SEALANT, EXPANDING FOAM, OR EQUAL.
13. RCI #WVM–93C VACUUM MONITOR/ALARM OR EQUAL. ONE ALARM TO BE INSTALLED PER FAN/SSP SYSTEM (5 REQUIRED).
14. RCI RAIN CAP #RC–40–3 OR EQUAL (5–REQUIRED).

PLAN NOTES:

1. DIMENSIONS AND INSTALLATION LOCATIONS SHOWN ON FIGURE 1 ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.
2. CONTRACTOR SHALL GROUT AND/OR CAULK ALL MAJOR CRACKS AND OPENINGS IN FLOOR OR WALLS THAT WOULD IMPAIR SYSTEM PERFORMANCE.
1 3. ALL FLOOR DRAINS REMOVED BY OWNER. SEALED WITH CONCRETE.
4. CONTRACTOR SHALL VERIFY ELECTRICAL TIE–IN LOCATION.
5. ALL WORK TO BE IN GENERAL CONFORMANCE WITH ESTABLISHED RADON MITIGATION STANDARDS AS ESTABLISHED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND THE ASTM STANDARD PRACTICE (E 2121–08) FOR INSTALLING RADON MITIGATION SYSTEMS IN EXISTING LOW–RISE RESIDENTIAL BUILDINGS.
1 6. PERMANENT COMMUNICATION TEST POINTS INSTALLED AT CTP LOCATIONS A, B, C, D, E, AND F AS SHOWN ON FIGURE 1.
1 7. EXPANSION JOINTS WERE SEALED BY OWNER AS PART OF NEW FLOOR SYSTEM.

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: _____

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DESIGNED BY SM CHECKED BY JMC
DRAWN BY SM/HC

NOT TO SCALE

NO.	DATE	REVISION	INIT.
1		AS–BUILT	
0	6/19/13	ISSUED FOR BUILDING PERMIT APPLICATION	JRH

O'BRIEN & GERE

FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB–SLAB DEPRESSURIZATION SYSTEM DESIGN
139 HOYT AVENUE
MAMARONECK, NEW YORK

FILE NO. 3356.51413
DATE MAY 2013

FIG. 2

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A-101 – As-Built Sub-Slab Depressurization System: Architectural Details

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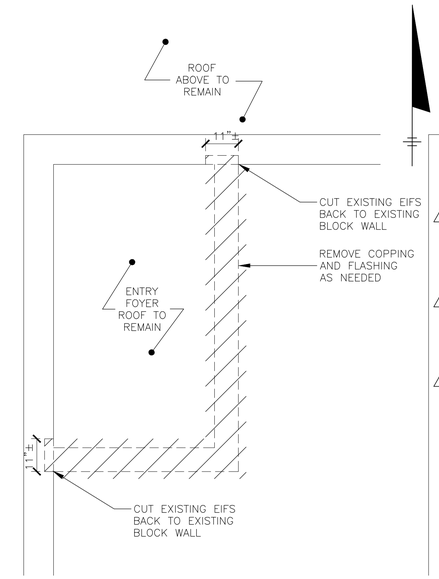
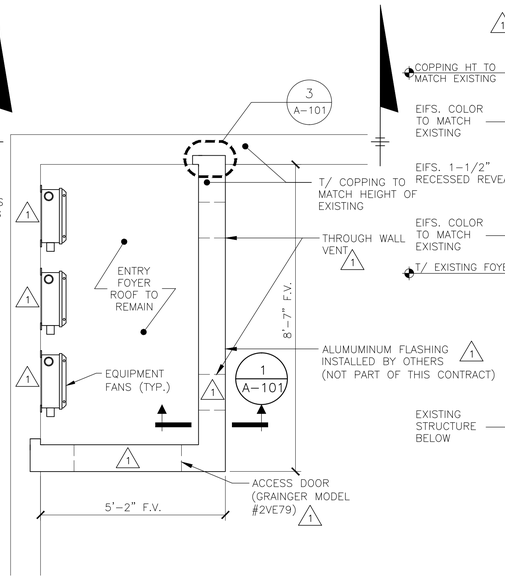


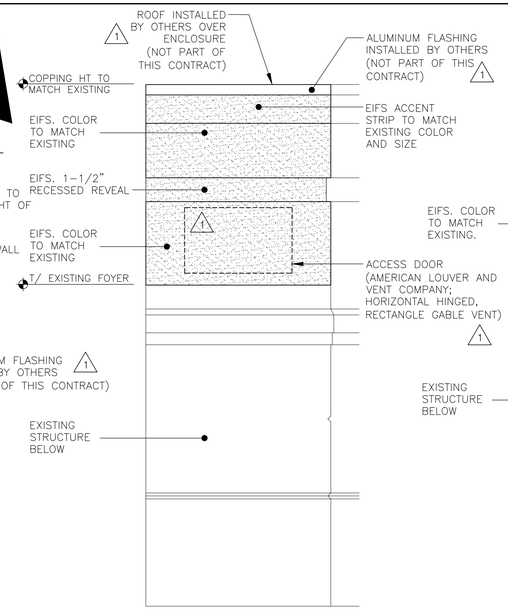
EAST FAN ENCLOSURE DEMO PLAN

SCALE: 1/2" = 1'-0"



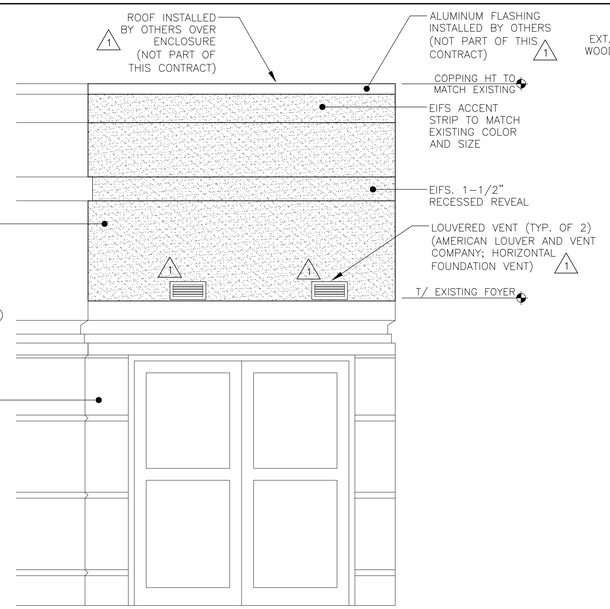
EAST FAN ENCLOSURE PLAN

SCALE: 1/2" = 1'-0"



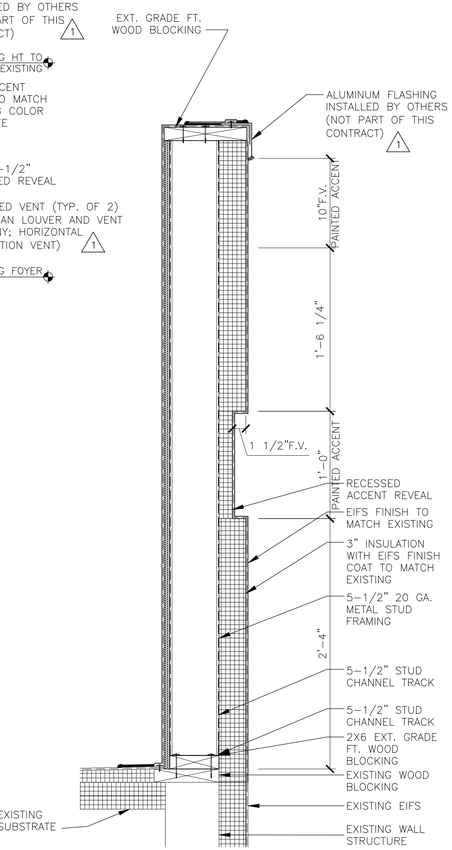
EAST FAN ENCLOSURE SOUTH ELEVATION

SCALE: 1/2" = 1'-0"



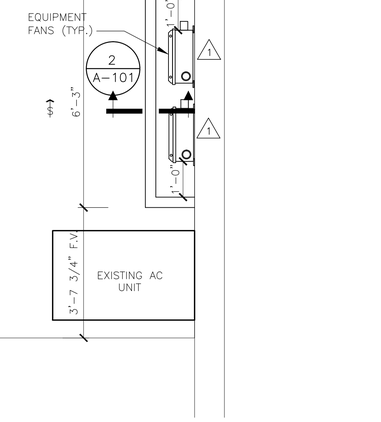
EAST FAN ENCLOSURE EAST ELEVATION

SCALE: 1/2" = 1'-0"



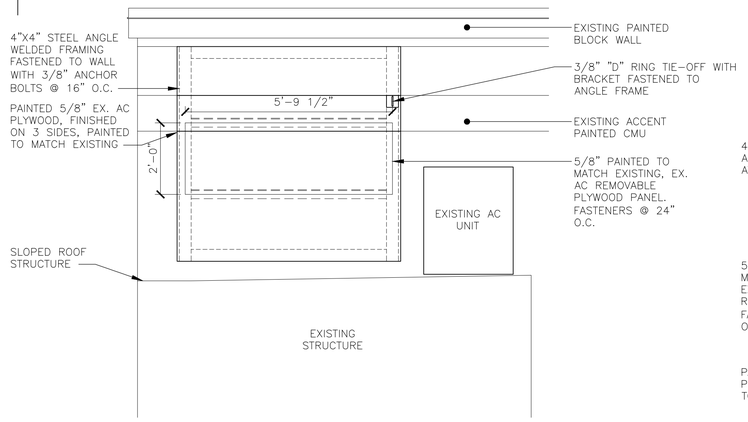
EAST FAN ENCLOSURE SECTION 1 / A-101

SCALE: 1-1/2" = 1'-0"



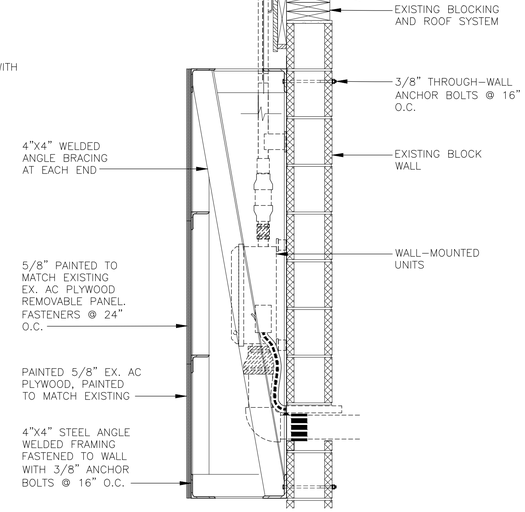
WEST FAN ENCLOSURE PLAN

SCALE: 1/2" = 1'-0"



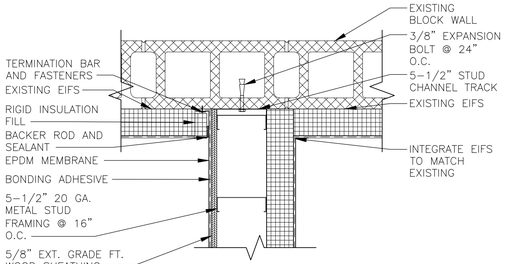
WEST FAN ENCLOSURE WEST ELEVATION

SCALE: 1/2" = 1'-0"



WEST FAN ENCLOSURE SECTION 2 / A-101

SCALE: 1" = 1'-0"



EAST FAN ENCLOSURE SECTION 3 / A-101

SCALE: 1-1/2" = 1'-0"

NOTES: TYPICAL @ ALL WALL TIE-IN LOCATIONS.

RECORD DRAWINGS

To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.

O'BRIEN & GERE ENGINEERS, INC.

By: _____

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IN CHARGE OF GAA

DESIGNED BY NJD CHECKED BY NJD

DRAWN BY MJW/HC

1/2"=1'-0" 1"=1'-0" 1 1/2"=1'-0"

NO.	DATE	REVISION	INIT.
1		AS-BUILT	
0	6/19/13	ISSUED FOR BUILDING PERMIT APPLICATION	JRH

O'BRIEN & GERE

FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN
139 HOYT AVENUE
MAMARONECK, NEW YORK

FILE NO. 3356.51413

DATE MAY 2014

A-101

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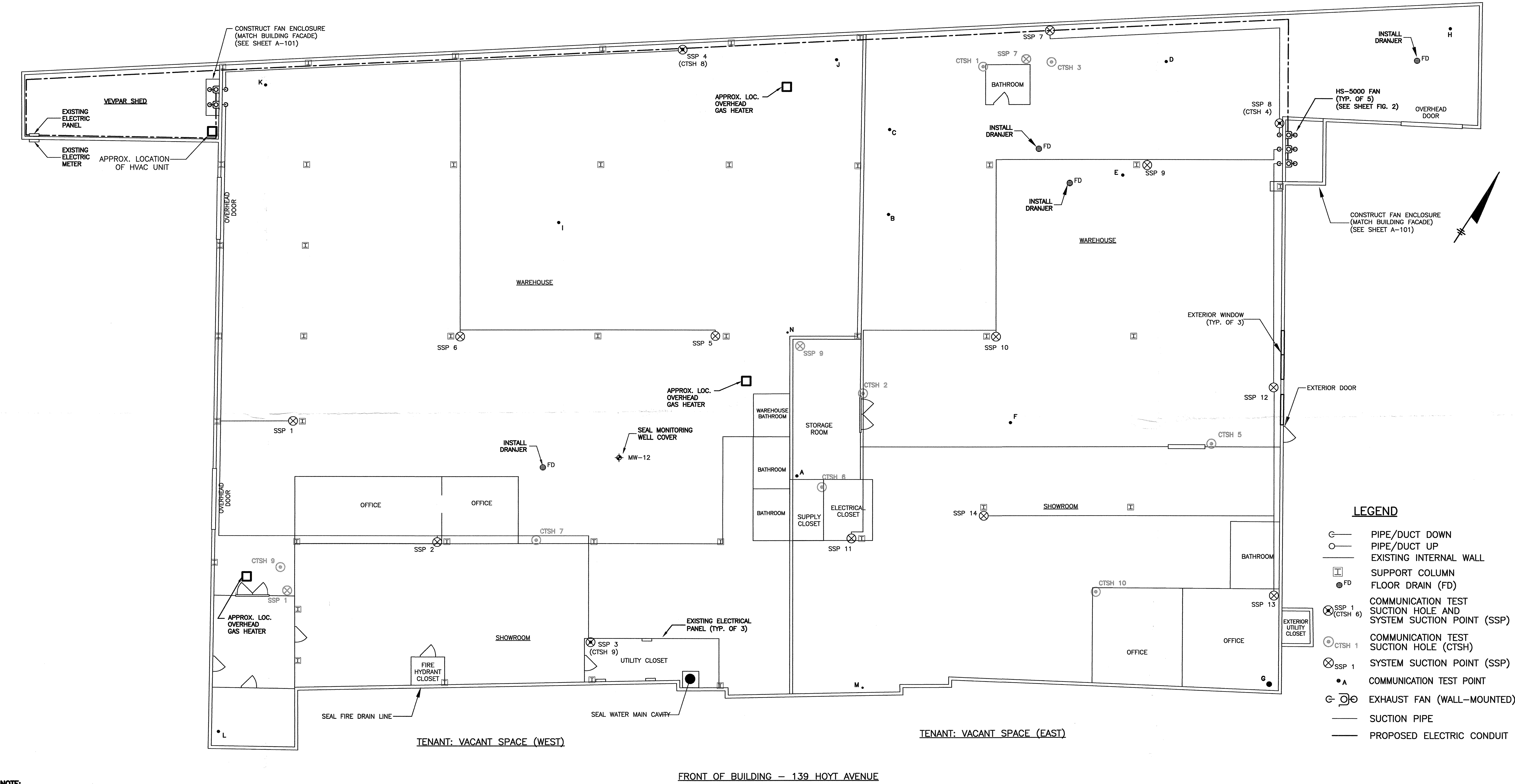
Appendix A

Design Drawing Package


CONSTRUCT FAN ENCLOSURE (MATCH BUILDING FACADE) (SEE SHEET A-101)
VEVPAR SHED
EXISTING ELECTRIC PANEL
EXISTING ELECTRIC METER
APPROX. LOCATION OF HVAC UNIT
OVERHEAD DOOR
SSP 4 (CTSH 8)
APPROX. LOC. OVERHEAD GAS HEATER
SSP 7
CTSH 1
CTSH 3
BATHROOM
INSTALL DRANJER
FD
HS-5000 FAN (TYP. OF 5) (SEE SHEET FIG. 2)
OVERHEAD DOOR
SSP 8 (CTSH 4)
SSP 9
WAREHOUSE
CONSTRUCT FAN ENCLOSURE (MATCH BUILDING FACADE) (SEE SHEET A-101)
EXTERIOR WINDOW (TYP. OF 3)
SSP 6
SSP 5
SSP 10
SSP 12
EXTERIOR DOOR
CTSH 2
CTSH 5
WAREHOUSE BATHROOM
STORAGE ROOM
SSP 1
SEAL MONITORING WELL COVER
MW-12
BATHROOM
CTSH 6
ELECTRICAL CLOSET
SUPPLY CLOSET
SSP 11
SSP 14
SHOWROOM
OFFICE
OFFICE
CTSH 7
SSP 2
CTSH 9
SSP 1
APPROX. LOC. OVERHEAD GAS HEATER
SHOWROOM
EXISTING ELECTRICAL PANEL (TYP. OF 3)
SSP 3 (CTSH 9)
UTILITY CLOSET
FIRE HYDRANT CLOSET
CTSH 10
SSP 13
EXTERIOR UTILITY CLOSET
OFFICE
OFFICE
SEAL FIRE DRAIN LINE
SEAL WATER MAIN CAVITY
TENANT: VACANT SPACE (WEST)
TENANT: VACANT SPACE (EAST)
FRONT OF BUILDING – 139 HOYT AVENUE
LEGEND
PIPE/DUCT DOWN
PIPE/DUCT UP
EXISTING INTERNAL WALL
SUPPORT COLUMN
FLOOR DRAIN (FD)
SSP 1 (CTSH 6) COMMUNICATION TEST SUCTION HOLE AND SYSTEM SUCTION POINT (SSP)
CTSH 1 COMMUNICATION TEST SUCTION HOLE (CTSH)
SSP 1 SYSTEM SUCTION POINT (SSP)
A COMMUNICATION TEST POINT
EXHAUST FAN (WALL-MOUNTED)
SUCTION PIPE
PROPOSED ELECTRIC CONDUIT

NOTE:
SYSTEM SUCTION POINT AND PIPE LOCATIONS MAY BE ADJUSTED UPON TENANT/OWNER REVIEW AND FIELD CONDITIONS AT THE TIME OF INSTALLATION.

STATE OF NEW YORK – JAMES R. HECKATHORNE – 56600 – LICENSED PROFESSIONAL ENGINEER

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IN CHARGE OF GAA
DESIGNED BY SM CHECKED BY JMC
DRAWN BY SM

1/8"=1'-0" 8 4 0 8 16

NO.	DATE	REVISION	INIT.
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O'BRIEN & GERE

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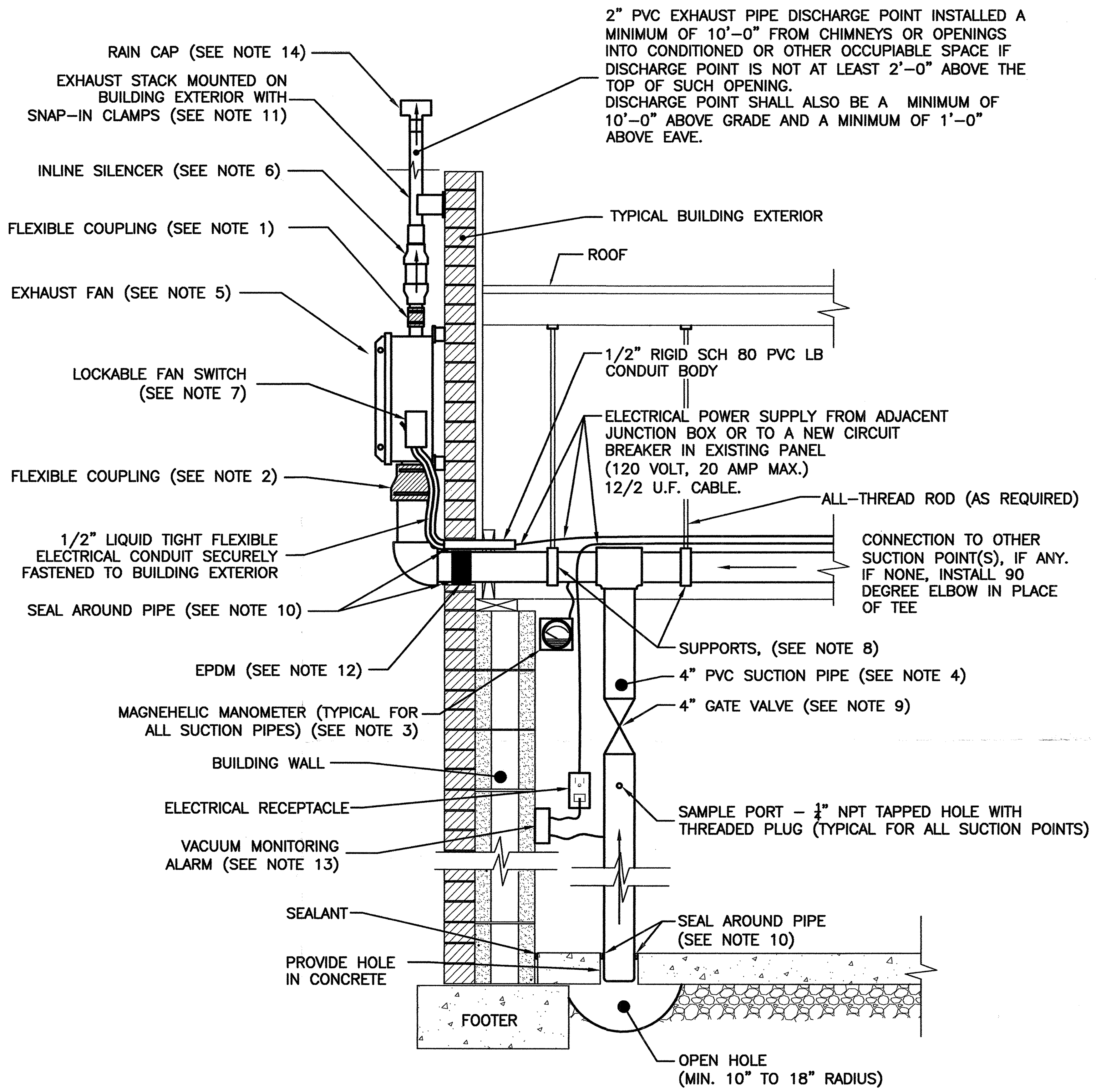
FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN
139 HOYT AVENUE
MAMARONECK, NEW YORK

FILE NO. 3356.50027.001
DATE JUNE 2013

FIG. 1



TYPICAL SUCTION POINT SECTION

NOT TO SCALE

SECTION NOTES:

1. RCI #B-156-22 FLEXIBLE PVC COUPLING WITH STAINLESS STEEL CLAMPS OR EQUAL, (2.0"x2.0", 5-REQUIRED).
2. RCI #B-156-43 FLEXIBLE PVC COUPLING WITH STAINLESS STEEL CLAMPS OR EQUAL, (4.0"x3.0", 5-REQUIRED).
3. RADONAWAY #50001-2 MAGNAHELIC MANOMETER 0-50" WC OR EQUAL, INSTALL IN HEADER PIPE BETWEEN FAN AND FIRST SUCTION POINT. (5-REQUIRED)
4. PVC PIPE IS DUAL RATED DWV/SCH. 40 WITH DWV FITTINGS. ALL PIPING SHALL BE INSTALLED WITH CLEAR LOW VOLATILE ORGANIC COMPOUND (VOC) GLUE AND PRIMER (IPS OR HERCULES).
5. RADONAWAY HS-5000 FAN OR EQUAL. FAN IS DIRECT WIRED FROM A DEDICATED 115-120 VAC-20 AMP MAX. SUPPLY. THE FAN DRAWS A MAXIMUM OF 320 WATTS. TEST LOAD CIRCUIT PRIOR TO INSTALLATION OF FAN. FAN TO BE MOUNTED WITHIN FAN ENCLOSURES AS SHOWN ON FIGURE 1 AND FIGURE A-101. (5-REQUIRED)
6. RADONAWAY #24002 2" ø INLINE MUFFLER OR EQUAL. (5-REQUIRED)
7. PROVIDE MOTOR RATED WEATHER PROOF SWITCH, RADONAWAY #20003 OPTIONAL ELECTRICAL BOX OR EQUAL, WITH DISCONNECT SWITCH BOX AND LOCKABLE COVERPLATE. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC AND LOCAL CODES. (5-REQUIRED)
8. CONTRACTOR SHALL SECURE EQUIPMENT AND PIPING TO MINIMIZE ANY MOVEMENT. HORIZONTAL PIPE RUNS SHALL BE SUPPORTED AS NECESSARY WITH "J" HOOKS (RCI #HT-4), STRAPS, PIPE CLAMPS, OR EQUAL AND SHALL BE SLOPED TOWARD THE SUCTION HOLE IN FLOOR. SUPPORTS TO BE CONNECTED TO CEILING WITH ALL-THREAD ROD, AS REQUIRED. VERTICAL PIPE RUNS SHALL BE SUPPORTED EVERY 8 FEET (MAXIMUM) OR AS REQUIRED.
9. VALTERRA BLADEX VALVE #6401 OR EQUAL. TO BE INSTALLED WHEN MORE THAN ONE SUCTION HOLE PIPE IS INSTALLED. (13-REQUIRED)
10. GEOCEL 3300 POLYURETHANE SEALANT OR EQUAL AROUND PIPE OPENING.
11. RADONAWAY #67032-3 CLIC-SYSTEM CLAMPS OR EQUAL MOUNTED TO THE EXTERIOR WALL EVERY 8' (MAXIMUM) OR AS REQUIRED.
12. WRAP PIPE WITH EPDM, BACKER ROD, OR EQUIVALENT WHERE PIPE PENETRATES THE BUILDING TO REDUCE VIBRATION. SEAL PENETRATION WITH GEOCEL 3300 POLYURETHANE SEALANT, EXPANDING FOAM, OR EQUAL.
13. RCI #WVM-93C VACUUM MONITOR/ALARM OR EQUAL. ONE ALARM TO BE INSTALLED PER FAN/SSP SYSTEM (5 REQUIRED).
14. RCI RAIN CAP #RC-40-3 OR EQUAL (5-REQUIRED).

PLAN NOTES:

1. DIMENSIONS AND INSTALLATION LOCATIONS SHOWN ON FIGURE 1 ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.
2. CONTRACTOR SHALL GROUT AND/OR CAULK ALL MAJOR CRACKS AND OPENINGS IN FLOOR OR WALLS THAT WOULD IMPAIR SYSTEM PERFORMANCE.
3. A DRAIN CHECK VALVE (DRANJER® OR EQUIVALENT) TO BE INSTALLED AT EACH FLOOR DRAIN.
4. CONTRACTOR SHALL VERIFY ELECTRICAL TIE-IN LOCATION.
5. ALL WORK TO BE IN GENERAL CONFORMANCE WITH ESTABLISHED RADON MITIGATION STANDARDS AS ESTABLISHED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND THE ASTM STANDARD PRACTICE (E 2121-08) FOR INSTALLING RADON MITIGATION SYSTEMS IN EXISTING LOW-RISE RESIDENTIAL BUILDINGS.

COMMUNICATION TEST RESULTS

DESIGN

TEST POINT LOCATION	SUB-SLAB VACUUM READING (INCHES WATER)
CTSH#1-C	0.000
1-2	0.000
CTSH#2-A	-0.009
2-B	-0.003
2-E	-0.004
2-F	-0.010
CTSH#3-B	-0.006
3-C	-0.006
3-D	-0.006
3-E	-0.004
CTSH#4-D	-0.007
4-E	0.000
4-H	-0.002
CTSH#5-E	-0.005
5-F	-0.008
5-G	-0.002
CTSH#6-F	-0.008
6-G	-0.000
CTSH#7-I	-0.006
7-6	-0.007
CTSH#8-I	-0.016
8-J	-0.025
8-K	-0.007
CTSH#9-I	-0.008
9-J	-0.001
9-K	-0.007
9-L	-0.024
9-7	-0.010
CTSH#10-L	-0.002
10-6	-0.003
10-7	-0.022
10-9	-0.010
CTSH#2-F	-0.005
2-N	-0.005
2-11	0.000
CTSH#5-11	-0.002
CTSH#6-M	-0.008
CTSH#8-N	-0.008
CTSH#11-F	-0.005
11-G	-0.001
11-M	-0.001

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IN CHARGE OF GAA
DESIGNED BY SM CHECKED BY JMC
DRAWN BY SM

NOT TO SCALE

NO.	DATE	REVISION	INIT.
0	6/19/13	ISSUED FOR BUILDING PERMIT APPLICATION	

O'BRIEN & GERE

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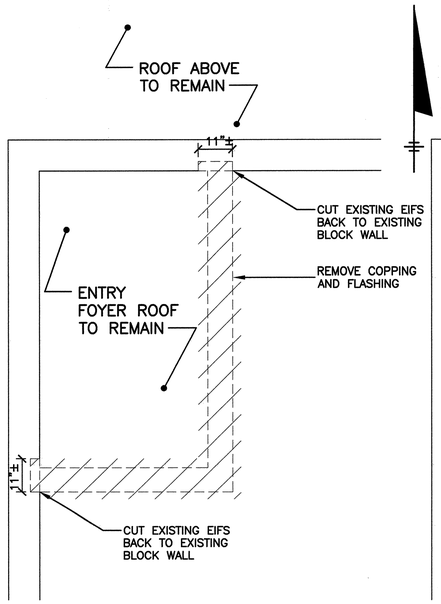
FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN
139 HOYT AVENUE
MAMARONECK, NEW YORK

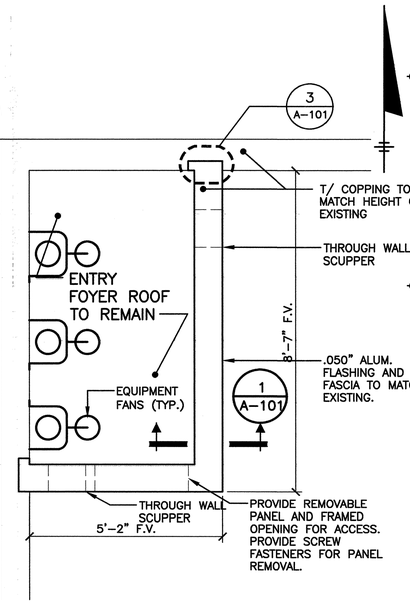
FILE NO. 3356.50027.002
DATE JUNE 2013

FIG. 2



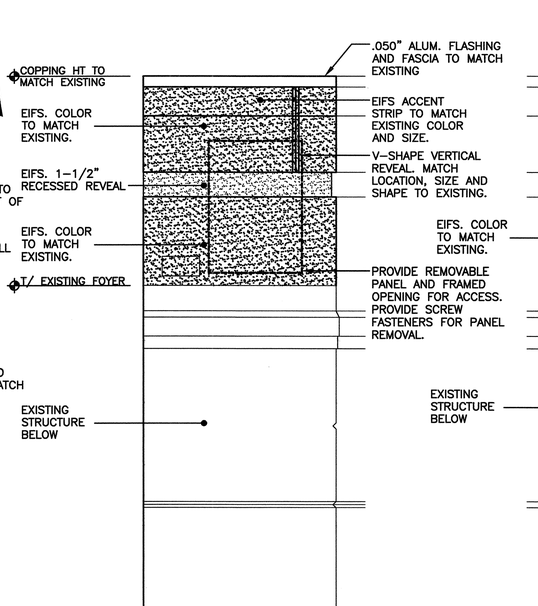
EAST SCREEN WALL DEMO PLAN

SCALE: 1/2" = 1'-0"



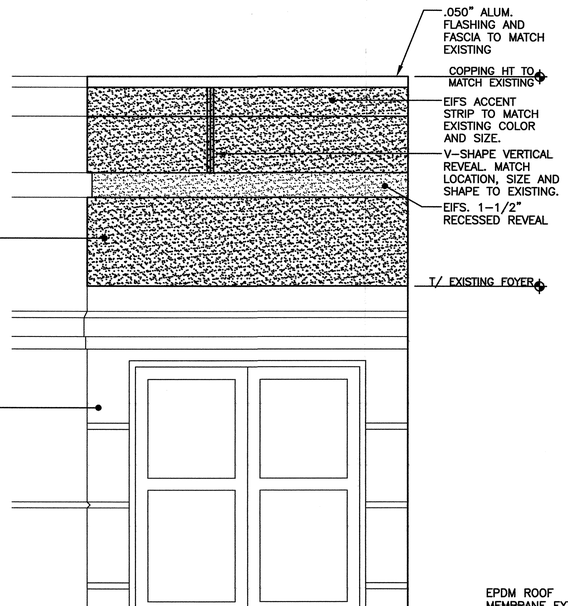
EAST SCREEN WALL PLAN

SCALE: 1/2" = 1'-0"



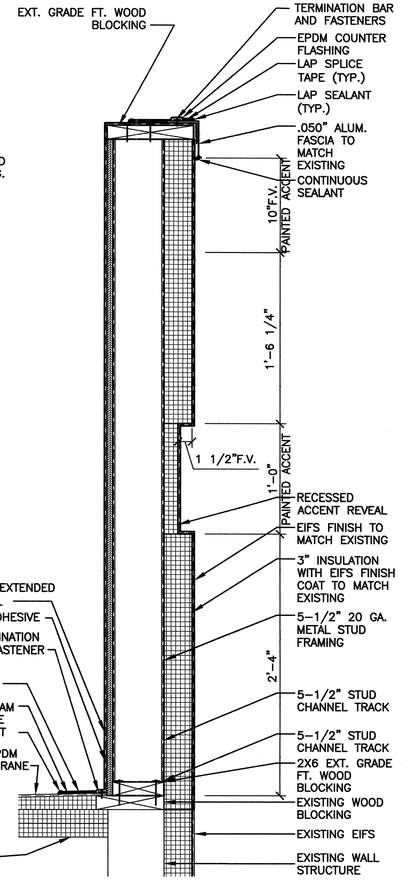
SOUTH ELEVATION

SCALE: 1/2" = 1'-0"



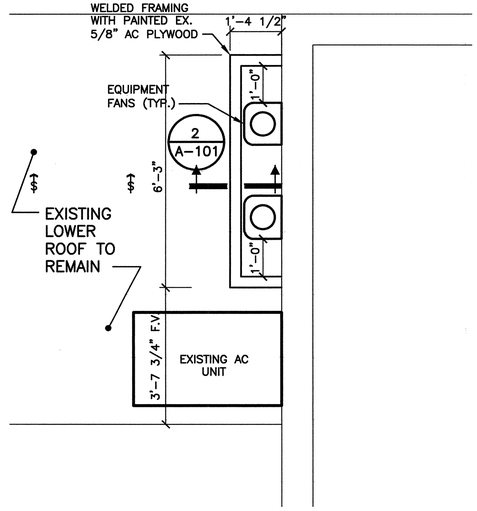
EAST ELEVATION

SCALE: 1/2" = 1'-0"



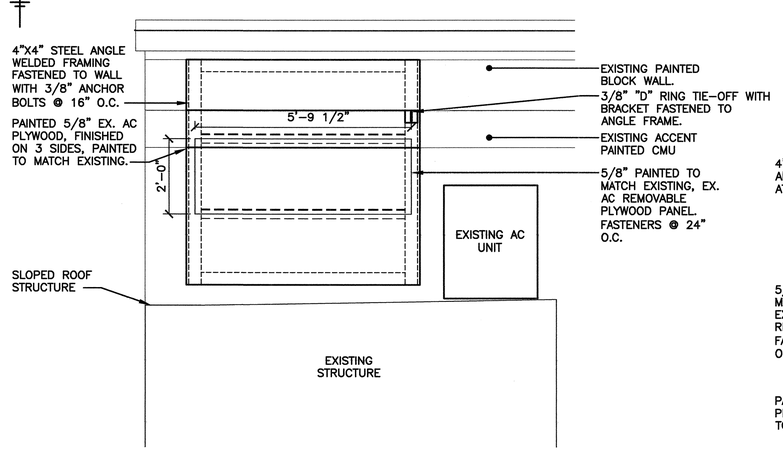
EAST SCREEN WALL SECTION (1 / A-101)

SCALE: 1-1/2" = 1'-0"



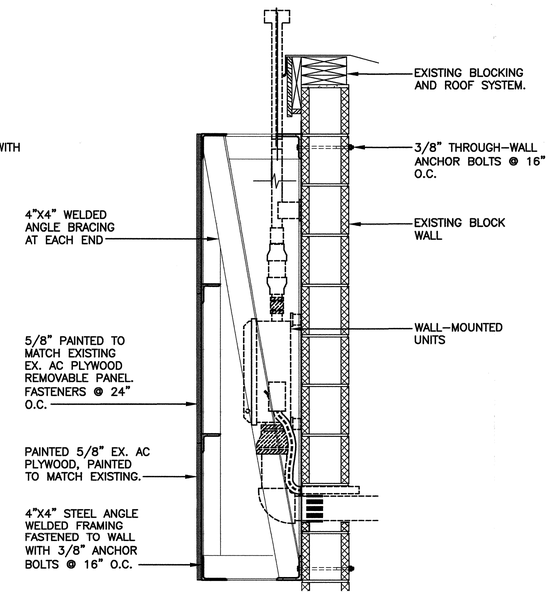
WEST SCREEN WALL PLAN

SCALE: 1/2" = 1'-0"



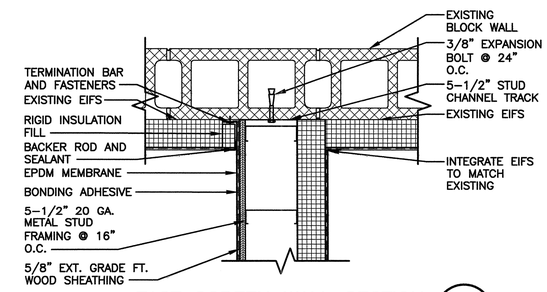
WEST ELEVATION

SCALE: 1/2" = 1'-0"



WEST SCREEN WALL SECTION (2 / A-101)

SCALE: 1" = 1'-0"



EAST SCREEN WALL SECTION (3 / A-101)

SCALE: 1-1/2" = 1'-0"

NOTES: TYPICAL @ ALL WALL TIE-IN LOCATIONS.

STATE OF NEW YORK — JAMES R. HEGHATHORNE — 56609 — LICENSED PROFESSIONAL ENGINEER

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PROPERTY OWNER APPROVAL: _____ DATE: _____

IN CHARGE OF GAA

DESIGNED BY NJD CHECKED BY NJD

DRAWN BY MJW

1/2"=1'-0" | 1"=1'-0" | 1 1/2"=1'-0"

NO.	DATE	REVISION	INIT.
0	06/19/13	ISSUED FOR BUILDING PERMIT APPLICATION	

O'BRIEN & GERE

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FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB-SLAB DEPRESSURIZATION SYSTEM
139 HOYT AVENUE
MAMARONECK, NEW YORK

FILE NO. 3356.50027.003

DATE JUNE 2013

A-101

Appendix B

Installation and Operation Commissioning Checklist

Installation and Operation Commissioning Checklist

Address: 139 Hoyt Avenue **Structure ID #:** 360027

Performed by: S.Mastripolito / G.Knapp **Date:** 12/17/2013

System Performance Data

Fan Inlet Static Pressure (vacuum)

Fan System	1	2	3	4	5
Fan Model	HS-5000	HS-5000	HS-5000	HS-5000	HS-5000
U-Tube Reading ("w.c.) *	-0.345	-0.209	-0.145	-0.340	-0.262

* Reading measured with micro-manometer

Is each fan mounted securely?	☑ Yes	☐ No	
Coupling connections secure?	☐ Yes	☐ No	
Is excessive noise heard when fan is running?	☐ Yes	☐ No	
Is set point indicated on speed controller?	☐ Yes	☐ No	☐ NA
Is the pipe and conduit penetration sealed to the structure's exterior?	☐ Yes	☐ No	
If fan vacuum is at maximum, measure velocity at each SSP (record below).			
Does the SSP velocity meet criteria (> 1 ft/min)?	☐ Yes	☐ No	☐ NA

Sub-Slab/Sub-Membrane SSP Static Pressure (vacuum)

SSP#	Static Pressure (" w.c.)	Fan System	Velocity at SSP (ft/min)
See Attached (page 5 of 5)			

Final Communication Test Results (Sub-Slab)

Communication test point	A	B	C		
Manometer reading (" w.c. vacuum)	-0.039	-0.057	-0.036		
Does smoke enter? (sub-slab ventilation systems only)	yes	yes	yes		

Communication test point	D	E	F		
Manometer reading (" w.c. vacuum)	-0.012	-0.013	-0.041		
Does smoke enter? (sub-slab ventilation systems only)	yes	yes	yes		

Were all fans in operation during final communication test?	☐ Yes	☐ No	
Were all valves locked after final communication test?	☐ Yes	☐ No	☐ NA
Was the pressure reading at each test point ≤ -0.004"w.c.?	☐ Yes	☐ No	☐ NA
Was maximum building depressurization simulated during test?	☐ Yes	☐ No	
Was there precipitation during the previous 24 hours?	☐ Yes	☐ No	**Snowing during IC/OC**
What was the apparent wind speed?	☐ Calm	☐ Light	☐ Strong

Installation and Operation Commissioning Checklist

Address: 139 Hoyt Avenue **Structure ID #:** 360027

Performed by: S.Mastripolito / G.Knapp **Date:** 12/17/2013

Accessible Crawlspace Performance Inspection (Sub-membrane Depressurization)

Was each membrane joint and perimeter smoke tested and found to be sealed? ☐ Yes ☐ No ☐ NA

Is the manometer reading ≥ 1/10" w.c. vacuum? ☐ Yes ☐ No ☐ NA

Inaccessible Crawlspace Data (Ventilation)

☐ NA

	Crawlspace 1	Crawlspace 2	Crawlspace 3	Crawlspace 4
SSP#				
Crawlspace volume (ft^3)				
Suction pipe diameter (in.)				
Target velocity (ft/min)				
Measured velocity (ft/min)				
Meets criteria (≥ 90%) - Y or N				

Backdraft Test Results

Not applicable - building heaters are roof mounted. No other combustion appliances present during IC/OC

Was commissioning backdraft test performed? ☐ Yes ☐ No

Was backdraft test conducted under maximum building depressurization? ☐ Yes ☐ No ☐ NA

On what combustion appliances was a backdraft test performed? * ☐ Hot Water Heater ☐ Dryer ☐ Fireplace (damper closed) ☐ Furnace / Boiler ☐ Fireplace (damper opened) ☐ Other_____ ☐ NA

Was any combustion appliance not operable and could not be tested? ☐ Yes ☐ No ☐ NA

If yes, which appliances: Not Applicable

Is there is a backdraft on any appliance? ☐ Yes ☐ No ☐ NA

(If yes, explain) ** Not Applicable

Was a previous backdraft condition present during any previous visit? ☐ Yes ☐ No ☐ NA

* Do not operate whole house fan during backdraft test.

** If backdraft exists, shut down SSD system. Backdraft will need to be corrected prior to re-energizing system.

** If backdraft exists, please notify the property owner. Owner was notified on: (date) N/A

Installation and Operation Commissioning Checklist

Address: 139 Hoyt Avenue **Structure ID #:** 360027

Performed by: S.Mastripolito / G.Knapp **Date:** 12/17/2013

Electrical System Installation Inspection

Are all electrical connections secure?	☑ Yes	☐ No	
Are all switches locked on?	☐ Yes	☐ No	☐ NA
Are audible alarm(s) present and working?	☐ Yes	☐ No	☐ NA
Is each junction box closed?	☐ Yes	☐ No	☐ NA
Is the conduit/wire properly supported?	☐ Yes	☐ No	☐ NA
Are appliances affected by fan operation?	☐ Yes	☐ No	

Pipe System Performance

Are all pipe runs properly supported (6'-horizontal/8'-vertical)?	☐ Yes	☐ No	
Were 10% of all pipe joints smoke tested?	☐ Yes	☐ No	
Did smoke enter?	☐ Yes	☐ No	
Are manometers installed at each suction point? [1]	☐ Yes	☐ No	☐ NA
Are system suction point seals accessible? [2]	☐ Yes	☐ No	
System suction points are sealed to the slab?	☐ Yes	☐ No	
Each component is installed?	☐ Yes	☐ No	
Excessive noise is heard in piping joints?	☐ Yes	☐ No	

Slab/Wall Repair Performance

Were drawing-identified slab and wall crack repairs/modifications smoke tested?	☐ Yes	☐ No	☐ NA
Did smoke enter?	☐ Yes	☐ No	☐ NA
Are there other visible cracks that did not draw smoke?	☐ Yes	☐ No	
Are there areas of the slab and/or walls that are not visible (e.g. finished areas)?	☐ Yes	☐ No	
Are there areas of the slab and/or walls that are not accessible (e.g. stored items)?	☐ Yes	☐ No	
Are utility penetrations sealed so they don't draw smoke?	☐ Yes	☐ No	☐ NA
Is top course of block wall open?	☐ Yes	☐ No	☐ NA
Did top course of block wall draw smoke after sealing?	☐ Yes	☐ No	☐ NA
Are sump cover(s) present and sealed properly?	☐ Yes	☐ No	☐ NA
Is sump cover structurally sound?	☐ Yes	☐ No	☐ NA
Check and clean Dranjer(s)?	☐ Yes	☐ No	☐ NA
Smoke Dranjer(s)?	☐ Yes	☐ No	☐ NA

Labeling Inspection

Correct labels applied in the proper locations?	☐ Yes	☐ No	**Building tenant refuses to allow placement of labels on SSDS piping**
Commisioned value written on SSP sticker?	☐ Yes	☐ No	
Is SSDS breaker identified in the electrical panel?	☐ Yes	☐ No	

Notes:

1. Manometers installed in fan system header
2. System suction points were all accessible during the 9/4/2013 installation commissioning and sealed properly
   As of 12/17/2013 operation commissioning, SSPs #4, 7, 12, and 13 are no longer accessible due to the tenant's final build-out of the space.

Installation and Operation Commissioning Checklist

Address:	139 Hoyt Avenue	**Structure ID #:**	360027
Performed by:	S.Mastripolito / G.Knapp	**Date:**	12/17/2013

System Exhaust

Are there vents to occupiable attic space?	☐ Yes	☐ No	
Are HVAC units installed in attic space?	☐ Yes	☐ No	**HVAC units are roof mounted**
Are there any roof mounted air intakes that supply air into the structure?	☐ Yes	☐ No	**Not able to identify roof mounted air intakes. System exhaust points are >10' from any roof mounted HVAC unit and roof penetration**
Is building equipped with a whole house fan(s)?	☐ Yes	☐ No	
Has Homeowner been informed to only operate the whole house fan(s) with all windows open?	☐ Yes	☐ No	☐ NA
Does the condensate line appear to be functioning correctly?	☐ Yes	☐ No	☐ NA
Are all fan exhaust stacks installed?	☐ Yes	☐ No	
At least **1 foot** above the eave of the roof?	☐ Yes	☐ No	Distance above eave: **18" (west) / 20" (east)**
At least **10 ft** above ground level?	☐ Yes	☐ No	
At least **10 ft** away from any windows, doors, chimneys, or other openings into conditioned or otherwise occupied spaces?	☐ Yes	☐ No	
If not 10 ft away, at least **2 ft** above windows, doors, chimneys, or other openings into conditioned or otherwise occupied spaces?	☐ Yes	☐ No	Distance from opening: **>10' above opening (both east & west fan systems)**
Is it sufficiently sealed where downspout meets PVC pipe?	☐ Yes	☐ No	☐ NA

Documentation

Were digital photographs taken of post-installation conditions?	☐ Yes	☐ No	
Was Homeowner provided "Operational Fact Sheet"?	☐ Yes	☐ No	Property owner not on site during system commissioning. Fact Sheet to be provided.
Was a field modification form completed to record installation changes?	☐ Yes	☐ No	☐ NA
Was the drawing updated to show installed components?	☐ Yes	☐ No	

Comments:

Manometers installed in fan system header

System suction points were all accessible during the 9/4/2013 installation commissioning and sealed properly

As of 12/17/2013 operation commissioning, SSPs #4, 7, 12, and 13 are no longer accessible due to the tenant's final build-out of the space.

HVAC units are roof mounted. No combustion appliances are located within the interior building space.

Installation and Operation Commissioning Checklist

Address:	139 Hoyt Avenue	**Structure ID #:**	360027
Performed by:	S.Mastripolito / G.Knapp	**Date:**	12/17/2013

Sub-Slab/Sub-Membrane SSP Static Pressure (vacuum)

SSP#	Static Pressure (" w.c.)	Fan System
1	-0.211	1
2	-0.170	1
3	-0.148	1
4	-0.073	2
5	-0.086	2
6	-0.092	2
7	-0.080	3
8	-0.145	3
9	-0.290	4
10	-0.142	4
11	-0.155	4
12	-0.173	5
13	-0.139	5
14	-0.145	5

Velocity at SSP (ft/min)
210
160
190
430
131
195
520
220
188
205
190
235
388
194

Fan System Static Pressure (vacuum)

Fan System	Static Pressure (" w.c.)	Velocity at Manifold (ft/min)
1	-0.345	700
2	-0.209	730
3	-0.145	566
4	-0.340	655
5	-0.262	640

* Measured at system manifold

Communication Test Point Locations

Communication Test Point	Distance from Nearest Wall	
	X	Y
A	80"	84"
B	120" *	155" **
C	36"	32"
D	73"	64"
E	6"	8"
F	155"	25"

* Distance to former block wall between former tenant spaces

** Distance to rear wall of building. As of 12/17/2013, CTP is approx. 12" in front of cooler.

Appendix C

Routine Maintenance Inspection Field Forms

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System Inspection Field Form

STRUCTURE INSPECTION

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

Have the following items changed since the last visit?

	Yes	No
Building Foot Print		
Basement/Slab Occupancy		
Heating / Ventilating Systems		
Basement Finish		
Crawlspaces		
Drains, Sumps, Floor Cracks		
Wall Penetrations, Cracks		
Appliances (in basement)		
Siding		
Are there any new buildings on the property or conversion of spaces in previously existing building to occupiable living areas? *If Yes, describe in comments section below.*		
Ownership		

If Yes, write new owner name contact information below

Date of Ownership Change _____

Owner Name _____

Telephone No. _____

If any of these items have changed, a redesign may be required. Contact the maintenance supervisor for field review.

Documentation

Were digital photographs taken of the entire system? ☐ Yes ☐ No

Was Homeowner provided "Operational Fact Sheet"? ☐ Yes ☐ No ☐ No - has already been provided

Was the drawing updated to show any changes? ☐ Yes ☐ No ☐ N/A

Was a Service Call filed for items that could not be addressed during this visit? ☐ Yes ☐ No ☐ N/A

Communication Check

Test point Identifier								
Micromanometer Reading (" w.c. vacuum)								

Comments

O'BRIEN & GERE

System Inspection Field Form

FAN AND ELECTRICAL

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

Equipment Documentation

Manometer Reading at Fan Inlet (" w.c. vacuum)

Prior commissioning: _____ Fan model: _____

As found: * _____

As left: * _____

Manometer Reading at Sub-Slab SSPs (" w.c. vacuum)

Note: For SSPs located in accessible crawlspaces with EPDM membrane, use the crawlspace field form to record the SSP manometer reading.

SSP #							
Manometer Reading (Prior Commissioned)							
Manometer Reading (As Found)							
Meet Criteria?**							
Manometer Reading (As Left)							

Fan System Inspection	**As Found**			**As Left**		
Is fan cover still present?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Each fan mounted securely?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Coupling connections secure?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Is excessive noise heard when fan is running?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Switch is locked in the ON position?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Is set point indicated on speed controller?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Has fan been in continuous operation since previous visit?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Is the pipe penetration sealed on the structure's exterior?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Is the downspout/PVC junction sufficiently sealed?	☐ **Yes**	☐ **No**	☐ NA	☐ **Yes**	☐ **No**	☐ UC
Is conduit penetration sealed on the structure's exterior?	☐ **Yes**	☐ **No**	☐ NA	☐ **Yes**	☐ **No**	☐ **UC**
Each fan runs when switch is ON position?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Each fan stops when switch is in OFF position?	☐ **Yes**	☐ **No**		☐ **Yes**	☐ **No**	☐ UC
Does the condensate line appear to be functioning correctly?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Is each fan below its maximum vacuum?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC

(HP220 = 2.5" w.c., GP501 = 4.25" w.c., FR-250 = 2.6" w.c., HS-5000 = 53" w.c.)

If fan vacuum is at maximum, measure velocity at each SSP (record below).

SSP #							
Velocity at SSP (As Found)							
Velocity at SSP (As Left)							

Does the SSP velocity meet criteria (> 1 ft/min)?	☐ **Yes**	☐ **No**	☐ NA	☐ **Yes**	☐ **No**	☐ UC

Electrical System Inspection

Are all electrical connections secure?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Each junction box closed?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Conduit/Wire properly supported?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Are audible alarm(s) present and working properly?	☐ **Yes**	☐ **No**	☐ NA	☐ **Yes**	☐ **No**	☐ UC
Are appliances affected by fan operation?	☐ **Yes**	☐ **No**		☐ **Yes**	☐ **No**	☐ UC

Labeling Inspection

Correct labels applied in proper location? ***	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Are labels still legible?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Is SSDS breaker identified in the electrical panel?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Commissioned value written on SSP sticker?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC

Comments/Corrective Action

_____

_____

* As Found conditions = before corrective action. [NA = Not Applicable]

* As Left conditions = after corrective action. [UC = Unchanged from As Found conditions]

** Criteria is met if deviation is less than or equal to 0.25"wc (for all fans with the exception of the HS-5000). For an HS-5000 fan, criteria is met if deviation is less than or equal to 10% of the prior commissioned value or less than or equal to 0.25"wc, whichever is greater.
If deviation exceeds criteria (0.25"wc or 10% of prior commissioned value, as applicable), conduct communication testing and document on Re-Commissioning Field Form.

*** Correct labels are at least one green label per floor and one white sticker at every suction point.

O'BRIEN & GERE

System Inspection Field Form

PIPING, SLAB AND WALL

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

	As Found			As Left		
Piping Check						
System suction point seals are accessible?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
System suction points are sealed to the slab?	☐ **Yes**	☐ **No**		☐ **Yes**	☐ **No**	☐ UC
Each component is installed?	☐ **Yes**	☐ **No**		☐ Yes	☐ No	☐ UC
Piping system is properly supported **(6'-horizontal/8'-vertical)**	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Excessive noise is heard in piping joints?	☐ **Yes**	☐ **No**		☐ **Yes**	☐ **No**	☐ UC
Smoke 10% of all pipe joints and/or piping modifications?	☐ **Yes**	☐ **No**		☐ **Yes**	☐ **No**	☐ UC
Did smoke enter joints? **	☐ **Yes**	☐ **No**		☐ **Yes**	☐ **No**	☐ UC
Floor Check						
Are areas of the slab not visible (e.g. floor covering)?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Are areas of the slab not accessible (e.g. stored items)?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Were drawing-identified slab crack repairs/modifications smoke tested?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Did smoke enter? **	☐ Yes	☐ No	☐ **NA**	☐ Yes	☐ No	☐ UC
Are other cracks present that did not draw smoke?	☐ **Yes**	☐ **No**	☐ **NA**	☐ **Yes**	☐ **No**	☐ UC
Are other cracks present that did draw smoke?**	☐ **Yes**	☐ **No**	☐ **NA**	☐ **Yes**	☐ **No**	☐ **UC**
Were newly identified slab cracks indicated on drawing?	☐ Yes	☐ No	☐ NA	☐ **Yes**	☐ **No**	☐ **UC**
Check and clean Dranjer(s)?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Smoke Dranjer(s)?	☐ Yes	☐ No	☐ **NA**	☐ Yes	☐ No	☐ UC
Wall Check						
Are areas of the walls not visible (e.g. finished walls)?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Are areas of the walls not accessible (e.g. stored items)?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Were drawing-identified wall crack repairs/modifications smoke tested?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Did smoke enter wall crack(s)? **	☐ Yes	☐ No	☐ **NA**	☐ Yes	☐ No	☐ UC
Are other wall cracks/penetrations present that did not draw smoke?	☐ **Yes**	☐ **No**	☐ **NA**	☐ **Yes**	☐ **No**	☐ UC
Are other wall cracks/penetrations present that did draw smoke?**	☐ **Yes**	☐ **No**	☐ **NA**	☐ **Yes**	☐ **No**	☐ **UC**
Were newly identified wall cracks indicated on drawing?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Is top course of block wall open?	☐ Yes	☐ No	☐ **NA**	☐ Yes	☐ No	☐ UC
Smoke top course of block wall (open-top block only)?	☐ Yes	☐ No	☐ **NA**	☐ **Yes**	☐ **No**	☐ UC
Did smoke enter top course? **	☐ Yes	☐ No	☐ **NA**	☐ Yes	☐ No	☐ UC
Are utility penetrations sealed so they don't draw smoke?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC
Sump Check						
Have any non-approved modifications been made to sump cover?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Is sump cover structurally sound?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Verify integrity of sump cover seal?	☐ **Yes**	☐ **No**	☐ **NA**	☐ **Yes**	☐ **No**	☐ UC
Does sealed sump cover draw smoke? **	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC

Exhaust Stack Check

Distance above eave	Commissioned distance: _____	Criteria: ≥ 1 ft
Distance from nearest opening	Commissioned distance: _____	Criteria: ≥ 10 ft
Distance above nearest opening	Commissioned distance: _____	Criteria: ≥ 2 ft

Are vertical exhaust stack supports installed every 8' maximum?	☐ Yes	☐ No	☐ NA	☐ Yes	☐ No	☐ UC
Distances from stack exhaust to openings appear to be unchanged?	☐ Yes	☐ No		☐ Yes	☐ No	☐ UC

*** If the existing exhaust stack is modified and/or removed and replaced as part of non-routine system maintenance, complete the "Stack Modification Field Form" and attach

Comments

_____

_____

_____

Notes:

* As Found conditions = before corrective action. [NA = Not Applicable]

* As Left conditions = after corrective action. [UC = Unchanged from As Found conditions]

**** If answered YES to this question, perform corrective action and re-test.**

O'BRIEN & GERE

Communication Testing Field Form

TEST DATA AND BACKDRAFT

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

Manometer Reading at Fan Inlet (" w.c. vacuum)

Prior commissioning: _____ Fan Model: _____

As found: _____

As left: _____

Manometer Reading at All SSPs (" w.c. vacuum)

SSP#						
Manometer Reading (Commissioned)						
Manometer Reading (As Found)						
Manometer Reading (As Left)						

Velocity at SSP (As Found)						
Target Velocity (fpm)						
Meets Crtiteria? **						
Velocity at SSP (As Left)						

Is each fan below its maximum vacuum? ☐ Yes ☐ No

(HP220 = 2.5" w.c., GP501 = 4.25" w.c., FR-250 = 2.6" w.c., HS-5000 = 53" w.c.)

If fan vacuum is at maximum, measure velocity at each SSP (record above).

Valves and Manometers are installed in proper location? ☐ Yes ☐ No ☐ NA

Communication Test

As Found*

Test point Identifier								
Micromanometer Reading(" w.c. vacuum)								
Does smoke enter?								

As Left*

Test point Identifier								
Micromanometer Reading(" w.c. vacuum)								
Does smoke enter?								

All fans in operation during final communication test? ☐ Yes ☐ No

Maximum Building Depressurization simulated? ☐ Yes ☐ No

All valves set prior to re-commissioning comm. test? ☐ **Yes** ☐ **No** ☐ N/A

Vacuum ≥ 0.004" w.c. observed at each test point? ☐ Yes ☐ No ☐ N/A

Was there precipitation during the previous 24 hours? ☐ Yes ☐ No

What was the apparent wind speed? ☐ Calm ☐ Light ☐ Strong

Each test point tested? ☐ **Yes** ☐ **No** ☐ N/A

Each test point sealed after testing? ☐ Yes ☐ No

* As Found conditions = before corrective action. [NA = Not Applicable]

* As Left conditions = after corrective action. [UC = Unchanged from As Found conditions]

** If fan vacuum is at maximum, SSP velocity criteria is met if velocity is >1 ft/min

** Inaccessible Crawlspace Criteria: Measured velocity ≥ 90% of Target Velocity (adjust if >110% of target velocity)

O'BRIEN & GERE

Communication Testing Field Form

TEST DATA AND BACKDRAFT

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

Backdraft Test

Was backdraft test performed?*	☐ Yes	☐ No
Windows closed?	☐ Yes	☐ No
Venting appliances on (e.g. bathroom fan)?	☐ Yes	☐ No
Doors closed?	☐ Yes	☐ No
Combustion sources on?	☐ Yes	☐ No

On what combustion appliances was a backdraft test performed?
☐ Hot Water Heater ☐ Dryer ☐ Fireplace (damper closed)
☐ Furnace / Boiler ☐ Fireplace (damper opened)
Other: _____

Was any combustion appliance not operable and could not be tested? ☐ Yes ☐ No
(If yes, explain) _____

Is there is a backdraft on any appliance? ☐ Yes ☐ No
(If yes, explain)** _____

_____

Was a previous backdraft condition present during any previous visit? ☐ Yes ☐ No ☐ NA

*Do not operate whole house fan during backdraft test.

** If backdraft exists, shut down SSD system. Backdraft will need to be corrected prior to re-energizing system.

** If backdraft exists, please notify the property owner. Owner was notified on: (date) _____

Red-line Drawing (Non-routine System Modifications)

Piping redlines complete?	☐ Yes	☐ No	☐ NA
Each switch and electrical tie in are identified?	☐ Yes	☐ No	☐ NA
Cracks/penetrations are identified?	☐ Yes	☐ No	☐ NA
As-built notes are complete?	☐ Yes	☐ No	☐ NA
New ventilation devices identified?	☐ Yes	☐ No	☐ NA
Was stack modified?**	☐ Yes	☐ No	☐ NA

**** Complete Stack Modification Field Form**

Comments

_____

_____

_____

_____

Appendix D

Re-Commissioning Field Forms

Re-Commissioning Field Form

TEST DATA AND BACKDRAFT

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

Manometer Reading at Fan Inlet (" w.c. vacuum)

Prior commissioning: _____ Fan Model: _____

As found: _____

As left: _____

Manometer Reading at All SSPs (" w.c. vacuum)

SSP#						
Manometer Reading (Commissioned)						
Manometer Reading (As Found)						
Manometer Reading (As Left)						

Velocity at SSP (As Found)						
Target Velocity (fpm)						
Meets Crtiteria? **						
Velocity at SSP (As Left)						

Is each fan below its maximum vacuum? ☐ Yes ☐ No

(HP220 = 2.5" w.c., GP501 = 4.25" w.c., FR-250 = 2.6" w.c., HS-5000 = 53" w.c.)

If fan vacuum is at maximum, measure velocity at each SSP (record above).

Valves and Manometers are installed in proper location? ☐ Yes ☐ No ☐ NA

Communication Test

As Found*

Test point Identifier								
Micromanometer Reading(" w.c. vacuum)								
Does smoke enter?								

As Left*

Test point Identifier								
Micromanometer Reading(" w.c. vacuum)								
Does smoke enter?								

All fans in operation during final communication test? ☐ Yes ☐ No

Maximum Building Depressurization simulated? ☐ Yes ☐ No

All valves set prior to re-commissioning comm. test? ☐ Yes ☐ No ☐ N/A

Vacuum ≥ 0.004" w.c. observed at each test point? ☐ Yes ☐ No ☐ N/A

Was there precipitation during the previous 24 hours? ☐ Yes ☐ No

What was the apparent wind speed? ☐ Calm ☐ Light ☐ Strong

Each test point tested? ☐ Yes ☐ No ☐ N/A

Each test point sealed after testing? ☐ Yes ☐ No

* As Found conditions = before corrective action. [NA = Not Applicable]

* As Left conditions = after corrective action. [UC = Unchanged from As Found conditions]

** If fan vacuum is at maximum, SSP velocity criteria is met if velocity is >1 ft/min

** Inaccessible Crawlspace Criteria: Measured velocity ≥ 90% of Target Velocity (adjust if >110% of target velocity)

Re-Commissioning Field Form

TEST DATA AND BACKDRAFT

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

Backdraft Test

Was backdraft test performed?*	☐ Yes	☐ No
Windows closed?	☐ Yes	☐ No
Venting appliances on (e.g. bathroom fan)?	☐ Yes	☐ No
Doors closed?	☐ Yes	☐ No
Combustion sources on?	☐ Yes	☐ No

On what combustion appliances was a backdraft test performed?
☐ Hot Water Heater ☐ Dryer ☐ Fireplace (damper closed)
☐ Furnace / Boiler ☐ Fireplace (damper opened)
Other: _____

Was any combustion appliance not operable and could not be tested? ☐ Yes ☐ No
(If yes, explain) _____

Is there is a backdraft on any appliance? ☐ Yes ☐ No
(If yes, explain)** _____

_____

Was a previous backdraft condition present during any previous visit? ☐ Yes ☐ No ☐ NA

*Do not operate whole house fan during backdraft test.

** If backdraft exists, shut down SSD system. Backdraft will need to be corrected prior to re-energizing system.

** If backdraft exists, please notify the property owner. Owner was notified on: (date) _____

Red-line Drawing (Non-routine System Modifications)

Piping redlines complete?	☐ Yes	☐ No	☐ NA
Each switch and electrical tie in are identified?	☐ Yes	☐ No	☐ NA
Cracks/penetrations are identified?	☐ Yes	☐ No	☐ NA
As-built notes are complete?	☐ Yes	☐ No	☐ NA
New ventilation devices identified?	☐ Yes	☐ No	☐ NA
Was stack modified?**	☐ Yes	☐ No	☐ NA

**** Complete Stack Modification Field Form**

Comments

_____

_____

_____

_____

O'BRIEN & GERE

Stack Modification Field Form

Routine or Non-Routine (circle one)

Address: _____ **Structure ID #:** _____

Performed by: _____ **Date:** _____

Post System Commissioning Stack Modifications

Distance above eave	Commissioned distance: _____	
Distance from nearest opening	Commissioned distance: _____	
Distance above nearest opening	Commissioned distance: _____	

	As Left			
At least **1 foot** above the eave of the roof?	☐ Yes	☐ No		Distance above eave: _____
At least **10 ft** above ground level?	☐ Yes	☐ No		
At least **10 ft** away from any windows, doors, chimneys, or other openings into conditioned or otherwise occupied spaces?	☐ Yes	☐ No		Distance from opening: _____
If not 10 ft away, at least **2 ft** above windows, doors, chimneys, or other openings into conditioned or otherwise occupied spaces?	☐ Yes	☐ No	☐ NA	Distance above opening: _____
Are HVAC units installed in attic space?	☐ Yes	☐ No		
Are there any roof mounted air intakes that supply air into the structure?	☐ Yes	☐ No		

Stack modifications identified on as-built/red-line drawings?	☐ Yes	☐ No
Stack elevation sketch completed (showing relevant building openings and appropriate distances)?	☐ Yes	☐ No

Comments

_____

_____

_____

_____

* As Found conditions = before corrective action.
* As Left conditions = after corrective action.

Appendix E

Example Routine Maintenance Inspection Letter

<<insert date>>

Michael Colarassi
Vice President, Property Management & Construction
Simone Development
1250 Waters Place, PH 1
Bronx, NY 10461

RE: Former Sealectro Site
NYSDEC Site No. 360027
Mamaroneck, NY

FILE: 3356/51413.007.001

Dear Mr. Colarossi,

This letter is sent to inform you that routine maintenance was completed on your sub-slab depressurization system (SSDS) at your property at 139 Hoyt Avenue in Mamaroneck, New York on _____.

The SSDS is operating properly and no further routine maintenance work is needed for 12 months. We will contact you at that time to schedule your next routine maintenance appointment.

Should you experience any difficulties with your SSDS before then, or if you have any questions, please call O'Brien & Gere at 732-638-2999.

Very truly yours,
O'Brien & Gere Engineers, Inc.

Gary A. Angyal
Vice President

cc: Scott Deyette – NYSDEC
Edward Moore – NYSDEC
Anthony Perretta & Charlotte Bethoney – NYSDOH
Fern Daves, Esq. – ITT
Jeff Stanek – ITT
Lisa Hall – ITT
Michael Peters – Stockli, Slevin & Peters, LLP
Robert Morgan – Balfour Beatty, Inc.
David Hodnett –Balfour Beatty, Inc.
Debra Rothberg – DL Rothberg & Associates
Robert Rosario – Simone Development
Guy Swenson - O'Brien & Gere

Appendix F

Operational Fact Sheet


1


3

4a

4b

5a

5b

Sub-Slab Depressurization System (SSDS)

Former Sealectro Site

Building Modification

The sub-slab depressurization system (SSDS) installed at your property is specifically designed in consideration of the building conditions and the heating, ventilating, and air conditioning (HVAC) systems present in the building at the time the design was developed. If you plan to make modifications to the buildings or the HVAC system, please call the contact number (back page) so a representative can evaluate whether the modifications you plan will affect the performance of the protective SSDS. Some of the types of modifications you may wish to contact us about would include the replacement of (or major modification to) the heating or cooling system, any building additions, or the installation of a whole house fan. This, of course, is not an exhaustive list and you should feel free to contact us on any modifications you make to your property that may affect the SSDS.

System Components

The SSDS installed in your building is designed to operate 24 hours a day, 7 days a week, all year round. The following typical SSDS components control operations or confirm that operations are normal:

1. *Fan* – Fan model installed is the RadonAway™ Model No.: HS-5000
2. *Switch* – This is a simple On/Off switch that is installed outside on the fan is "locked" in the On position with a plastic tie-wrap. *(Not Pictured)*
3. *Valves* – Balancing valves are installed at each suction point pipe and secured into specific positions to balance airflow and pressures beneath your building. These valves should not be adjusted by the owner or tenant.
4. *Magnehelic Gauge* – This gauge is mounted in a visible location at each fan system. The gauge is an indicator of operational status.
   a. If the needle reads above zero, the SSDS is operating.
   b. If the needle reads zero or below, the SSDS is not operating. Please contact us immediately.
5. *Mitigation System Alarm* – This alarm is mounted in a visible location at each fan system, in close proximity to the Magnehelic gauge. The alarm is a visual and audible indicator of operational status.
   a. If the alarm shows a green light, the SSDS is operating.
   b. If the alarm shows a red light and is audibly alarming, the SSDS is not operating. Please contact us immediately.

Self - Inspections

We ask that you conduct regular inspections of the SSDS to identify damage to the fan or pipe components, and to check the magnehelic gauge. If you find damage to any system component or if the magnehelic gauge or alarm indicates the SSDS is not operating, call the contact number listed below so a representative can come and inspect the system**.**

Support Services

Routine Maintenance – On an annual basis, ITT or O'Brien & Gere representatives will schedule a routine maintenance visit to assess SSDS performance. During this visit, SSDS performance and components will be inspected, and any issues will be corrected. Routine maintenance visits will usually take less than one hour, unless issues need to be corrected.

Non-Routine Maintenance – From time to time, non-routine maintenance and/or repairs may be necessary to ensure system effectiveness. If either the magnehelic gauge or system alarm indicate the SSDS is not operating, or if there has been any damage to a system component, please contact us immediately so that a service call can be scheduled.

On-Going Communication – ITT will maintain contact with you through an annual letter that will remind you how to routinely check for proper operation of the system and any updates to the routine maintenance schedule.

Contact

For maintenance service and general information,
please contact an ITT / O'Brien & Gere representative at 732-638-2999.

Appendix G

Example Non-Routine Maintenance Visit Letter

<<insert date>>

Michael Colarassi
Vice President, Property Management & Construction
Simone Development
1250 Waters Place, PH 1
Bronx, NY 10461

RE: Former Sealectro Site
NYSDEC Site No. 360027
Mamaroneck, NY

FILE: 3356/51413.007.001

Dear Mr. Colarossi,

This letter is sent to inform you that non-routine maintenance was completed on your sub-slab depressurization system (SSDS) at your property at 139 Hoyt Avenue in Mamaroneck, New York on _____.

[Explain what was done]. We left the system in good operating condition. We will inspect the SSDS again during your next routine maintenance visit.

Should you experience any additional difficulties with your SSDS, or if you have any questions, please call O'Brien & Gere at 732-638-2999.

Very truly yours,
O'Brien & Gere Engineers, Inc.

Gary A. Angyal
Vice President

cc: Scott Deyette – NYSDEC
Edward Moore – NYSDEC
Anthony Perretta & Charlotte Bethoney – NYSDOH
Fern Daves, Esq. – ITT
Jeff Stanek – ITT
Lisa Hall – ITT
Michael Peters – Stockli, Slevin & Peters, LLP
Robert Morgan – Balfour Beatty, Inc.
David Hodnett –Balfour Beatty, Inc.
Debra Rothberg – DL Rothberg & Associates
Robert Rosario – Simone Development
Guy Swenson - O'Brien & Gere

Appendix H

Example Annual Communications Letter

<<insert date>>

Michael Colarassi
Vice President, Property Management & Construction
Simone Development
1250 Waters Place, PH 1
Bronx, NY 10461

RE: Former Sealectro Site
NYSDEC Site No. 360027
Mamaroneck, NY

FILE: 3356/51413.007.001

Dear Mr. Colarossi,

This is an annual communication letter from O'Brien & Gere and ITT Corporation (ITT) to you as the owner of property at which a sub-slab depressurization system (SSDS) was installed. Should you have any questions about the topics discussed herein, please call O'Brien & Gere at 732-638-2999.

Operation and Maintenance

An annual routine inspection will be performed on the SSDS to ensure your system's proper ongoing operation. The inspection will occur during the first quarter of each calendar year (January through March). We will contact you to schedule the inspection at your convenience.

In addition to regular inspections of the SSDS, we have requested that you conduct routine self-inspections of the system to verify that no sudden or unexpected problems occur. The SSDS is intended to operate continuously. Please conduct self-inspections to check that the fan continues to operate. Upon installation, we provided you the attached operational fact sheet that provides instructions to perform self-inspections. If you believe at any time that your system is not operating properly, please call O'Brien & Gere at 732-638-2999 to schedule a maintenance visit..

Building Renovation or Construction

The SSDS installed at your property was designed for your building's specific construction at the time of installation. Should you plan any major renovations or structural changes to your property (including changes to your heating, ventilation and/or cooling system) please contact us so we can determine if modifications to your SSDS will be required to ensure proper ongoing system operation.

Thank you for your cooperation and understanding.

Should you experience any difficulties with the SSDS before then, or if you have any questions, please call O'Brien & Gere at 732-638-2999.

Very truly yours,
O'Brien & Gere Engineers, Inc.

Gary A. Angyal
Vice President

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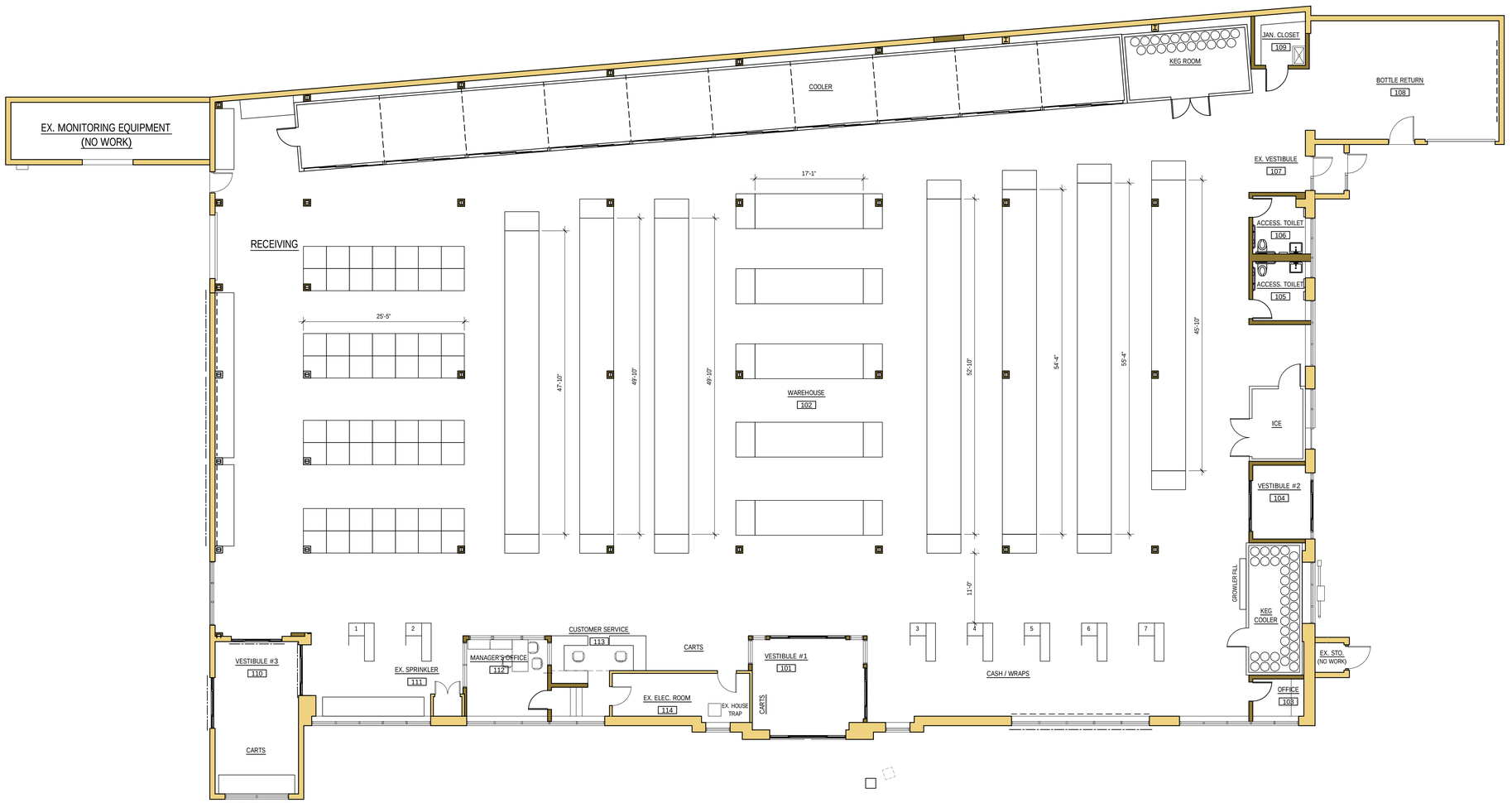
cc: Scott Deyette – NYSDEC
Edward Moore – NYSDEC
Anthony Perretta & Charlotte Bethoney – NYSDOH
Fern Daves, Esq. – ITT
Jeff Stanek – ITT
Lisa Hall – ITT
Michael Peters – Stockli, Slevin & Peters, LLP
Robert Morgan – Balfour Beatty, Inc.
David Hodnett –Balfour Beatty, Inc.
Debra Rothberg – DL Rothberg & Associates
Robert Rosario – Simone Development
Guy Swenson - O'Brien & Gere

Exhibit 1

Half-Time Beverage Fixture and Equipment Plan



1 FIXTURE AND EQUIPMENT PLAN
SCALE: 1/8" = 1'-0"

0' 4' 8' 16'

NORTH

Drawing Name and Location: X:\0-PROJECTS\1 Current\1310 - 139 Hoyt Avenue\2-Drawings\4-Record Sets\130802 Pricing and Permit\1310 F-1.dwg Plotted on Friday, 08/02/2013 - 3:25 PM

HALF TIME

BEVERAGE DISTRIBUTORSHIP

139 HOYT AVENUE
MAMARONECK, NY 10543

DeANGELIS ARCHITECTURAL SERVICES, LLC
451 EAST BOSTON POST ROAD
MAMARONECK, NY 10543
(914) 777-2727
WWW.DASLLC.COM

DATE	NO.	REVISION
08.02.13	-	ISSUED FOR PERMIT AND PRICING

FIXTURE AND EQUIPMENT PLAN

DATE:
SCALE: AS NOTED
DRAWN:
CHECKED:
JOB No. 1310-00

F-1

Exhibit 2

Building Permits

COMMERCIAL - ALTERATIONS/RENOVATIONS PERMIT

Village of Mamaroneck
169 Mt. Pleasant Ave
Mamaroneck, New York 10543
914-777-7731

Permit #: 13-0638

Permit Date: 8/5/2013

Parcel ID: 8-112-46B-55

Expiration Date: 8/8/2014

Owner: 139 HOYT ST ASSOCIATES/ETAL
Location: 139 HOYT AV
Applicant: Simone Development Co., L.L.C.
Work Description: COMMERCIAL - ALTERATIONS/RENOVATIONS
installation of sub-slab depressurization system to remove trace concentrations of organic vapors emanating from underlying contaminated ground water

Contacts:

O'Brien & Gere, Inc. of North America
333 West Washington Street
Syracuse, NY 13221-4873

Work: 315-956-6836

Lic. Number:

Required Inspections:

FINAL CO/CC
CONCRETE SLAB
FRAMING
UNDERGROUND PLUMBING

Fees:

BUILDING APPLICATION FEE	$50.00
BUILDING PERMIT FEE	$1,008.00
Total	$1,058.00

Tasks To Be Completed:

ELECTRICAL CERTIFICATE
PROFESSIONAL CERTIFICATION
FINAL COST AFFIDAVIT
ELEVATION CERTIFICATE

ALL PERMITS ARE REQUIRED TO HAVE EITHER A CERTIFICATE OF COMPLIANCE OR A CERTIFICATE OF OCCUPANCY. IF A CERTIFICATE OF OCCUPANCY IS REQUIRED, ONE MUST BE OBTAINED BEFORE THE BUILDING OR ANY PART MAY BE OCCUPIED.

NOTICE: All work shall be executed in strict compliance with the permit application, approved plans, the NYS Uniform Fire Prevention and Building Code, and all other laws, rules and regulations which apply. The building permit does not constitute authority to build in violation of any federal, state or local law or other rule or regulation.

William J Gerety

William Gerety - Building Department

Exhibit 3

Electrical Permit Certificate of Compliance

STATE WIDE INSPECTION SERVICES

Service With Integrity

State Wide Inspection Services
8 North Lawn Avenue
Elmsford, NY 10523
914-909-4471 Phone
914-219-1062 Fax
Email: office@swisny.com
Website: www.swisny.com

BY THIS CERTIFICATE OF COMPLIANCE STATE WIDE INSPECTION SERVICES CERTIFIES THAT:

Upon the application of:
Mesuda Electric, Inc.
2 Boxwood Close
Hopewell Junction, N.Y. 12533

Upon premises owned by:
Simone Devleop Co.
139 Hoyt Avenue
Mamaroneck, NY 10543

Located at: 139 Hoyt Avenue, Mamaroneck, NY 10543

Certificate Number: 2013-195

Electrical Permit Number: 13-0664

Section: 8 Block: 112 Lot: 46B BDC: 818

Building Permit Number: 13-0638

A visual inspection of the electrical system at this premise described as a Commercial occupancy, wherein the premises electrical system consisting of electrical devices and wiring, described below, located in/on the premises at: 139 Hoyt Avenue, Mamaroneck, NY 10543

The First Floor and Outside Roof was inspected in accordance with the NYS and NFPA 70-2008 and the detail of the installation, as set forth below, was founded to be in compliance there with on the 22nd day of August 2013.

Name	Quantity	Rating	Circuit	Type
Receptacles	01			
Switches	05			
Gas Fans	05	.25 hp		

Frank J Farina

Officer: Frank J. Farina

This certificate may not be altered in any way and is validated only by the presence of a raised seal at the location indicated. This certificate is valid for work performed before

Exhibit 4

Certificate of Compliance
Final Cost Affidavit
Professional Certification
Elevation Certificate

VILLAGE OF MAMARONECK

Village Hall
Mamaroneck, N.Y. 10543

OFFICE OF THE
BUILDING INSPECTOR

Address Reply to:
P.O. Box 369

Telephone
(914) 777-7731

CERTIFICATE OF COMPLIANCE

No. 13-0638 DATE: 7/8/2014

THIS CERTIFIES that the building located at 139 HOYT AV, Tax Map # 8-112-46B-55 of the Village of Mamaroneck, conforms substantially to the approved plans and specifications heretofore filed in this office, pursuant to which Building Permit No. 13-0638 dated 8/5/2013 was issued and conforms to all of the requirements of the Zoning Ordinance or Special Ruling by the Zoning Board of Appeals or Village Board of Trustees. The use for which this certificate is issued is:

installation of sub-slab depressurization system to remove trace concentrations of organic vapors emanating from underlying contaminated ground water

This certificate is issued to 139 HOYT ST ASSOCIATES/ETAL, owner of the aforesaid property.

(The Certificate of Compliance will be issued only after the Building Inspector is convinced of the completion of the construction in compliance with State Uniform Building & Fire Prevention Code and with other laws, ordinances, or regulations affecting the premises, and in conformity with the approved plans and specifications. A final electrical and plumbing certificate or other evidence of compliance will be required before the issuance of the Certificate of Compliance.)

Village of Mamaroneck
AFFIDAVIT OF FINAL COST

(TO BE SUBMITTED AFTER THE COMPLETION OF THE JOB)

DATE: _____

BUILDING PERMIT # 13-0638

SECTION: 1 BLOCK: 12 LOT: 46B,47,48,49,50,51, 52.53.54.55.56C

OWNER NAME AND ADDRESS: Owner of sub-slab depressurization system:

ITT Corporation, Inc.;1133 Westchester Avenue, White Plains, NY 10604

STATE OF NEW YORK }
COUNTY OF WESTCHESTER } SS:

I Teresa Olmsted, residing at 1054 N. Tustin Avenue

Anaheim, CA 92807 being duly sworn deposes and says:
I am the owner on record of the subject property, and responsible for the cost of the above building permit improvements and I hereby state that the total cost of improvements including all contractor and sub-contractor fee was $ 179,195.

Signature Teresa Olmsted

Sworn to before me this 16th day of April, 20 14

Notary _____

TARA SOLANKI
NOTARY PUBLIC-STATE OF NEW YORK
No. 01SO6258621
Qualified in Westchester County
My Commission Expires March 26, 2016

Upon final review, the Building Inspector and or his designee may require the proper documentation from the owner to furnish all contracts and invoices for the above improvements. This also allows the Village of Mamaroneck at any point in time to audit the above project.
Fees for the costs in excess of those stated on the Building Permit application will be paid upon submission of this form.

BELOW OFFICE USE ONLY

Estimated cost $_____ Amount Owed $_____

Received By_____

New 3/7/2012

Application #: 13-0638
Project: Sub-Slab Depressurization System
Project Address: 139 Hoyt Avenue

Calculation for Building and Demolition Permit Fee in support of Afidavit

Initial construction cost calculation

Building & Demolition Permit: $50.00 + $14.00 per $1,000 of the cost of construction

Labor:	$	49,500
Materials:	$	21,865
Total:	**$**	**71,365**
	$	**72,000**

$72,000 / $1,000 x $14 = $ 1,008.00
Initial Fee: $ 50.00
Initial Permit Fee: $ 1,058.00

Updated construction cost calculation

Base Contract Value	$	250,525
Change Order #1	$	10,690
Final Contract Value	$	261,215
Minus Eng'g, Oversight, and Administrative Costs	$	(82,020)
Revised Construction Costs	$	179,195

$179,195 / $1,000 x $15 = **$ 2,687.93**

Updated Permit Fee: $ 2,687.93
Initial Permit Fee: $ 1,058.00
Additional Permit Fee: $ 1,629.93

O'BRIEN & GERE

May 14, 2014

Mr. Robert Hughes
Assistant Building Inspector
Village of Mamaroneck
169 Mt. Pleasant Avenue
Mamaroneck, NY 10543

RE: 139 Hoyt Avenue
Vapor Intrusion Sub-Slab Depressurization System
Building Permit Number: 13-0638

FILE: 3356/51413.007.002

Dear Mr. Hughes:

This letter serves to certify that O'Brien & Gere Incorporated of North America, on behalf of ITT Corporation, installed the Sub-Slab Depressurization System (SSDS) at the 139 Hoyt Avenue building as designed. The design drawing package was submitted to NYSDEC via email on June 20, 2013. Approval was received from NYSDEC and NYSDOH in a letter dated July 2, 2013. Minor modifications to the initial design of the SSDS have been documented on the attached as-built drawings and do not materially affect the SSDS as designed.

The SSDS is currently operating as designed and within the parameters identified in the *On-Site Pre-Design Testing Results and Preliminary VI Mitigation Basis of Design* for the Former Sealectro Site (NYSDEC Site No. 360027) dated October 22, 2008. NYSDEC and NYSDOH approved the basis of design for the SSDS in a letter dated December 31, 2008.

If you have any questions or require any additional information please feel free to contact Stephen Mastripolito of O'Brien & Gere at 732-638-2946.

Very truly yours,
O'Brien & Gere Engineers, Inc.

Douglas M. Crawford, P.E.
Vice President

Enclosure: Figure 1 – As-Built Sub-Slab Depressurization System: Building Floor Plan
Figure 2 – As-Built Sub-Slab Depressurization System: Section and Details
A-101 – As-Built Sub-Slab Depressurization System: Architectural Details

cc: Lisa Hall - ITT
Teresa Olmsted / Jeffrey Stanek – ITT
Michael Peters – Stockli, Slevin, and Peters
Gary Angyal – O'Brien & Gere
James Cavotta – O'Brien & Gere
Robert Morgan – Balfour Beatty, Inc.
David Hodnett –Balfour Beatty, Inc.
Debra Rothberg – DL Rothberg & Associates

STATE OF NEW YORK — DOUGLAS M. CRAWFORD — 086649 — LICENSED PROFESSIONAL ENGINEER

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: _____

© IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT.

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NOTE: This document was developed in color. Reproductions ... may not represent the data as intended.

IN CHARGE OF: GAA
DESIGNED BY: SM CHECKED BY: JMC
DRAWN BY: SM/HC

1/8"=1'-0"

NO.	DATE	REVISION	INIT.
1		AS-BUILT	
0	6/19/13	ISSUED FOR BUILDING PERMIT APPLICATION	JRH

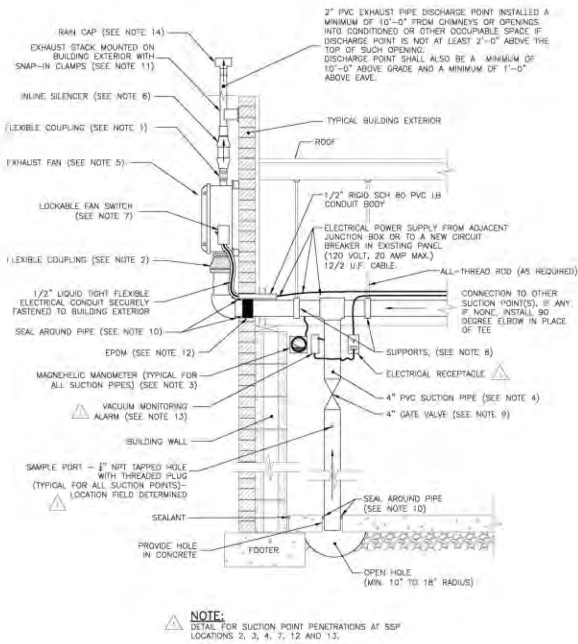
O'BRIEN & GERE

FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN
139 HOYT AVENUE
MAMARONECK, NEW YORK

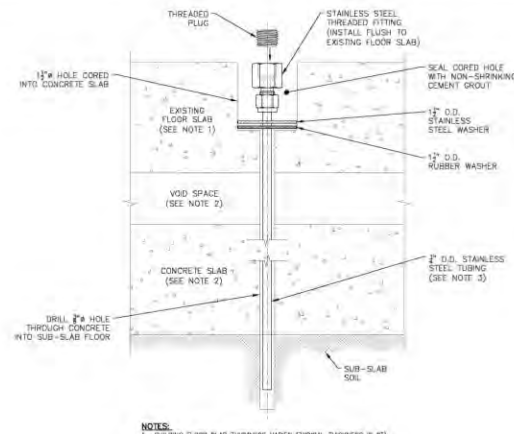
FILE NO: 3356.51413
DATE: MAY 2014

FIG. 1


RAIN CAP (SEE NOTE 14)
EXHAUST STACK MOUNTED ON BUILDING EXTERIOR WITH SNAP-IN CLAMPS (SEE NOTE 11)
INLINE SILENCER (SEE NOTE 6)
FLEXIBLE COUPLING (SEE NOTE 1)
EXHAUST FAN (SEE NOTE 5)
LOCKABLE FAN SWITCH (SEE NOTE 7)
FLEXIBLE COUPLING (SEE NOTE 2)
1/2" LIQUID TIGHT FLEXIBLE ELECTRICAL CONDUIT SECURELY FASTENED TO BUILDING EXTERIOR
SEAL AROUND PIPE (SEE NOTE 10)
EPDM (SEE NOTE 12)
MAGNEHELIC MANOMETER (TYPICAL FOR ALL SUCTION PIPES) (SEE NOTE 3)
VACUUM MONITORING ALARM (SEE NOTE 13)
BUILDING WALL
SAMPLE PORT - 1/4" NPT TAPPED HOLE WITH THREADED PLUG (TYPICAL FOR ALL SUCTION POINTS)- LOCATION FIELD DETERMINED
SEALANT
PROVIDE HOLE IN CONCRETE
FOOTER
2" PVC EXHAUST PIPE DISCHARGE POINT INSTALLED A MINIMUM OF 10'-0" FROM CHIMNEYS OR OPENINGS INTO CONDITIONED OR OTHER OCCUPIABLE SPACE IF DISCHARGE POINT IS NOT AT LEAST 2'-0" ABOVE THE TOP OF SUCH OPENING. DISCHARGE POINT SHALL ALSO BE A MINIMUM OF 10'-0" ABOVE GRADE AND A MINIMUM OF 1'-0" ABOVE EAVE.
TYPICAL BUILDING EXTERIOR
ROOF
1/2" RIGID SCH 80 PVC LB CONDUIT BODY
ELECTRICAL POWER SUPPLY FROM ADJACENT JUNCTION BOX OR TO A NEW CIRCUIT BREAKER IN EXISTING PANEL (120 VOLT, 20 AMP MAX.) 12/2 U.F. CABLE.
ALL-THREAD ROD (AS REQUIRED)
CONNECTION TO OTHER SUCTION POINT(S), IF ANY. IF NONE, INSTALL 90 DEGREE ELBOW IN PLACE OF TEE
SUPPORTS, (SEE NOTE 8)
ELECTRICAL RECEPTACLE
4" PVC SUCTION PIPE (SEE NOTE 4)
4" GATE VALVE (SEE NOTE 9)
SEAL AROUND PIPE (SEE NOTE 10)
OPEN HOLE (MIN. 10" TO 18" RADIUS)

NOTE:
DETAIL FOR SUCTION POINT PENETRATIONS AT SSP LOCATIONS 2, 3, 4, 7, 12 AND 13.

TYPICAL SUCTION POINT SECTION
NOT TO SCALE

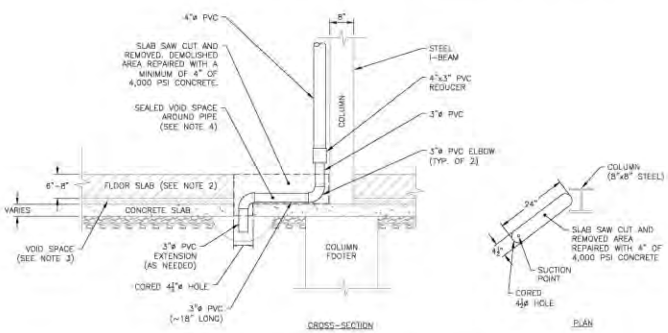

THREADED PLUG
STAINLESS STEEL THREADED FITTING (INSTALL FLUSH TO EXISTING FLOOR SLAB)
1 1/2"ø HOLE CORED INTO CONCRETE SLAB
SEAL CORED HOLE WITH NON-SHRINKING CEMENT GROUT
EXISTING FLOOR SLAB (SEE NOTE 1)
1 1/4" O.D. STAINLESS STEEL WASHER
1 1/4" O.D. RUBBER WASHER
VOID SPACE (SEE NOTE 2)
CONCRETE SLAB (SEE NOTE 2)
1/4" O.D. STAINLESS STEEL TUBING (SEE NOTE 3)
DRILL 3/8"ø HOLE THROUGH CONCRETE INTO SUB-SLAB FLOOR
SUB-SLAB SOIL

NOTES:
1. BUILDING FLOOR SLAB THICKNESS VARIES (TYPICAL THICKNESS IS 8").
2. THICKNESS OF VOID SPACE AND LOWER CONCRETE FLOOR SLAB VARIES BY LOCATION.
3. STAINLESS STEEL TUBING EXTENDS APPROXIMATELY 1" BELOW BOTTOM OF LOWER CONCRETE FLOOR SLAB.

PERMANENT COMMUNICATION TEST POINT DETAIL
NOT TO SCALE

SECTION NOTES:

1. RCI #B-156-22 FLEXIBLE PVC COUPLING WITH STAINLESS STEEL CLAMPS OR EQUAL. (2.0"x2.0", 5-REQUIRED).
2. RCI #B-156-43 FLEXIBLE PVC COUPLING WITH STAINLESS STEEL CLAMPS OR EQUAL. (4.0"x3.0", 5-REQUIRED).
3. RADONAWAY #50001-2 MAGNAHELIC MANOMETER 0-50" WC OR EQUAL, INSTALL IN HEADER PIPE BETWEEN FAN AND FIRST SUCTION POINT. (5-REQUIRED)
4. PVC PIPE IS DUAL RATED DWV/SCH. 40 WITH DWV FITTINGS. ALL PIPING SHALL BE INSTALLED WITH CLEAR LOW VOLATILE ORGANIC COMPOUND (VOC) GLUE AND PRIMER (IPS OR HERCULES).
5. RADONAWAY HS-5000 FAN OR EQUAL. FAN IS DIRECT WIRED FROM A DEDICATED 115-120 VAC-20 AMP MAX. SUPPLY. THE FAN DRAWS A MAXIMUM OF 320 WATTS. TEST LOAD CIRCUIT PRIOR TO INSTALLATION OF FAN. FAN TO BE MOUNTED WITHIN FAN ENCLOSURES AS SHOWN ON FIGURE 1 AND FIGURE A-101. (5-REQUIRED)
6. RADONAWAY #24002 2" ø INLINE MUFFLER OR EQUAL. (5-REQUIRED)
7. PROVIDE MOTOR RATED WEATHER PROOF SWITCH, RADONAWAY #20003 OPTIONAL ELECTRICAL BOX OR EQUAL, WITH DISCONNECT SWITCH BOX AND LOCKABLE COVERPLATE. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC AND LOCAL CODES. (5-REQUIRED)
8. CONTRACTOR SHALL SECURE EQUIPMENT AND PIPING TO MINIMIZE ANY MOVEMENT. HORIZONTAL PIPE RUNS SHALL BE SUPPORTED AS NECESSARY WITH "J" HOOKS (RCI #HT-4), STRAPS, PIPE CLAMPS, OR EQUAL AND SHALL BE SLOPED TOWARD THE SUCTION HOLE IN FLOOR. SUPPORTS TO BE CONNECTED TO CEILING WITH ALL-THREAD ROD, AS REQUIRED. VERTICAL PIPE RUNS SHALL BE SUPPORTED EVERY 8 FEET (MAXIMUM) OR AS REQUIRED.
9. VALTERRA BLADEX VALVE #6401 OR EQUAL. TO BE INSTALLED WHEN MORE THAN ONE SUCTION HOLE PIPE IS INSTALLED. (13-REQUIRED)
10. GEOCEL 3300 POLYURETHANE SEALANT OR EQUAL AROUND PIPE OPENING.
11. RADONAWAY #67032-3 CLIC-SYSTEM CLAMPS OR EQUAL MOUNTED TO THE EXTERIOR WALL EVERY 8' (MAXIMUM) OR AS REQUIRED.
12. WRAP PIPE WITH EPDM, BACKER ROD, OR EQUIVALENT WHERE PIPE PENETRATES THE BUILDING TO REDUCE VIBRATION. SEAL PENETRATION WITH GEOCEL 3300 POLYURETHANE SEALANT, EXPANDING FOAM, OR EQUAL.
13. RCI #WVM-93C VACUUM MONITOR/ALARM OR EQUAL. ONE ALARM TO BE INSTALLED PER FAN/SSP SYSTEM (5 REQUIRED).
14. RCI RAIN CAP #RC-40-3 OR EQUAL (5-REQUIRED)


4"ø PVC
SLAB SAW CUT AND REMOVED. DEMOLISHED AREA REPAIRED WITH A MINIMUM OF 4" OF 4,000 PSI CONCRETE.
SEALED VOID SPACE AROUND PIPE (SEE NOTE 4)
6"-8"
FLOOR SLAB (SEE NOTE 2)
VARIES
CONCRETE SLAB
VOID SPACE (SEE NOTE 3)
3"ø PVC EXTENSION (AS NEEDED)
CORED 4 1/2"ø HOLE
3"ø PVC (~18" LONG)
8"
COLUMN
STEEL I-BEAM
4"x3" PVC REDUCER
3"ø PVC
3"ø PVC ELBOW (TYP. OF 2)
COLUMN FOOTER
CROSS-SECTION
COLUMN (8"x8" STEEL)
24"
SLAB SAW CUT AND REMOVED AREA REPAIRED WITH 4" OF 4,000 PSI CONCRETE
SUCTION POINT
CORED 4 1/2ø HOLE
PLAN

NOTES:
1. DETAIL FOR SUCTION POINT PENETRATIONS AT SSP LOCATIONS 1, 5, 6, 9, 10, 11, AND 14.
2. BUILDING FLOOR SLAB THICKNESS VARIES (TYPICAL THICKNESS IS 8").
3. VOID SPACE BETWEEN BUILDING FLOOR SLAB AND LOWER FLOOR SLAB IDENTIFIED AT ALL SSP LOCATIONS (THICKNESS OF VOID SPACE VARIES BY LOCATION).
4. VOID SPACE SEALED AT SUCTION POINT WITH EXPANDING POLYURETHANE FOAM.

TYPICAL SUCTION POINT WITH RECESSED PIPING DETAIL
NOT TO SCALE

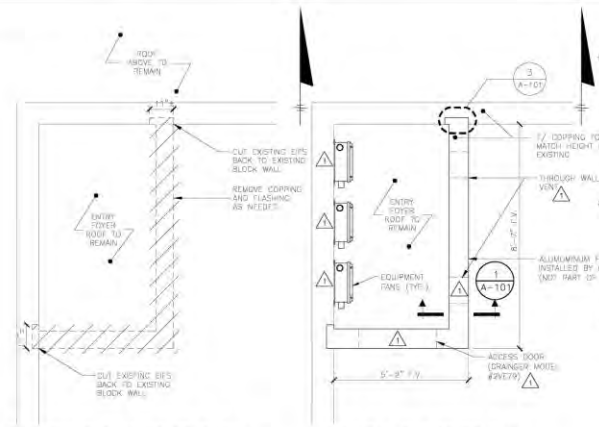
PLAN NOTES:

1. DIMENSIONS AND INSTALLATION LOCATIONS SHOWN ON FIGURE 1 ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY CONTRACTOR.
2. CONTRACTOR SHALL GROUT AND/OR CAULK ALL MAJOR CRACKS AND OPENINGS IN FLOOR OR WALLS THAT WOULD IMPAIR SYSTEM PERFORMANCE.
3. ALL FLOOR DRAINS REMOVED BY OWNER. SEALED WITH CONCRETE.
4. CONTRACTOR SHALL VERIFY ELECTRICAL TIE-IN LOCATION.
5. ALL WORK TO BE IN GENERAL CONFORMANCE WITH ESTABLISHED RADON MITIGATION STANDARDS AS ESTABLISHED BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY AND THE ASTM STANDARD PRACTICE (E 2121-08) FOR INSTALLING RADON MITIGATION SYSTEMS IN EXISTING LOW-RISE RESIDENTIAL BUILDINGS.
6. PERMANENT COMMUNICATION TEST POINTS INSTALLED AT CTP LOCATIONS A, B, C, D, E, AND F AS SHOWN ON FIGURE 1.
7. EXPANSION JOINTS WERE SEALED BY OWNER AS PART OF NEW FLOOR SYSTEM.

RECORD DRAWINGS
To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.
O'BRIEN & GERE ENGINEERS, INC.
By: ____________

IN CHARGE OF: GRA DESIGNED BY: RH CHECKED BY: JMB DRAWN BY: SM/HC	NOT TO SCALE	AS-BUILT 0 6/19/13 ISSUED FOR BUILDING PERMIT APPLICATION JRH NO. DATE REVISION INIT	O'BRIEN & GERE	FORMER SEALECTRO SITE MAMARONECK, NEW YORK SITE NO. 360027	SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN 139 HOYT AVENUE MAMARONECK, NEW YORK

FILE NO. 3356.51413
DATE MAY 2013
FIG. 2



EAST FAN ENCLOSURE DEMO PLAN

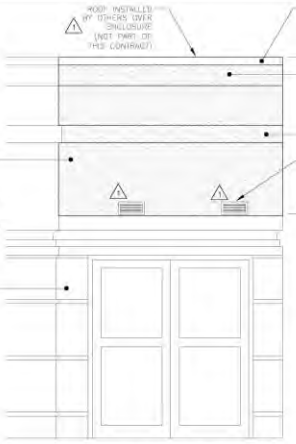
SCALE: 1/2" = 1'-0"

EAST FAN ENCLOSURE PLAN

SCALE: 1/2" = 1'-0"

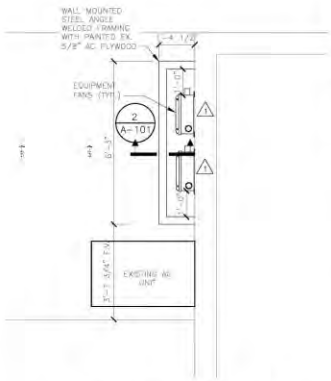
EAST FAN ENCLOSURE SOUTH ELEVATION

SCALE: 1/2" = 1'-0"



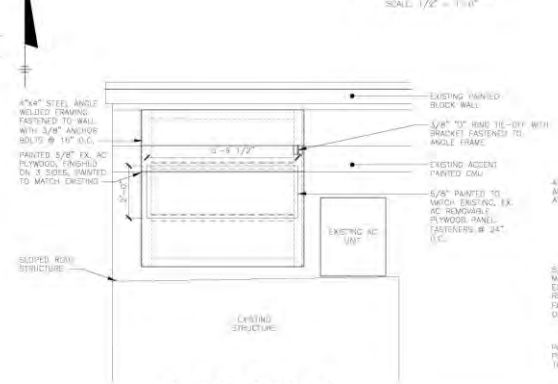
EAST FAN ENCLOSURE EAST ELEVATION

SCALE: 1/2" = 1'-0"



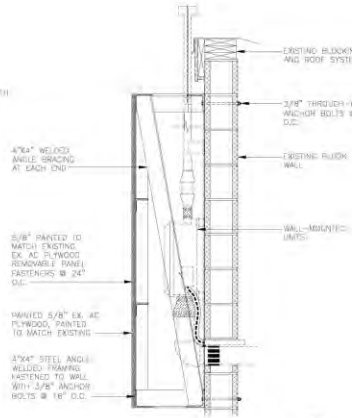
WEST FAN ENCLOSURE PLAN

SCALE: 1/8" = 1'-0"



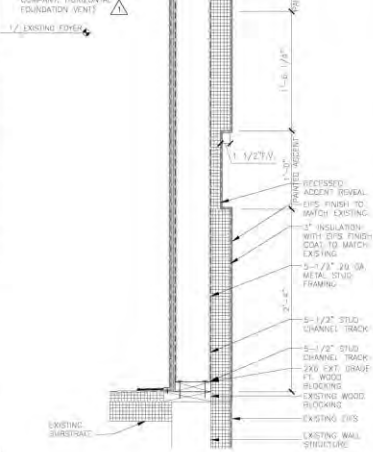
WEST FAN ENCLOSURE WEST ELEVATION

SCALE:



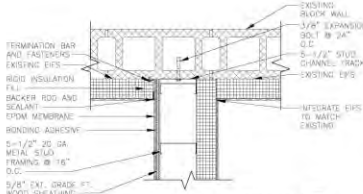
WEST FAN ENCLOSURE SECTION 2 A-101

SCALE: 1" = 1'-0"



EAST FAN ENCLOSURE SECTION 1 A-101

SCALE: 1-1/2" = 1'-0"



EAST FAN ENCLOSURE SECTION 3 A-101

SCALE: 1-1/2" = 1'-0"

NOTED TYPICAL @ ALL WALL TIE-IN LOCATIONS

RECORD DRAWINGS

To the best of our knowledge, information and belief, these record drawings substantially represent the project as constructed.

O'BRIEN & GERE ENGINEERS, INC.

By: _____

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IN CHARGE OF: DAA
DESIGNED BY: NJS CHECKED BY: NJS
DRAWN BY: MJW/HC

1/2"=1'-0" 1"=1'-0" 1 1/2"=1'-0"

NO.	DATE	REVISION	BY
1		AS-BUILT	
0	6/19/14	ISSUED FOR BUILDING PERMIT APPLICATION	JRH

O'BRIEN & GERE

FORMER SEALECTRO SITE
MAMARONECK, NEW YORK
SITE NO. 360027

SUB-SLAB DEPRESSURIZATION SYSTEM DESIGN
139 HOYT AVENUE
MAMARONECK, NEW YORK

FILE NO. 3356.51413
DATE MAY 2014

A-101

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
National Flood Insurance Program

ELEVATION CERTIFICATE

IMPORTANT: Follow the instructions on pages 1–9.

OMB No. 1660-0008
Expiration Date: July 31, 2015

SECTION A – PROPERTY INFORMATION

FOR INSURANCE COMPANY USE

Policy Number:

Company NAIC Number:

A1. Building Owner's Name: Hoyt Street Realty Corp

A2. Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No.: 139 Hoyt Avenue
City: Village of Mamaroneck State: NY ZIP Code: 10543

A3. Property Description (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.): Tax Parcel Number Section 8, Block 23, Lot 9.2

A4. Building Use (e.g., Residential, Non-Residential, Addition, Accessory, etc.): Non-Residential

A5. Latitude/Longitude: Lat. N 40 - 57 - 07.79 Long. W 073 - 44 - 20.49 Horizontal Datum: ☐ NAD 1927 ☒ NAD 1983

A6. Attach at least 2 photographs of the building if the Certificate is being used to obtain flood insurance.

A7. Building Diagram Number: 1A

A8. For a building with a crawlspace or enclosure(s):
- a) Square footage of crawlspace or enclosure(s): _____ sq ft
- b) Number of permanent flood openings in the crawlspace or enclosure(s) within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A8.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

A9. For a building with an attached garage:
- a) Square footage of attached garage: _____ sq ft
- b) Number of permanent flood openings in the attached garage within 1.0 foot above adjacent grade: _____
- c) Total net area of flood openings in A9.b: _____ sq in
- d) Engineered flood openings? ☐ Yes ☐ No

SECTION B – FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP Community Name & Community Number	B2. County Name	B3. State
Village of Mamaroneck 360916	Westchester	New York

B4. Map/Panel Number	B5. Suffix	B6. FIRM Index Date	B7. FIRM Panel Effective/ Revised Date	B8. Flood Zone(s)	B9. Base Flood Elevation(s) (Zone AO, use base flood depth)
36119C/0353	F	09/28/2007	09/28/2007	AE	26

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in Item B9:
☐ FIS Profile ☒ FIRM ☐ Community Determined ☐ Other/Source: _____

B11. Indicate elevation datum used for BFE in Item B9: ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☐ No
Designation Date: ____ / ____ / ____ ☐ CBRS ☐ OPA

SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☒ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.

C2. Elevations – Zones A1–A30, AE, AH, A (with BFE), VE, V1–V30, V (with BFE), AR, AR/A, AR/AE, AR/A1–A30, AR/AH, AR/AO. Complete Items C2.a–h below according to the building diagram specified in Item A7. In Puerto Rico only, enter meters.

Benchmark Utilized: Tidal 2 Sta l46 - PID KU1738 Vertical Datum: NAVD 1988

Indicate elevation datum used for the elevations in items a) through h) below. ☐ NGVD 1929 ☒ NAVD 1988 ☐ Other/Source: _____
Datum used for building elevations must be the same as that used for the BFE.

		Check the measurement used.	
a) Top of bottom floor (including basement, crawlspace, or enclosure floor)	22 . 9	☒ feet	☐ meters
b) Top of the next higher floor	_____ . _____	☐ feet	☐ meters
c) Bottom of the lowest horizontal structural member (V Zones only)	_____ . _____	☐ feet	☐ meters
d) Attached garage (top of slab)	_____ . _____	☐ feet	☐ meters
e) Lowest elevation of machinery or equipment servicing the building (Describe type of equipment and location in Comments)	SEE ATTACHMENT	☐ feet	☐ meters
f) Lowest adjacent (finished) grade next to building (LAG)	19 . 2	☒ feet	☐ meters
g) Highest adjacent (finished) grade next to building (HAG)	22 . 0	☒ feet	☐ meters
h) Lowest adjacent grade at lowest elevation of deck or stairs, including structural support	_____ . _____	☐ feet	☐ meters

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information. *I certify that the information on this Certificate represents my best efforts to interpret the data available. I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.*

☐ Check here if comments are provided on back of form.
☒ Check here if attachments.

Were latitude and longitude in Section A provided by a licensed land surveyor? ☒ Yes ☐ No

Certifier's Name	License Number		
Nicholas G Chapis	49330		
Title	Company Name		
Sr. Prinicipal Land Surveyor	Insite Engineering		
Address	City	State	ZIP Code
3 Garrett Place	Carmel	NY	10512
Signature	Date	Telephone	
	05/01/2014	(845) 225-9690	

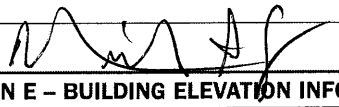
NEW YORK STATE NICHOLAS G. CHAPIS PE 049330 LICENSED LAND SURVEYOR

IMPORTANT: In these spaces, copy the corresponding information from Section A.			FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 139 Hoyt Avenue			Policy Number:
City Village of Mamaroneck	State NY	ZIP Code 10543	Company NAIC Number:

SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

Copy both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

Comments See attachment for elevations of pertinent features.

Signature  Date 05/01/2014

SECTION E – BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zones AO and A (without BFE), complete Items E1–E5. If the Certificate is intended to support a LOMA or LOMR-F request, complete Sections A, B,and C. For Items E1–E4, use natural grade, if available. Check the measurement used. In Puerto Rico only, enter meters.

E1. Provide elevation information for the following and check the appropriate boxes to show whether the elevation is above or below the highest adjacent grade (HAG) and the lowest adjacent grade (LAG).

a) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

b) Top of bottom floor (including basement, crawlspace, or enclosure) is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the LAG.

E2. For Building Diagrams 6–9 with permanent flood openings provided in Section A Items 8 and/or 9 (see pages 8–9 of Instructions), the next higher floor (elevation C2.b in the diagrams) of the building is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E3. Attached garage (top of slab) is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E4. Top of platform of machinery and/or equipment servicing the building is _____ . _____ ☐ feet ☐ meters ☐ above or ☐ below the HAG.

E5. Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

SECTION F – PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here. The statements in Sections A, B, and E are correct to the best of my knowledge.

Property Owner or Owner's Authorized Representative's Name

Address | City | State | ZIP Code

Signature | Date | Telephone

Comments

☐ Check here if attachments.

SECTION G – COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below. Check the measurement used in Items G8–G10. In Puerto Rico only, enter meters.

G1. ☐ The information in Section C was taken from other documentation that has been signed and sealed by a licensed surveyor, engineer, or architect who is authorized by law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2. ☐ A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3. ☐ The following information (Items G4–G10) is provided for community floodplain management purposes.

G4. Permit Number	G5. Date Permit Issued	G6. Date Certificate Of Compliance/Occupancy Issued

G7. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building: _____ . _____ ☐ feet ☐ meters Datum _____

G9. BFE or (in Zone AO) depth of flooding at the building site: _____ . _____ ☐ feet ☐ meters Datum _____

G10. Community's design flood elevation: _____ . _____ ☐ feet ☐ meters Datum _____

Local Official's Name | Title

Community Name | Telephone

Signature | Date

Comments

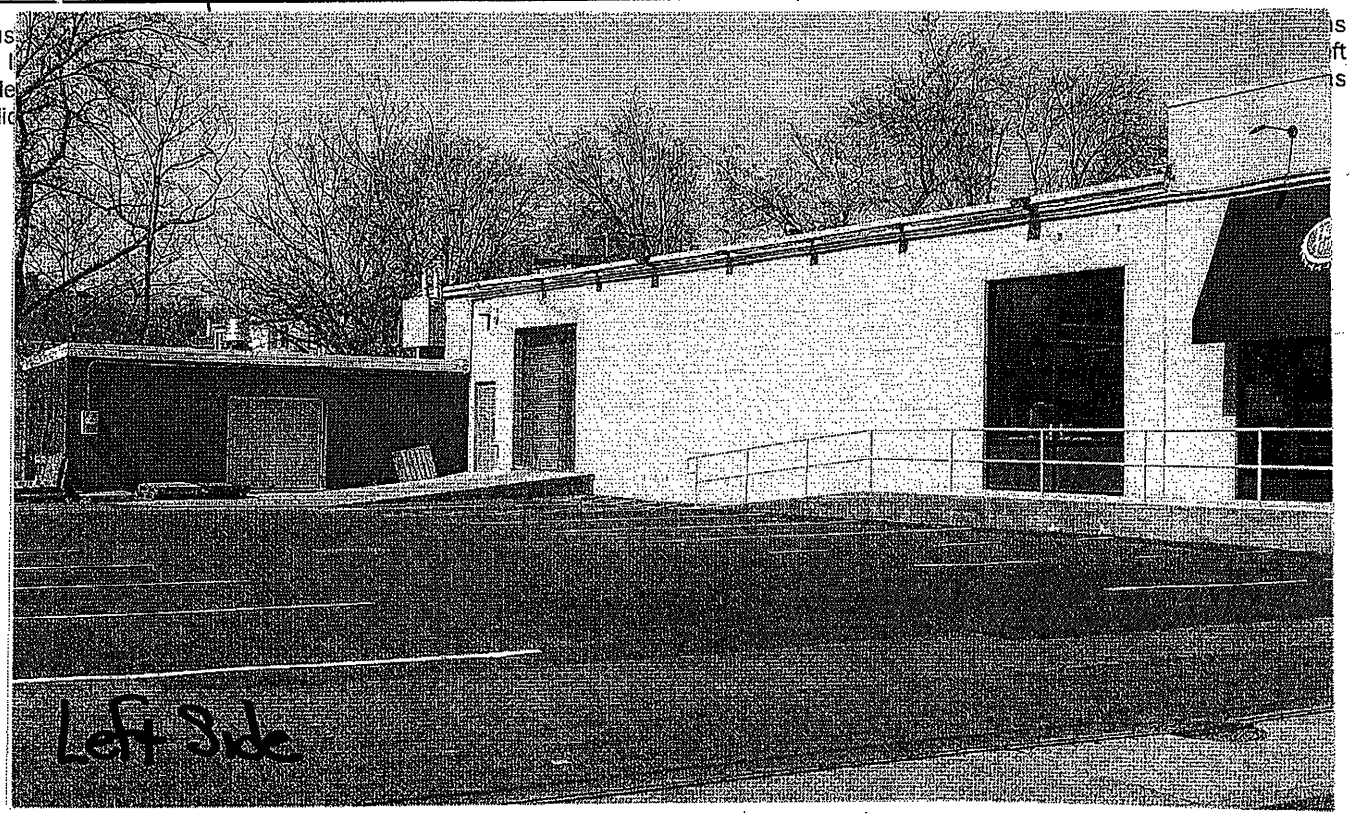
☐ Check here if attachments.

BUILDING PHOTOGRAPHS

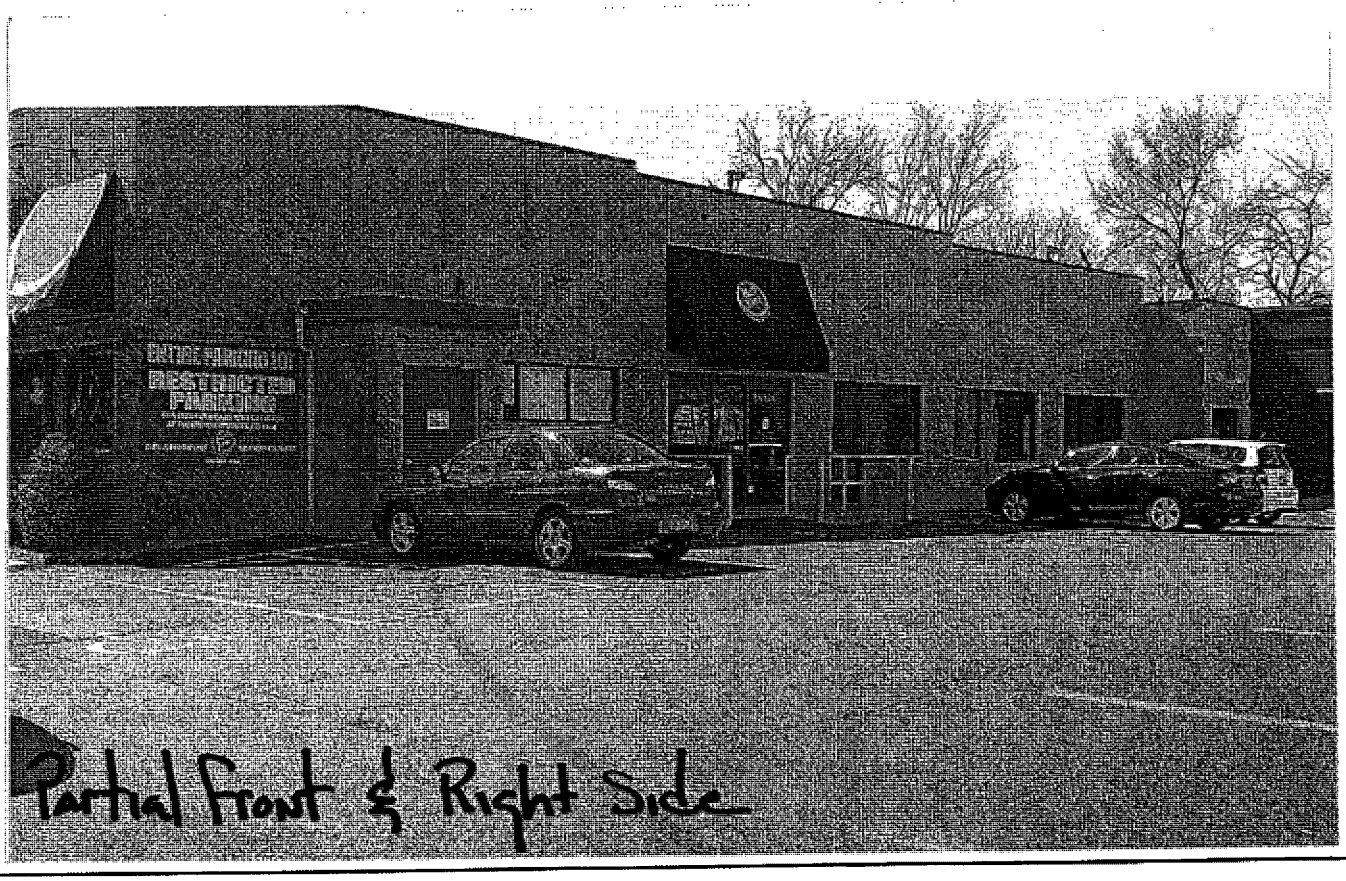
See Instructions for Item A6.

IMPORTANT: In these spaces, copy the corresponding information from Section A.	FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 135 Hoyt Avenue	Policy Number:
City Village of Mamaroneck State NY ZIP Code 10543	Company NAIC Number:

If us... for I... Side... indic...



Left Side

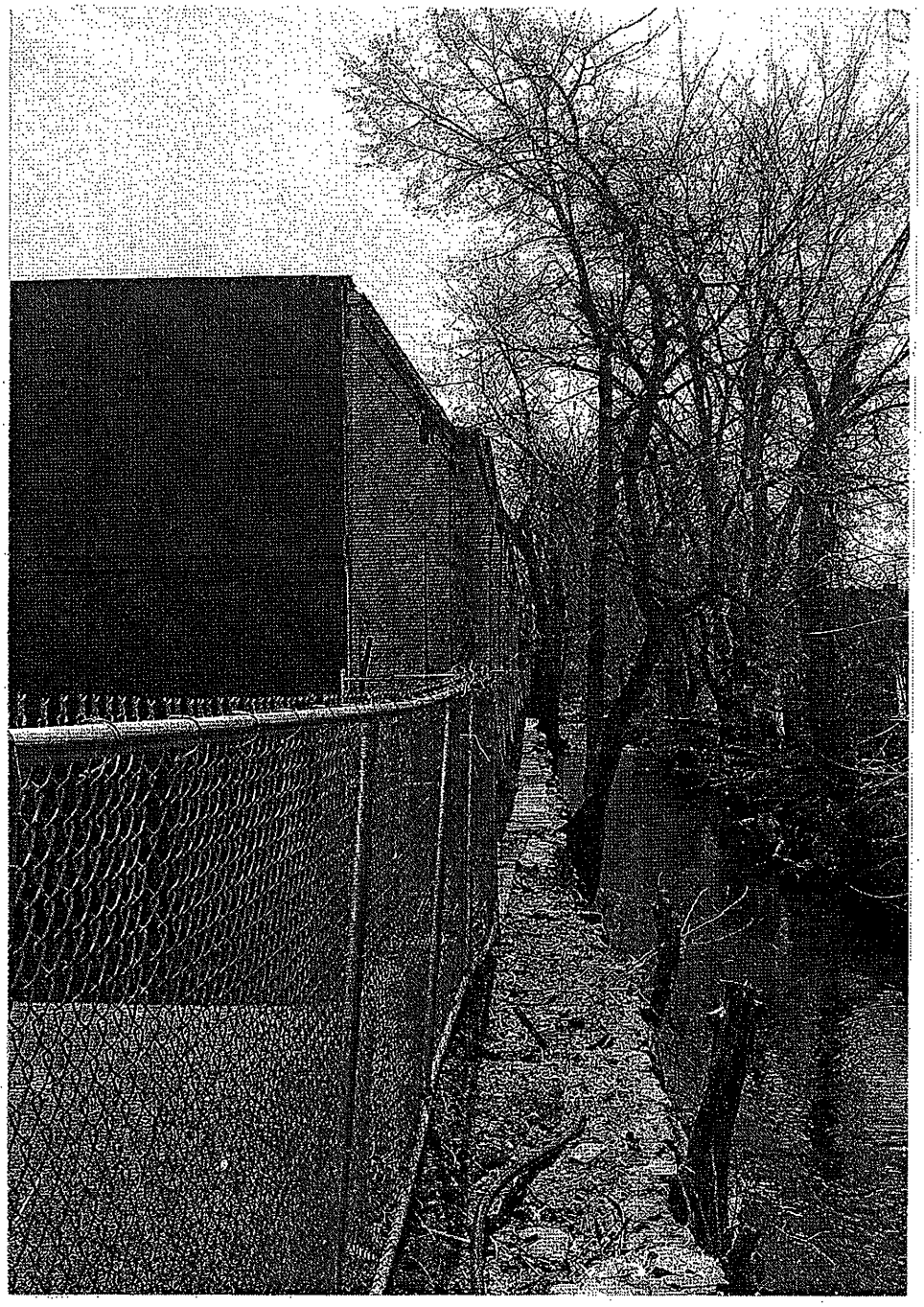


Partial Front & Right Side

BUILDING PHOTOGRAPHS
Continuation Page

IMPORTANT: In these spaces, copy the corresponding information from Section A.				FOR INSURANCE COMPANY USE
Building Street Address (including Apt., Unit, Suite, and/or Bldg. No.) or P.O. Route and Box No. 135 Hoyt Avenue				Policy Number:
City Village of Mamaroneck	State NY	ZIP Code 10543		Company NAIC Number:

If submitting more photographs than will fit on the preceding page, affix the additional photographs below. Identify all photographs with: date taken; "Front View" and "Rear View"; and, if required, "Right Side View" and "Left Side View." When applicable, photographs must show the foundation with representative examples of the flood openings or vents, as indicated in Section A8.



Rear View

09151.201 139 HOYT AVENUE MAMARONECK NY - EQUIPMENT ELEVATIONS

Attachment to Elevation Certificate Dated: May 1, 2014

Elevations shown hereon are referenced to the North American Vertical Datum of 1988 (NAVD 88)

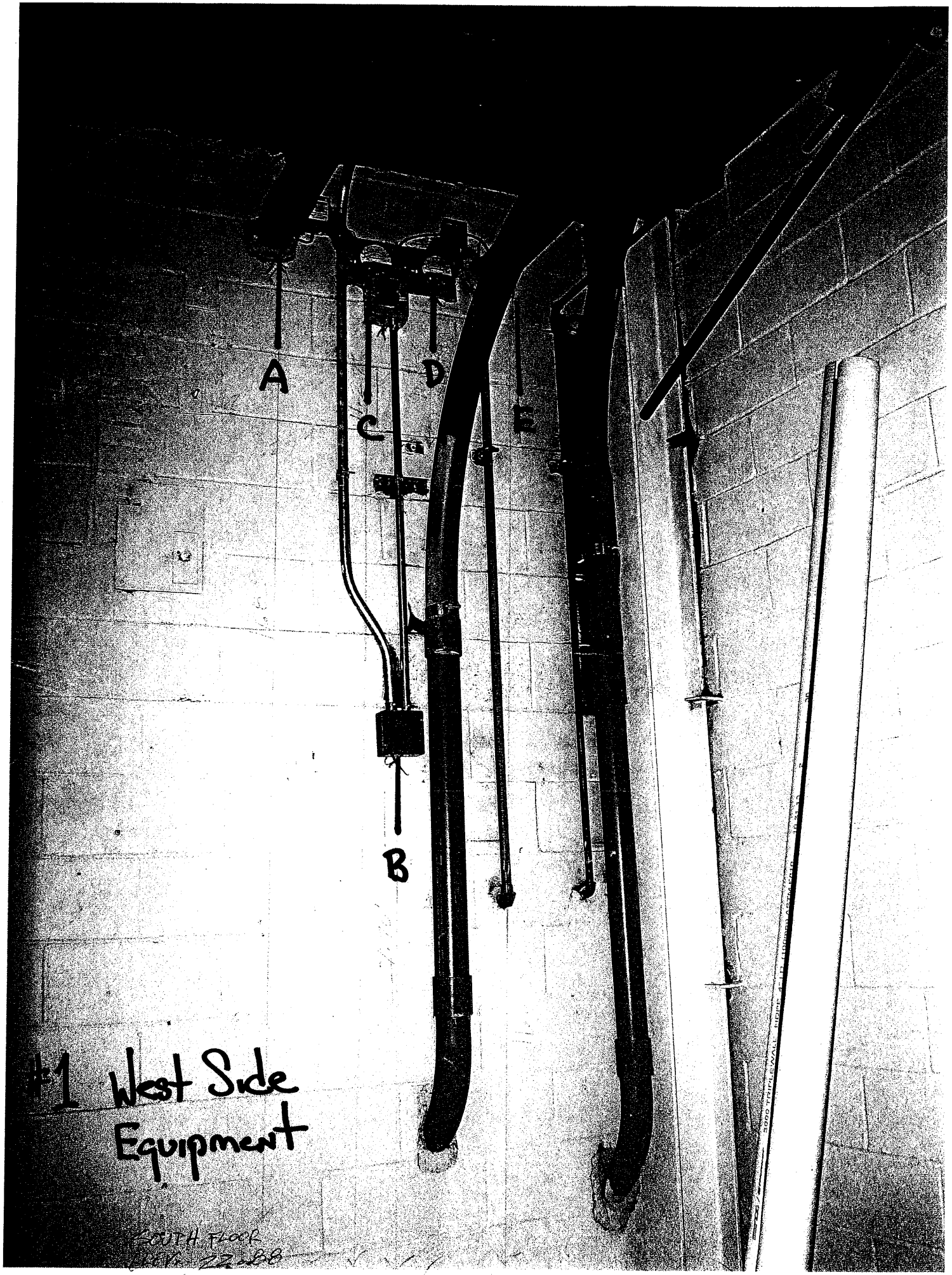
Elevations are to the bottom of the feature

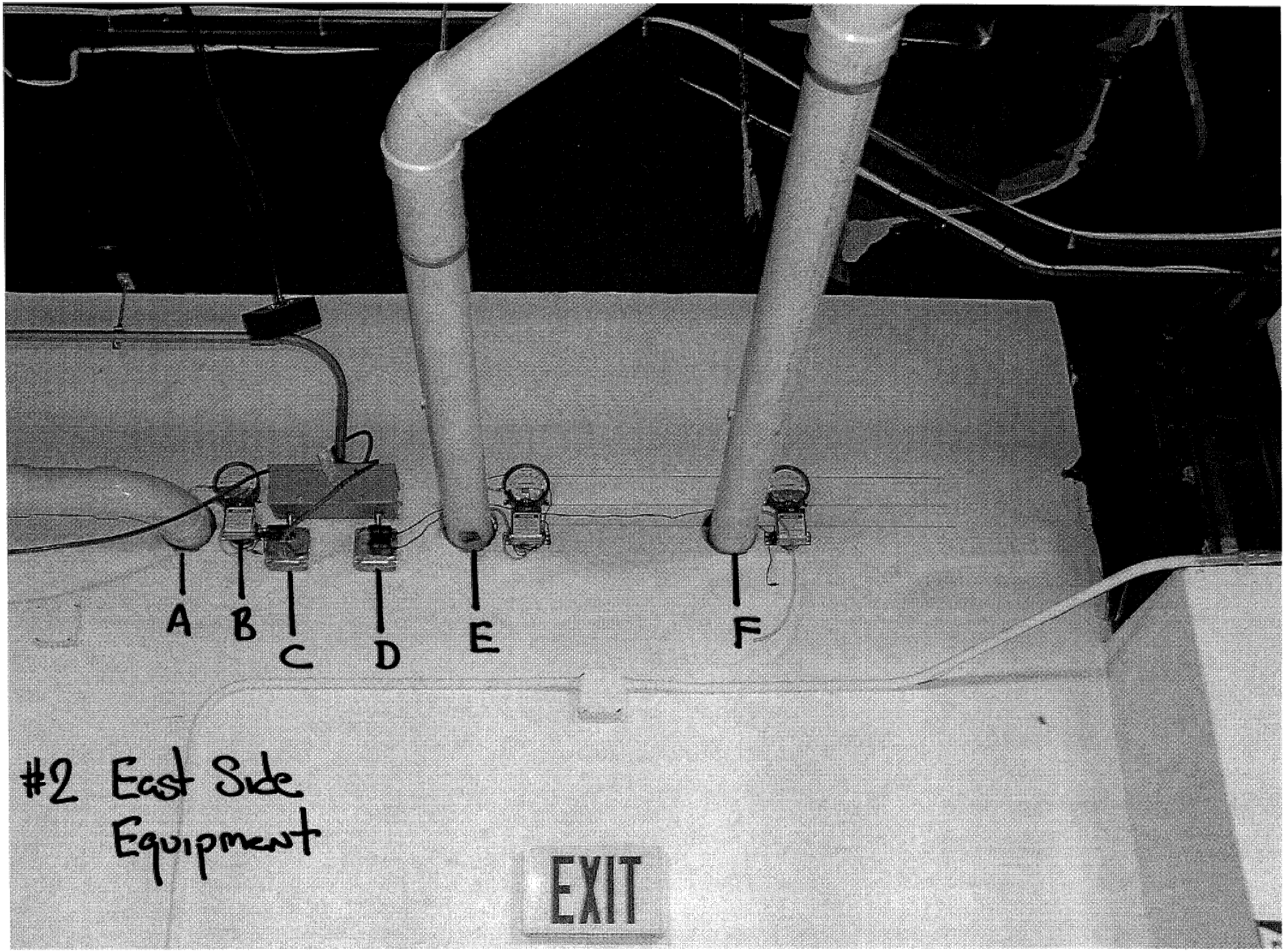
Fig. # 1 West Side Equipment

A - PIPE 34.7'
B - ELEC. BOX 30.6'
C - ELEC. BOX (OUTLETS) 34.2'
D - ELEC. METER (x2) 34.5'
E - PIPE 34.7'

Fig. #2 East Side Equipment

A - PIPE 33.8'
B - ELEC. BOX 33.8'
C - ELEC. BOX (OUTLETS) 33.5'
D - ELEC. BOX (OUTLETS) 33.5'
E - PIPE 33.8'
F - PIPE 33.8'


A
C
D
E
B
#1 West Side
Equipment
SOUTH FLOOR



#2 East Side Equipment