Final Engineering Report

Midler City Industrial Park Site
Brownfield Cleanup

City of Syracuse
Onondaga County, New York

NYSDEC BROWNFIELD SITE # C734103

Prepared for
Pioneer Midler Avenue, LLC

By

C&S Engineers, Inc.
499 Col. Eileen Collins Blvd.
Syracuse, New York 13212

December 2007

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Certifications

I certify that the Interim Remedial Measure Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Interim Remedial Measure Work Plan and were personally witnessed by me or a person under my direct supervision.

Signature: _____

Engineer: Robert N. Duclos, P.E.

Registration Number: 070428

State: New York

Date: 12/27/2007

- The data submitted to the Department demonstrates that the remediation requirements set forth in the remedial work plan and any other relevant provisions of ECL 27-1419 have been or will be achieved in accordance with the time frames, if any, established in the work plan.
- Any use restrictions, institutional controls, engineering controls and/or any operation and maintenance requirements applicable to the site are contained in an environmental easement created and recorded pursuant to ECL 7 1-3605 and that any affected local governments, as defined in ECL 7 1-3603, have been notified that such easement has been recorded.
- A Site Management Plan has been submitted by the applicant for the continual and proper operation, maintenance, and monitoring of any engineering controls employed at the site including the proper maintenance of any remaining monitoring wells, and that such plan has been approved by the Department.

Owner: Pioneer Midler Avenue, LLC

Signature: _____

Date: 12/27/07

FINAL ENGINEERING REPORT

MIDLER CITY INDUSTRIAL PARK BROWNFIELD SITE

SECTION 1 - INTRODUCTION

C&S Engineers, Inc., on behalf of our client Pioneer Midler Avenue, LLC, has prepared this Final Engineering Report (FER) for the Midler City Industrial Park Brownfield Site. This FER summarizes work conducted at the site for the last several years under a Brownfield Cleanup Agreement signed in February 2005. This work has been comprehensively detailed in the following reports, which are included by reference as part of this FER.

- *Remedial Investigation and Remedial Alternatives Report*, December 2007, Volumes 1, 2, 3, 4 and 5.
- *Interim Remedial Measures Report*, December 2007, Volumes 1, 2, and 3.
- *Site Management Plan*, December 2007
- *Remedial Work Plan*, December 2007
- *Demolition and Site Work Summary Report*, December 2007.

The term *chlorinated volatile organic compounds* (CVOCs), as used in this report, refers to the suite of compounds made up of tetrachloroethene (PCE), trichloroethene (TCE), vinyl chloride (VC), cis-1,2-dichloroethene (cis-1,2-DCE), and trans-1,2-dichloroethene (trans-1,2-DCE).

Appendix A contains a copy of the NYSDEC FER Checklist.

SECTION 2 - TECHNICAL CONTENT OF THE REPORT

2.1 Identification of the boundaries

Appendix B includes the metes and bounds description and survey map for the Midler site.

2.2 Description of the Remedial Activities

An Interim Remedial Measure (IRM) was conducted at the site and that was taken into consideration in developing the remedy. A detailed description of the IRM is provided in the *Interim Remedial Measures Report*, December 2007, Volumes 1, 2, and 3. The following summarizes that report.

The IRM was conducted to remove CVOCs from four source areas identified during the Remedial Investigation (RI). The technology adopted to remove CVOCs was in-situ thermal desorption. The smallest of the four source areas ("B-5" Area) was first excavated and the impacted materials were placed within the two largest treatment areas ("B-1" and "B-3" Areas) for CVOC removal via thermal desorption. The subsurface within the thermal treatment areas was heated by electrical resistance units installed within vertical steel wells to depths of five feet below the depth of detected CVOC impacts within each area or sub-area; vapors released by the heating process were collected in a horizontal extraction system installed above the water table and beneath a concrete (low-permeability) surface pad. The collected CVOC vapors were then thermally destroyed in an aboveground natural gas-fired thermal oxidation unit.

The IRM Work Plan set forth a soil verification sampling plan that included specific sampling locations, depths, and protocols for sample collection and data reduction. Table 1 of the *IRM Work Plan* provides the verification sample identifications, depths, and the RI reference samples used to determine those depths while Figure 1 of the *IRM Work Plan* shows the locations of the verification samples.. In addition to soil verification data, the following data were regularly collected and reported during the IRM:

- Vapor CVOC content prior to and following CVOC destruction within the thermal oxidizer or removal within the vapor-phase carbon units
- Condensate (water) from the vapor treatment system prior to and following CVOC removal in the aqueous phase carbon unit
- Ambient air per requirements of the Community Air Monitoring Plan.

2.3 Description of ICs/ECs

The institutional controls (ICs) and engineering controls (ECs) for the Midler site are described in detail in the *Remedial Work Plan*, December 2007 and the *Site Management Plan*, December 2007. The following summarizes those controls.

Site Specific Engineering Controls

Sub-slab depressurization systems (SSDSs) - SSDSs were installed in the two existing buildings and will be installed and maintained on all future buildings on the Site. The designs and system performance requirements will be in accordance with most current applicable regulations and/or guidance.

Public water supply - The site and surrounding properties receive their domestic water from municipal service connections supplied by the City of Syracuse. The source of the municipal water supply is surface water from Skaneateles Lake, Otisco Lake, and Lake Ontario.

Paved and concrete surfaces - Site cover - To the extent reasonable, surfaces outside of the building footprints are to be paved or covered with conventional asphalt or concrete. Areas beneath the asphalt and/or concrete pavement are to receive one foot of clean Type 1 or 2 crushed limestone from an approved Quarry (i.e., T. H. Kinsella, Hansen). Areas outside of buildings and paved areas will receive either a combination of clean crushed limestone fill, and/or clean topsoil to a depth of one foot. The clean crushed limestone fill and/or topsoil will be maintained to avoid direct contact with pre-existing urban fill material and native soils.

Site Specific Institutional Controls

Annual Certification - As required by ECL 27-1415 and the Brownfield Cleanup Agreement for the site, Pioneer will submit an annual certification that the aforementioned Engineering Controls are in operation and working effectively to the NYSDEC.

Environmental Easement - Pioneer will grant the NYSDEC an environmental easement for the Site to ensure that use restrictions or engineering controls remain in place and will be binding to

future owners and lessees, or until modified, extinguished, or amended by a written instrument executed by the Commissioner of the NYSDEC.

Groundwater Use Restriction - The use or discharge of untreated groundwater for any purpose will not be permitted at the Site.

Soil Management Plan **-** A site specific soil management plan will be implemented at this Site. The soil management plan is presented in the *Site Management Plan* dated December 2007.

2.4 Identification of Cleanup Levels

The July 2006 *IRM Work Plan* established site-specific clean-up objectives (SSCOs) for four CVOC parameters which were the focus of the IRM. The SSCOs, shown in the table below, were calculated using NYSDEC's methodology from the Technical and Guidance Memorandum (TAGM) #4046, utilizing site groundwater characteristics and Total Organic Carbon (TOC) data.

CVOC Parameter	Midler SSCO
PCE	5,600
TCE	2,800
Vinyl chloride	800
trans-1,2-Dichloroethene	1,200

All units in µg/kg

2.5 Implementation of Remedial Actions

As indicated above, there were no remedial activities conducted at the site in accordance with a remedial work plan or decision document for the site. However, an Interim Remedial Measure (IRM) was conducted. A detailed description of the IRM is provided in the *Interim Remedial Measures Report*, December 2007, Volumes 1, 2, and 3. The following summarizes the implementation of the IRM.

In July 2006, prior to the installation of the in-situ thermal treatment system, the "B-5" Area was excavated and the CVOC-impacted soils were moved to the "B-1" and "B-3" thermal treatment areas. Bottom and sidewall soil verification samples were collected at the limits of the "B-5" excavation per the work plan. "B-5" Area verification results are included in Table 2 of the IRM report. The "B-5" Area verification sampling results were previously provided to NYSDEC in a September 22, 2006 report, a copy of which is provided as Appendix A-2 of the IRM report.

Prior to mobilizing to the site, TerraTherm submitted a layout and specifications for the remedial system, with the understanding that additions/modifications to the system could be instituted as necessary to meet the performance and scheduling goals. TerraTherm mobilized for the IRM on July 24, 2006. Heater wells were installed in a hexagonal grid within each of the three ("3D", "B-3", and "B-1") thermal treatment areas (Figure 2 of the IRM report). Thermal treatment began on November 1, 2006, with the phased start-up of the heater wells.

Verification sampling was initiated on March 5, 2007. Data from the verification sampling program is provided in Table 2 of the *Interim Remedial Measures Report*. TerraTherm identified areas where, based on temperature data from subsurface thermocouples, CVOC removal to the remedial goals was likely to have occurred. Successive rounds of verification sampling were then conducted until the remedial objective was attained in each treatment area. The vapor collection and treatment system operated continuously throughout the remediation. As the various thermal treatment areas or sub-areas achieved the remedial goals, specific heater wells were taken off-line. As additional resources became available due to those shutdowns, those resources were shifted (via installation of additional heater wells) to other areas as needed.

Areas of Concern

The four CVOC source areas of concern were identified during the RI and addressed by the IRM. As developed in the IRM Work Plan, the areas delineated for source area treatment under the IRM were those areas where RI sample results for CVOCs (total) in soils exceeded 31,200 µg/kg. Figure 1 of the IRM report shows the source areas addressed during the IRM. The following provides a description of each of those areas.

- **"B-3" Area**: Located generally along the eastern edge of former Building 7, this area included two apparently separate sources of CVOCs, where concentrations in soil were two to three orders of magnitude greater than the concentrations detected at other sampling locations in the surrounding area. CVOC impacts were present to a maximum depth of 26 feet (GPD-3) in the B-3 Area.
- **"B-1" Area**: Located along the northern edge of former Building 13, this area included two apparently separate source areas defined by the PCE/TCE analytical data for boring B-1 and test pit TP-14 (westernmost source area), and borings DW-4 and GPD-26 (easternmost source area). The CVOC impacts in these areas were relatively shallow (<15 ft. below the ground surface).
- **"B-5" Area**: Located east of Building 12, the IRM work in this area addressed one area (characterized by soil samples B-5 and GPD-14), where the data indicate CVOC concentrations exceeded 31,200 µg/kg to a depth of approximately ten feet.
- **"3D" area:** The soil sample from this boring did not exhibit significant CVOC impacts during initial investigations, but the groundwater sample from this location exceeded Class GA standards for several parameters. During October 2005, a dense non-aqueous phase liquid (DNAPL) exhibiting the olfactory characteristics of PCE was observed in MW-3D. Subsequent laboratory analysis confirmed that the DNAPL was PCE. Additional borings confirmed the presence of elevated levels of CVOCs in a small area around MW-3D.

Problems Encountered During Construction

As discussed above, and further discussed in the report prepared by the remedial contractor (Appendix A of the IRM report), the operational approach provided the flexibility to take heaters off-line in an area when verification sampling results indicated that the remedial goals were achieved and, conversely, to install additional heater wells in other areas to accelerate removals in those areas. A proposal for each resource reallocation event was submitted to NYSDEC for approval in advance of implementation (Appendix A, Sections 2.5 and 6 of the IRM report). In

addition to heater wells, two additional types of installations were utilized by TerraTherm to accelerate treatment in specific areas:

- Sheet piling was installed to inhibit possible surface water flux in several areas; and
- Air sparge points were installed at three locations to enhance vapor movement towards the vapor collection system.

Figure 2 of the IRM report shows the initial heater well grids and where sparge points and sheet piling were subsequently installed.

As the verification sampling proceeded, the data indicated that the thermal processes being used to volatilize CVOCs were also producing measurable quantities of ketones (acetone, 2-butanone) within the subsurface. Literature from other thermal remediation projects and TerraTherm's experience indicated that ketone production is due to either biological or physical/chemical pathways. The physical/chemical pathway would be greatly enhanced by elevated temperatures and by the presence of humic acids within the subsurface strata. The concentrations of ketones are expected to decline relatively rapidly as the treatment areas cool down in the months following shut-down of the thermal treatment system.

It appears that based on literature values, theoretical values, and available site data, the VC found at MW-13D would be completely degraded decades before it could move off-site. This analysis does not consider potential recharge of VC via partitioning or dechlorination pathways (which would increase the time period to achieve clean-up goals) or accelerated dechlorination during the cool-down period (which could decrease the period). Analytical data from MW-13D indicate that parent compounds are not present. Soil verification data from the 3D area indicate an average of 2,851 ppb PCE approximately 25 feet away.

Changes to the Design Documents

As the thermal treatment progressed, protocols for sampling the heated soils and groundwater were developed to assure sample integrity by cooling of the sample media to ambient

temperatures as soon as possible after retrieving the sample form the subsurface. Those protocols were submitted to NYSDEC prior to sample collection.

Near the end of the thermal treatment, when only three "B-1" sample locations required further treatment, the vapor stream was routed through a vapor-phase carbon treatment system, and the thermal oxidation unit was taken off-line. The NYSDEC was notified prior to this changeover.

Volume and Concentrations of Materials Removed

Section 4 of the *Interim Remedial Measures Report* provides calculations, based on CVOC concentrations at the inlet and exhaust of the vapor treatment units (thermal oxidizer or vapor-phase carbon), and associated vapor flow rates, for the mass of CVOCs removed during the IRM. These data indicate that a total of approximately 86,205 pounds of CVOCs were removed from the site during the IRM. Similar mass removal calculations for the condensate water (before and after aqueous-phase carbon adsorption) indicated that CVOC mass removals via that pathway were negligible. Table 4 of the *Interim Remedial Measures Report* summarizes the removal concentrations and quantities. The following table shows the approximate surface areas and volumes of the areas of concern described above.

Area ID	**Surface Area** (square feet)	**Depth** [Note 1] (feet)	**Volume** (cubic yards)
B-1	8,419	18	5,613
B-3	12,690	18-25	8,816
B-5	1,937	6 [Note 2]	430
MW-3D	1,220	18	813
Totals	24,266	varies	15,672

Note 1 - Depth of thermal treatment was five feet below the depth of contamination shown in the table.

Note 2 - In the B-5 area, only soil from 6 to 12 feet below land surface was removed.

Waste Disposal Listing

The CVOCs removed via vapor extraction were destroyed in the thermal oxidizer; therefore, no waste disposal was associated with that part of the project. Appendix B-1 of the IRM report provides the monthly results of the vapor treatment unit sampling.

After exiting the thermal oxidizer, the hot vapors entered a quench tank and packed tower scrubber that utilized a caustic solution to neutralize the acid-containing vapors. A portion of the quench water was evaporated and, after passing through carbon, the remaining water was discharged to the sanitary sewer system under a permit with the Onondaga County Department of Water Environment Protection. Appendix B-2 of the IRM report contains information relative to the wastewater discharge.

During the last stages of the IRM, when only small thermal treatment sub-areas required treatment, the vapor phase carbon replaced the thermal oxidizer for treatment of the vapor phase. Documentation pertaining to the disposal of spent vapor phase carbon is provided in Appendix C of the IRM report.

The following table summarizes the off-site disposal of materials from the Midler site.

Location	Quantity	Type	Date
Cycle Chem Inc. 550 Industrial Drive Lewisbarry, PA	28.8 tons	non-haz. waste	November 2005
Industrial Oil Tank Services 120 Dry Road Oriskany, NY	0.3 gallons	oil/water	November 2005
Heritage Environmental Services 7901 West Morris St. Indianapolis, IN	6.676 tons	haz. waste	January 2006
CWM Chemical Services 1550 Balmer Road Model City, NY	11,701.5 tons	haz. waste	February 2006
Industrial Oil Tank Services 120 Dry Road Oriskany, NY	1,225 gallons	oil/water	February 2006
City of Watertown Pollution Control Plant 700 William t Field Drive Watertown, NY	83,305 gallons	water	February 2006

Location	Quantity	Type	Date
Industrial Oil Tank Services 120 Dry Road Oriskany, NY	1,625 gallons	oil/water	March 2006
City of Auburn Landfill 311 North Division St Auburn, NY	2281.41 tons	soil	Mar/April 2006
Cycle Chem Inc. 550 Industrial Drive Lewisbarry, PA	1.275 tons	haz. waste	June 2006
City of Watertown Pollution Control Plant 700 William t Field Drive Watertown, NY	4,450 gallons	water	August 2006
Von Roll America 1250 St George St. East Liverpool. OH	0.05 tons	haz. waste	January 2007
Industrial Oil Tank Services 120 Dry Road Oriskany, NY	0.35 tons	oil/water	March 2007
Town of Camillus Landfill 4600 West Genesee St Syracuse, NY	7,963.59 tons	soil	May 2007
CWM Chemical Services 1550 Balmer Road Model City, NY	0.4 tons	carbon filters	June 2007
Town of Camillus Landfill 4600 West Genesee St Syracuse, NY	2,404.75 tons	soil	July 2007
Town of Camillus Landfill 4600 West Genesee St Syracuse, NY	5,015.87 tons	soil	August 2007
Town of Camillus Landfill 4600 West Genesee St Syracuse, NY	3,220.92 tons	soil	September 2007
Town of Camillus Landfill 4600 West Genesee St Syracuse, NY	3,221.33 tons	soil	October 2007
Industrial Oil Tank Services 120 Dry Road Oriskany, NY	1,128 gallons	transformer oil	October 2007
CWM Chemical Services 1550 Balmer Road Model City, NY	0.45 tons	oxider sludge	November 2007
CWM Chemical Services 1550 Balmer Road Model City, NY	0.85 tons	carbon filters/soils	November 2007

Location	Quantity	Type	Date
Solvents and Petroleum Services 1406 Brewerton Road Syracuse NY	0.85 tons	concrete sealer/water	November 2007
TCI of New York 39 Falls Industrial Park Hudson, NY	1.518 tons	switches	December 2007
City of Auburn Landfill 311 North Division St Auburn, NY	43.1 tons	soil	December 2007
High Acres Landfill 425 Perinton Parkway Fairport, NY	7.52 tons	railroad ties	December 2007

Copies of manifests for these wastes were provided electronically to the DEC at the time of this report submittal.

2.6 Site Restoration Activities

There were no specific site restoration activities at the Midler site. All of the materials installed as part of the IRM (e.g., heaters, wiring) were removed by the IRM contractor. Since the site was undergoing redevelopment during and subsequent to the IRM, no additional site restoration activities were needed.

2.7 Imported Fill

As indicated above, no specific site restoration activists were undertaken at the Midler site. In addition, as indicated in DER-10, Section 5.4(c)(2), fill used for new building foundations or other construction in remediated areas is exempted from the requirement to obtain pre-approval of fill for the site restoration activities. To the extent reasonable, surfaces outside of the building footprints are to be paved or covered with conventional asphalt or concrete. Areas beneath the asphalt and/or concrete pavement are to receive one foot of clean Type 1 or 2 crushed limestone from an approved quarry (i.e., T. H. Kinsella, Hansen). Areas outside of buildings and paved areas will receive either a combination of clean crushed limestone fill, and/or clean topsoil to a depth of one foot. The clean crushed limestone fill and/or topsoil will be maintained to avoid direct contact with pre-existing urban fill material and native soils. Approximately 90,100 tons of clean, crushed limestone (from T. H. Kinsella, Hansen) was brought to the site; this equates to

about 45,050 cubic yards. The fill that was used at B-5 was a combination of crushed concrete and block from the demolition, and it was capped with one foot of clean crushed limestone from Kinsella's quarry.

SECTION 3 - TABLES AND FIGURES

The five comprehensive reports listed in Section 1 above have numerous figures and data tables detailing pre- and post-IRM conditions at the Midler site.

SECTION 4 - AS-BUILT DRAWINGS

The as-built survey drawing of the site, including markers for vertical and horizontal control, is provided in Appendix B. In addition, drawings for the two existing SSDSs are provided in Appendix E. Figure 1 of the *Demolition and Site Work Summary Report* shows the location of an underground storage tank (UST). The cylindrical tank was approximately 4 feet in diameter by 10.6 feet long, and was situated just below grade. No supply, return, or vents lines were observed. The UST was full of water with approximately 6 inches of sediment and sludge. The contents of the UST (approximately 975 gallons) were removed for disposal off-site at the City of Watertown Wastewater Treatment Plant. The UST was subsequently removed utilizing a track-mounted excavator. No visual evidence of staining or petroleum impact was observed in the soils surrounding the UST, however three holes ranging from 0.25 to 0.75 inches in diameter were observed on the bottom of the UST. The tank appeared to have been previously dented, seeming to indicate that tank may have been reburied. The soil surrounding the tank was screened using a PID. All of the PID values were 0.0 ppm. Given the shallow placement of the UST and lack of observable petroleum impact, only one soil sample was collected. The sample was collected from a depth of four to six feet below grade, directly under the approximate center of the UST. The sample was submitted for laboratory analysis via EPA Methods 8260 and 8270 for NYSDEC STARS/TAGM volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs). No STARS-listed VOCs were detected above the method detection limits. A total of five STARS-listed SVOCs were detected above NYSDEC TAGM 4046 Recommended Soil Clean-up Objectives (RSCOs). Given that the UST was removed and no

supply, return, or vents lines were observed, no further investigation, remedial action, or laboratory analyses were conducted.

SECTION 5 - DATA SUBMITTAL

Electronic copies of the following items have been provided to the State under separate cover:

- Fully executed manifests documenting off-site transport and disposal of all material deemed hazardous or solid wastes.
- Analytical data for pre- and post-excavation samples, treated water effluent analyses, and waste disposal characterizations, including all laboratory data sheets and the required laboratory data deliverables.

SECTION 6 - SITE MANAGEMENT PLAN

The approved Site Management Plan has been prepared and has been included by reference.

SECTION 7 - ENVIRONMENTAL EASEMENT

The signed environmental easement is included in Appendix D.

SECTION 8 - CITIZEN PARTICIPATION

A fact sheet for the Certificate of Completion will be issued once the COC is issued. A copy is provided in Appendix C.

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Appendix A

FER Checklist

Checklist for Final Engineering Report Approval

(BCP, SSF and ERP sites)

Site Name: **Midler City Industrial Park Site**
Location: **601 S. Milder Ave, Syracuse, NY**
Site No.: **C734103**
Project Manager: **Karen Cahill**

All Final Engineering Reports (FER) submitted to the DER for approval will prepared by an individual licensed or otherwise authorized in accordance with Article l45 of the education law to practice the profession of engineering, and include the following:

Technical Content of the Report: The FER must include the following:	
☒Yes ☐No ☐NA	Clear identification of the boundaries of the site as described in the brownfield site cleanup agreement (BSCA), ERP State assistance contract or for a Superfund site as defined in order or the Inactive Hazardous Waste Disposal Site Registry.
☒Yes ☐No ☐NA	A metes and bounds description and survey map must be included in the FER which corresponds to the above site boundaries.
☒Yes ☐No ☐NA	A description of the remedial activities completed at the site, which are the subject of this FER, completed in accordance with the remedial work plan and/or decision document for the site.
☒Yes ☐No ☐NA	A complete description of any institutional and/or engineering controls employed at the site, including the mechanisms that will be used to continually implement, maintain, monitor, and enforce such controls.
☒Yes ☐No ☐NA	Identification of the cleanup levels applied to the remedial actions, for each media of concern and area of concern at the site;
☒Yes ☐No ☐NA	A summary of the implementation of the remedial actions, which includes as appropriate: • A description of any problems encountered during construction and their resolution; • A description of changes to the design documents and why the changes were made; • Quantities and concentration of contaminants removed or treated; • A listing of the waste streams, quantity of materials disposed and where they were disposed. • Boundaries of the real property subject to the environmental easement or other institutional controls or the oversight agreement

☒Yes ☐No ☐NA	The FER generally follow the guidance provided in DER10, Section 5.8 and specifically includes the following, as appropriate to the remedy:
☒Yes ☐No ☐NA	• A detailed description of site restoration activities pursuant to DER10 Section 5.4(d).
☒Yes ☐No ☐NA	• A detailed description of source and quality of imported fill pursuant to DER Section 5.4(d)2.
☐Yes ☐No ☒NA	• For active groundwater remedial actions, the final engineering report should also include figures representative of flow conditions immediately preceding initiation of the remedial action and flow conditions representative of pumping conditions.
☐Yes ☐No ☒NA	• For SSF State funded and ERP projects: A detailed report of actual costs including bid tabulations and change orders, if any State funding is provided.
Tables and Figures:	Included: ☒Yes ☐No ☐NA
	As set forth in DER10 Section 3.14 (remedial investigation report) tables and figures presenting all pre- and post-remedial data keyed appropriately are included to as appropriate to document the satisfactory completion of the remedial action. The figure/tables should clearly indicate the volume of contaminated media which was remediated by area where appropriate.
As-Built Drawings:	Included: ☒Yes ☐No ☐NA
	"As-built" drawings, with a NYS P.E. stamp and signature on each drawing, were provided. The as-built drawings will identify:
☒Yes ☐No ☐NA	The boundaries of the real property subject to the environmental easement or other institutional controls or the oversight agreement. The boundaries of the real property as defined by the BSCA, ERP SAC or Registry site must be incorporated on all figures.
☒Yes ☐No ☐NA	The location and extent of all engineering controls including, without limitation, slurry walls, treatment units, piping and instrumentation diagrams or other remedial structures which will remain in place after completion of the remedial action.
☒Yes ☐No ☐NA	Permanent survey markers for horizontal and vertical control for site management, as defined by DER-l0 Section 6.
☒Yes ☐No ☐NA	For projects with soil covers and/or caps: the areal and vertical (depth) extent of the covered/capped area, including identification of buildings and/or paving which are considered part of the site cover/cap as well as a description of the material and depths of the demarcation layer.
☒Yes ☐No ☐NA	For projects with soil removals: the limits of the excavation, the depth of the excavation and location of all documentation samples.

☒Yes ☐No ☐NA	For projects with underground storage tank removals: the size and contents of the tank(s) identified and addressed by the remedy, the surveyed location of the tanks removed or abandoned in place and the extent of any soil removal as per above.
Data Submittal:	Included: ☒Yes ☐No ☐NA
	The following information is to be submitted with the final engineering report, in an electronic format identified by the DER. This information is not to be included as an attachment or appendix to the report, but as a separate data submittal in an electronic format approved by the DER:
☒Yes ☐No ☐NA	Electronic copies of all fully executed manifests documenting off- site transport and disposal of all material deemed hazardous or solid wastes.
☒Yes ☐No ☐NA	All analytical data for pre and post-excavation samples, soil backfill analyses, treated water effluent analyses, and waste disposal characterizations, including all laboratory data sheets and the required laboratory data deliverables pursuant to DER10 Sections 2.2, 2.3, and Appendix 2B.
☐Yes ☒No ☐NA	Photographs
Site Management Plan (SMP):	
	☐NA If none is required for the remedy which is the subject of this FER check here
☒Yes ☐No ☐NA	The approved SMP is included in the FER.
☒Yes ☐No ☐NA	The SMP must include at a minimum an Institutional and Engineering Control Plan as well as provision for the periodic certification of the institutional control and engineering controls (IC/EC certification) and may include, as required by the remedy, a Site Monitoring Plan and Operation & Maintenance Plan. The required certification regarding the SMP is included in the Certification Section below.
Environmental Easement	
	☐NA If none is required for the remedy which is the subject of this FER check here
☒Yes ☐No ☐NA	A filed copy of the environmental easement is included in the FER or has been provided to the Department.
☒Yes ☐No ☐NA	Title insurance has been issued in favor of the Department.
☒Yes ☐No ☐NA	A certification that the easement has been filed and the municipalities having jurisdiction over the easement have been notified is required. See Certification Section below for the language of this certification.

Financial Assurance	
	☒NA If none is required for the remedy which is the subject of this FER check here
☐Yes ☐No ☒NA	Identify the financial assurance mechanisms required for the site and include the copy of the executed mechanism.
☐Yes ☐No ☒NA	A certification that the Financial Assurance has been submitted by the applicant must be included in the FER. See Certification Section below for the language of this certification.
Citizen Participation	
☒Yes ☐No ☐NA	A notice to the mailing list/Fact Sheet was issued after the FER was submitted but prior to Department approval of the FER. NOTE: A notice to the mailing list/Fact Sheet is also to be issued within 10 days of when the Certificate of Completion is issued by the Department for a site which will utilize IC/ECs. *Note: The Draft FER was submitted and approved the same week. The COC Fact Sheet will be sent once the COC is approved.*
FER Certification and Stamp by a PE:	Included: ☒Yes ☐No ☐NA
	The FER will be prepared, stamped and the following certification signed by an individual licensed or otherwise authorized in accordance with article l45 of the education law to practice the profession of engineering:
	"I certify that the Remedial Action Work Plan (or Remedial Design) was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan (or Remedial Design) and were personally witnessed by me or a person under my direct supervision."

Certifications for the COC:	
Pursuant to Environmental Conservation Law 27-1419 for the BCP and 6 NYCRR 375 for the ERP and SSF, the *Final Engineering Report* must include the certifications listed below, which are to be signed by the PE certifying the FER or the site owner. These certifications must appear exactly as they are set forth below:	**Included:** ☒Yes ☐No ☐NA
• "The data submitted to the Department demonstrates that the remediation requirements set forth in the remedial work plan and any other relevant provisions of ECL 27-1419 have been or will be achieved in accordance with the time frames, if any, established in the work plan."	**Included:** ☒Yes ☐No ☐NA
• "Any use restrictions, institutional controls, engineering controls and/or any operation and maintenance requirements applicable to the site are contained in an environmental easement created and recorded pursuant to ECL 7 1-3605 and that any affected local governments, as defined in ECL 7 1-3603, have been notified that such easement has been recorded."	**Included:** ☒Yes ☐No ☐NA
• "A Site Management Plan has been submitted by the applicant for the continual and proper operation, maintenance, and monitoring of any engineering controls employed at the site including the proper maintenance of any remaining monitoring wells, and that such plan has been approved by the Department."	**Included:** ☒Yes ☐No ☐NA

• "Any financial assurance mechanisms required by the Department pursuant to ECL 27-1419 have been executed."	**Included:** ☐ Yes ☐ No ☒ NA

The review of the Final Engineering Report has been completed and found to satisfy all applicable requirements and guidance as detailed above. The Final Engineering Report is therefore recommended for approval.

Completed by:_____ Date:_____
Project Manager

Reviewed by: _____ Date:_____
Section Chief/Regional HWR Engineer

Appendix B

Metes & Bounds Description,

Survey Map

Parcel Description – Page 1
Pioneer Midler Avenue LLC
Syracuse, NY

All that tract or parcel of land situate in the City of Syracuse, Onondaga County, State of New York, being part of Military Lot Number 40 of the former Town of Dewitt, bounded and described as follows:

Beginning at a concrete monument on the easterly right of way line of South Midler Avenue as appropriated to the State of New York (Map No. 66, Parcel No. 106 & 107); thence, along the easterly line of said appropriated Parcel No. 106 the following two courses and distances:

North 02°-36'-16" West, a distance of 330.71 feet to a point; thence,

North 07°-30'-43" West, a distance of 276.38 feet to a concrete monument on the southerly right of way line of New York State Route 690 (as appropriated to the State of New York – Map No. 354, Parcel No. 450 & 451; and Map No. 351, Parcel No. 445); thence,

North 71°-46'-10" East, along the southerly right of way line of said Route 690, a distance of 17.28 feet to the northwest corner of Proposed Lot 5; thence, the following three courses and distances along said Lot 5:

South 18°-23'-56" East, a distance of 47.11 feet to a point; thence,

North 73°-21'-19" East, a distance of 23.85 feet to a point; thence,

North 18°-23'-47" West, a distance of 47.77 feet to a point on the southerly right of way line of said Route 690; thence,

North 71°-46'-10" East, along said southerly right of way line of Route 690, a distance of 486.65 feet to an angle point; thence,

North 68°-07'-00" East, continuing along said southerly right of way line of Route 690, a distance of 37.53 feet to the northwest corner of proposed Lot 4; thence, the following three courses and distances along said Lot 4:

South 21°-53'-00" East, a distance of 50.84 feet to a point; thence,

North 68°-07'-00" East, a distance of 23.84 feet to a point; thence,

North 21°-53'-00" West, a distance of 50.84 to a point on the southerly right of way line of said NYS Route 690; thence, continuing along said southerly right of way line of Route 690 the following three courses and distances:

North 68°-07'-00" East, a distance of 65.62 feet to an angle point; thence,

North 77°-43'-00" East, a distance of 197.00 feet to a concrete monument; thence,

North 76°-10'-30" East, a distance of 244.30 feet to the northwest corner of proposed Lot 3; thence, the following three courses and distances along said Lot 3:

South 13°-49'-30" East, a distance of 50.50 feet to a point; thence,

North 76°-10'-30" East, a distance of 23.84 feet to a point; thence,

North 13°-49'-30" West, a distance of 50.50 to a point on the southerly right of way line of said NYS Route 690; thence,

North 76°-10'-30" East, along said southerly right of way line of Route 690, a distance of 126.52 feet to a point; thence,

South 13°-49'-30" East, a distance of 656.54 feet to a point on the northerly line of lands now or formerly of the City of Syracuse (Tax Map No. 33.01-1-20); thence,

North 73°-21'-19" East, on said northerly line, a distance of 996.00 feet to a point on the easterly line of said property of the City of Syracuse; thence,

South 04°-09'-10" East, a distance of 39.81 feet to a point on the northerly line of lands now or formerly of New York Central Lines, LLC; thence,

South 73°-21'-19" West, on said northerly line, a distance of 2356.10 feet to a point on the easterly right of way line of South Midler Avenue; thence,

North 00°-23'-35" West, on said easterly right of way line, a distance of 31.20 feet to a concrete monument; thence,

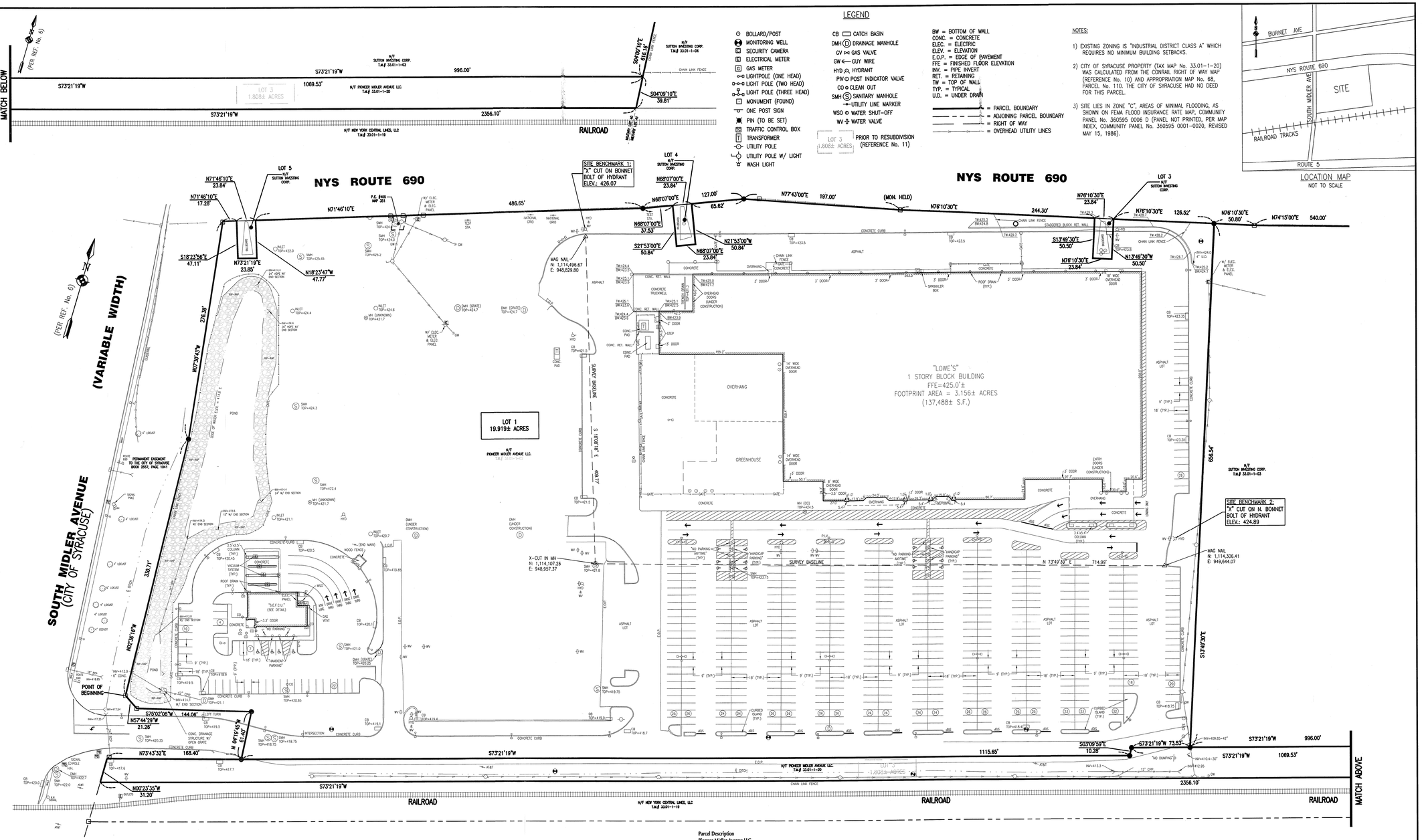
North 73°-43'-32" East, a distance of 168.40 feet to a point; thence,

North 04°-19'-45" West, a distance of 61.40 feet to the northeast corner of aforesaid appropriation to the State of New York (Map No. 66, Parcel No. 107) ; thence, the following two (2) courses and distances on said appropriation:

South 75°-02'-08" West, a distance of 144.06 feet to a concrete monument; thence,

North 57°-44'-29" West, a distance of 21.26 feet to the Point of Beginning.

Said parcel containing 21.727 acres, more or less, shown on a map prepared by Bergmann Associates entitled "ALTA/ACSM Land Title Survey – Proposed Retail Development, Midler Avenue, Syracuse, New York", dated August 13, 2004, last revised on August 22, 2005.



REFERENCES:

1) DEED FILED IN THE ONONDAGA COUNTY CLERKS OFFICE DATED JUNE 2, 1961. BOOK 2046, PAGE 402 OF DEEDS.
2) APPROPRIATION MAP No. 66, PARCEL No's 106, 107, 108, AND 118, TITLED "SOUTH MIDLER AVENUE BRIDGE REMOVAL, CITY OF SYRACUSE–B.I.N. 2208650," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
3) APPROPRIATION MAP No. 68, PARCEL No. 110, TITLED "SOUTH MIDLER AVENUE BRIDGE REMOVAL, CITY OF SYRACUSE–B.I.N. 2208650," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
4) APPROPRIATION MAP No. 71, PARCEL No's 115 AND 116, TITLED "SOUTH MIDLER AVENUE BRIDGE REMOVAL, CITY OF SYRACUSE–B.I.N. 2208650," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
5) APPROPRIATION MAP No. 67, PARCEL No 109, TITLED "SOUTH MIDLER AVENUE BRIDGE REMOVAL, CITY OF SYRACUSE–B.I.N. 2208650," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
6) APPROPRIATION MAP No. 354, PARCEL No's 448, 449, 450, AND 451, TITLED "INTERSTATE ROUTE 570–1–4.0, FORMAN AVENUE TO ERICKSON STREET, CITY OF SYRACUSE," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
7) APPROPRIATION MAP No. 351, PARCEL No's 445 AND 455, TITLED "INTERSTATE ROUTE 570–1–4.0, FORMAN AVENUE TO ERICKSON STREET, CITY OF SYRACUSE," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
8) APPROPRIATION MAP No. 529, PARCEL No 631, TITLED "INTERSTATE ROUTE CONNECTION No 570–1–4.1, ERICKSON STREET TO CITY LINE," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
9) APPROPRIATION MAP No. 3–C, PARCEL No 664, TITLED "INTERSTATE ROUTE CONNECTION No 570–1–4.1, ERICKSON STREET TO CITY LINE," TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION, REGION 3, SYRACUSE, NY.
10) CONRAIL RIGHT OF WAY MAP V73/6 (FORMERLY NEW YORK CENTRAL RAILROAD,) DATED 5/5/92.
11) "RESUBDIVISION OF THE PIONEER MIDLER AVENUE SUBDIVISION, KNOWN AS 101–153 SIMON DRIVE", PREPARED BY BERGMANN ASSOCIATES, LAST REVISED 11/22/06 AND FILED IN THE ONANDAGA COUNTY CLERK'S OFFICE AS MAP No. 10571.

Parcel Description
Pioneer Midler Avenue LLC
Syracuse, NY

All that tract or parcel of land situate in the City of Syracuse, Onondaga County, State of New York, being part of Military Lot Number 40 of the former Town of Dewitt, bounded and described as follows:

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North 71°-46'-10" East, along the southerly right of way line of said Route 690, a distance of 17.28 feet to the northwest corner of Proposed Lot 5; thence, the following three courses and distances along said Lot 5:
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North 73°-21'-19" East, a distance of 23.85 feet to a point; thence,
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North 73°-21'-19" East, on said northerly line, a distance of 996.00 feet to a point on the easterly line of said property of the City of Syracuse; thence,
South 04°-09'-10" East, a distance of 39.81 feet to a point on the northerly line of lands now or formerly of New York Central Lines, LLC; thence,
South 73°-21'-19" West, on said northerly line, a distance of 2356.10 feet to a point on the easterly right of way line of South Midler Avenue; thence,
North 00°-23'-35" West, on said easterly right of way line, a distance of 31.20 feet to a concrete monument; thence,
North 73°-43'-32" East, a distance of 168.40 feet to a point; thence,
North 04°-19'-45" West, a distance of 61.40 feet to the northeast corner of aforesaid appropriation to the State of New York (Map No. 66, Parcel No. 107) ; thence, the following two (2) courses and distances on said appropriation:
South 75°-02'-08" West, a distance of 144.06 feet to a concrete monument; thence,
North 57°-44'-29" West, a distance of 21.26 feet to the Point of Beginning.

Said parcel containing 21.727 acres, more or less.

THE UNDERSIGNED HEREBY CERTIFIES TO

(1) PIONEER MIDLER AVENUE, LLC;

THAT THIS SURVEY WAS ACTUALLY MADE UPON THE GROUND; THAT IT AND THE INFORMATION, COURSES, ANGLES AND DISTANCES SHOWN THEREON ARE CORRECT; THAT THIS SURVEY CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS ON THE PREMISES, INCLUDING, WITHOUT LIMITAION, ALL STREETS, EASEMENTS, RIGHTS–OF–WAY AND UTILITY LINES; AND THAT, EXCEPT AS SHOWN, THERE ARE NO (a) EASEMENTS RIGHTS–OF–WAY ACROSS THE PREMISES; (b) PARTY WALLS, (c) ENCROACHMENTS ON ADJOINING PREMISES, STREETS OR ALLEYS OF ANY OF SAID BUILDINGS, STRUCTURES OR IMPROVEMENTS, OR (d) OBSERVABLE ENCROACHMENTS UPON THE PREMISES BY ANY BUILDING, STRUCTURE OR OTHER IMPROVEMENTS SITUATED ON ANY ADJOINING PREMISES; PHYSICAL EVIDENCE OF BOUNDARY LINES ON ALL SIDES OF THE PREMISES IS AS STATED ON THE SURVEY; AND THAT THE IMPROVEMENTS DO NOT VIOLATE ANY SET–BACK OR OTHER BUILDING LINES.

I HEREBY CERTIFY THAT THIS SURVEY HAS BEEN MADE USING THE LATEST RECORDED PLAT OR DEED, THAT THERE ARE NO OBSERVABLE ENCROACHMENTS OTHER THAN THOSE SHOWN, AND THAT THE SURVEY IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

WE, BERGMANN ASSOCIATES, INC., DO HEREBY CERTIFY THAT THIS INSTRUMENT SURVEY MAP WAS MADE FROM THE NOTES OF AN INSTRUMENT SURVEY LAST DATED 12/06/07 AND FROM THE REFERENCES LISTED HEREON.

KEVIN M. SULLIVAN, L.S. No. 049963 — DATE 12/21/07

ASBUILT PARKING CHART

TOTAL AREA SQ. FT.	REQUIRED RATIO	REQUIRED PARKING SPACES	PARKING SPACES PROVIDED
LOWE'S – 137,488	5.5/1,000 s.f.	759	537 (INC. 12 HANDICAP)
S.E.F.C.U. – 2,923	5.5/1,000 s.f.	16	43 (INC. 4 HANDICAP)

PROPOSED RETAIL DEVELOPMENT
621 S. MIDLER AVENUE
SYRACUSE, NY

PIONEER MIDLER AVENUE LLC.
250 SOUTH CLINTON
SYRACUSE, NY 13202

PIONEER COMPANIES

PREPARED BY:

BERGMANN associates
Engineers / Architects / Surveyors

REVISIONS

NO.	DATE	DESCRIPTION	REV.	CK'D
1	12/21/07	ADD SURVEY BASELINE AND BENCHMARKS	CCW	KMS

NOTE:
Unauthorized alteration or addition to this drawing is a violation of the New York State Education Law Article 145, Section 7209.

ALTA/ACSM LAND TITLE ASBUILT SURVEY MAP

STATE OF NEW YORK KEVIN M. SULLIVAN LICENSED LAND SURVEYOR 049963 12/21/07

Project Manager: **K. Sullivan**
Designed by:
Drawn by: **C. Wood**
Checked by: **K. Sullivan**
Date Issued: **December 7, 2007**
Scale: **1" = 60'**
File Name: **I:\dev\pioneer\midler\6197asbuilt .dwg**

ASB-01

Appendix C

Draft COC Fact Sheet

New York State Department of Environmental Conservation

FACT SHEET

Brownfield Cleanup Program

Midler City Industrial Park Site
Site Number C734103
Syracuse, NY

December 2007

NYSDEC Certifies Remediation Requirements Achieved at Brownfield Site

The New York State Department of Environmental Conservation (NYSDEC) has determined that Pioneer Midler Avenue, LLC will achieve remediation requirements to address contamination related to Midler City Industrial Park Site located at 621 South Midler Avenue in the City of Syracuse, Onondaga County under New York's Brownfield Cleanup Program (BCP). See map for the location of the site. NYSDEC has issued a Certificate of Completion to Pioneer Midler Avenue, LLC regarding Midler City Industrial Park Site. A copy of the Certificate of Completion is available at the document repository identified in this fact sheet.

NYSDEC previously accepted an application submitted by Pioneer Midler Avenue, LLC to participate in the BCP. The site will be used for commercial purposes.

Certificate of Completion
The Certificate of Completion issued by NYSDEC contains:

1) a description of the remedial activities completed;
2) a certification that remediation requirements have been or will be achieved;
3) the boundaries of the site;
4) a description of any institutional/engineering controls to be used. An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction, when the remedial action leaves residual contamination that makes the site suitable for some, but not all uses. An *engineering control* is a physical barrier or method to manage contamination such as a cap or vapor barrier;
5) a certification that an operation, monitoring and maintenance plan for any engineering controls used at the site has been approved by NYSDEC.

Brownfield Cleanup Program: New York's Brownfield Cleanup Program (BCP) encourages the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and redeveloped. These uses include recreation, housing and business.

A **brownfield** is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination.

For more information about the BCP, visit:
www.dec.state.ny.us/website/der/bcp

"Remedial activities" and *"remediation"* refer to all necessary actions to address any known or suspected contamination associated with a site.

RI activities were conducted from November 2004 through April 2006. These activities included soil borings, monitoring well installations, test pit excavations, and sampling of soil, groundwater, soil gas and utility area sediments/liquids.
`

An Interim Remedial Measure (IRM) of limited excavation and in-situ thermal treatment was conducted at the site from November 2006

through September 2007. The IRM was conducted to remove chlorinated volatile organic compound (VOC) contamination from four source areas identified during the RI. The technology adopted to remove contamination was in-situ thermal desorption (ISTD). The ISTD technology uses heat applied to the soil through heating elements to vaporize water and contaminants. The extent of contamination impacts at the site was significantly altered by the year-long IRM. A total of more than 43 tons of soil was treated during the IRM, resulting in approximately 99.9% destruction of contaminants from within three source areas.

The site remedy includes monitoring the groundwater at the site to assess the continuing biodegradation of contaminants and restrictions on site excavations and groundwater use at the site. A Site Management Plan was approved in December 2007 which includes an Engineering and Institutional Control Plan, a Monitoring Plan, and an Operation and Maintenance Plan. These plans provide a detailed description of all procedures required to manage residual contamination at the Site following completion of the remedy.

The institutional controls and engineering controls for the Midler site are described below:

Site Specific Engineering Controls
Sub-slab depressurization systems (SSDSs) - SSDSs will be installed and maintained on all existing and all future buildings on the Site to ensure proper air quality w/in the structures.

Paved and concrete surfaces - To the extent reasonable, all surfaces outside of the building footprints are to be paved or covered with conventional asphalt or concrete.

Clean Backfill - Clean crushed limestone backfill has been placed across the Site and will be maintained such that a minimum of one foot of material remains to avoid direct contact with pre-existing urban fill material and native soils.

Site Specific Institutional Controls
Annual Certification - As required by ECL 27-1415 and the Brownfield Cleanup Agreement for the site, Pioneer will submit an annual certification that the aforementioned Engineering Controls are in operation and working effectively to the NYSDEC.

Environmental Easement - Pioneer will grant the NYSDEC an environmental easement for the Site to ensure that use restrictions or engineering controls remain in place and will be binding on future owners and lessees.

Groundwater Use Restriction - The use or discharge of untreated groundwater for any purpose will not be permitted at the Site.

Soil Management Plan - A site specific soil management plan will be implemented at this Site.

Next Steps
NYSDEC issued the Certificate of Completion based on review and approval of a Final Engineering Plan (FER) submitted by Pioneer Midler Avenue, LLC. The FER described the remedial activities completed and certified that remediation requirements have been achieved for the site.

With its receipt of a Certificate of Completion, Pioneer Midler Avenue, LLC is eligible to redevelop the site. In addition, Pioneer Midler Avenue, LLC:

- has no liability to the State for contamination at or coming from the site, subject to certain conditions; and
- is eligible for tax credits to offset the costs of performing remedial activities and for redevelopment of the site.

A Certificate of Completion may be modified or revoked if, for example, the applicant does not comply with the terms of its Brownfield Cleanup Agreement with NYSDEC, or if the applicant commits fraud regarding its application or its certification that it has met cleanup levels.

Background
The Site is approximately 21.8 acres in size and is located along the east side of South Midler Avenue in an area that is predominately commercial and industrial. A divided highway, Interstate 690, forms the northern boundary of the Site. Adjoining the east side of the Site is a yard waste composting facility operated by the City of Syracuse Department of Public Works. The southern boundary of the Site is a CSX rail line.

Prior to being acquired by its previous owner (Sutton Investing Corporation) in 1961, the Site was utilized for close to 70 years for various manufacturing purposes by Pierce, Butler & Pierce Manufacturing Company, Pierce Butler Radiator Corporation, Prosperity Company, Inc., and Ward Industries Corporation.

Tetrachloroethene (PCE) and trichloroethene (TCE) are industrial solvents and are the principal chemicals affecting soil and groundwater at the site. Since the site has not been used for manufacturing for several decades, and based on the manufacturing history at the site, the PCE is most likely from spills of the solvent that occurred many decades ago. The presence of TCE could be from breakdown of the PCE or from spillage of the solvent itself.

FOR MORE INFORMATION

Document Repository
A local document repository has been established at the following location to help the public to review important project documents. These documents include the Certificate of Completion and the application to participate in the BCP accepted by NYSDEC:

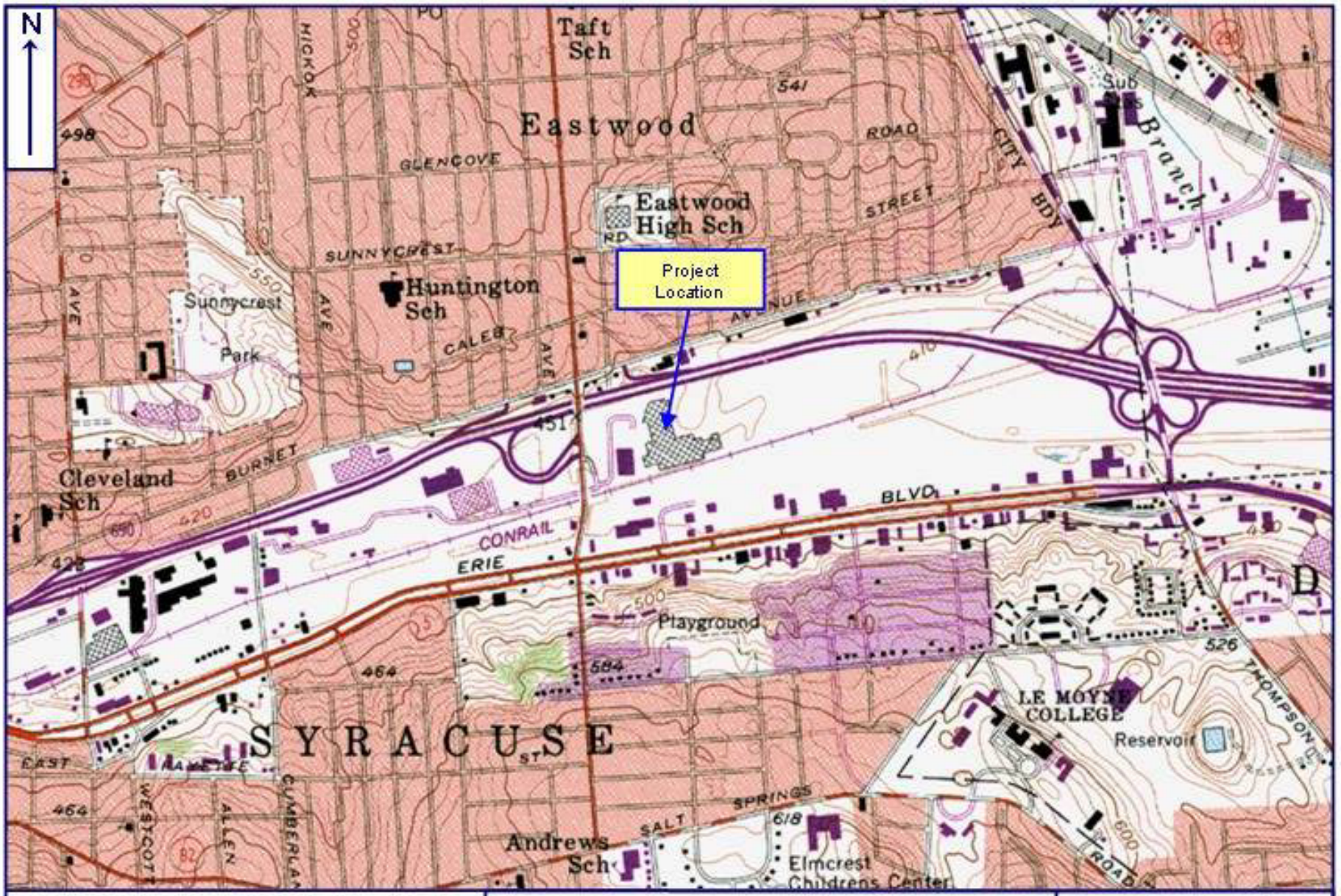
City of Syracuse
Department of Community Development
Division of Code Enforcement
201 E. Washington Street, Room 101
Syracuse, NY 13202
accessible to the public Monday –Friday 8:00 am – 4:00 pm

Who to Contact
Comments and questions are always welcome and should be directed as follows:

<u>Project Related Questions</u>
Karen A. Cahill
New York State Department of Environmental Conservation
615 Erie Boulevard West
Syracuse, New York 13204-2400
315-426-7432

<u>Health Related Questions</u>
Henriette M. Hamel
New York State Department of Health
217 South Salina Street, 3rd Floor
Syracuse, New York 13202
315-477-8154

If you know someone who would like to be added to the project mailing list, have them contact the NYSDEC project manager above. We encourage you to share this fact sheet with neighbors and tenants, and/or post this fact sheet in a prominent area of your building for others to see.



Source: USGS Topographic Maps (Terrain Navigator)
Syracuse East, NY

Figure 1
Site Location Map
Pioneer Milder LLC Brownfield Project
City of Syracuse, Onondaga County, New York

C&S COMPANIES
ENGINEERS
DESIGN BUILD
TECHNICAL RESOURCES
OPERATIONS

Appendix D

Environmental Easement

County: Onondaga Site No.C734103 BCA No. B7-0679-04-1 1

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

THIS INDENTURE made this 17th day of December, 2007, between Owner(s) Pioneer Midler Avenue, LLC residing at (or having an office at) 250 South Clinton Street, Syracuse, New York 13202 (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

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

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

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

WHEREAS, Grantor, is the owner of real property located at the address of 621 and 629 S. Midler Avenue in the City of Syracuse, Onondaga County, New York known and designated on the tax map of the City of Syracuse as tax map parcel number section 33.01 block 1 lot 02 and section 33.01 block 1 lot19 being the same as that property conveyed to Grantor by deed from Sutton Investing Corp. on August 31, 2005 , and recorded in the Land Records of the Onondaga County Clerk in liber 4902 of deeds at page 033, and by deed from Pioneer Realty Company, Inc. on August 31, 2005 and recorded in the land records of the Onondaga County Clerk in liber 4902 of deeds at page 029, comprised of approximately 21.8 acres, and hereinafter more fully described in Schedule A attached hereto and made a part hereof (the " Controlled Property"); and;

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

NOW THEREFORE, in consideration of the covenants and mutual promises contained herein and the terms and conditions of Brownfield Cleanup Agreement Number B7-0679-04-11,

Grantor grants, conveys and releases to Grantee a permanent Environmental Easement pursuant to Article 71, Title 36 of the ECL in, on, over, under, and upon the Controlled Property as more

fully described herein ("Environmental Easement").

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

2. Institutional and Engineering Controls. The following controls apply to the use of the Controlled Property, run with the land are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees, and any person using the Controlled Property.

A. The Controlled Property may be used for commercial or industrial use as long as the following long-term engineering controls are employed:

(i) compliance with the Department-approved Site Management Plan ("SMP") for the implemented remedy until the remedial goals for the Controlled Property are attained or deemed complete by the Department;

(ii) maintenance at a minimum of a one foot cover system or a six inch pavement system or buildings over the Site and any disturbance of or excavation from the Site cover system at depths greater than the one foot shall be done in accordance of the requirements of the SMP;

(iii) the groundwater beneath the Controlled Property cannot be used as a potable water source or for any other use without prior written permission of the Department and the pumping and discharge of groundwater to the waters of the State shall not be allowed without appropriate treatment and approval of the governing State, County or Municipal authority;

(iv) continued groundwater monitoring in accordance with the SMP until the Department determines that such monitoring is unnecessary;

(v) installation and maintenance in accordance with the standards and procedures specified in the SMP of subslab depressurization ("SSD") systems for all buildings and building additions to be constructed on the Site and the continued operation and maintenance in accordance with the SMP of those SSD systems already installed on the Site;

The Grantor hereby acknowledges receipt of a copy of the NYSDEC-approved Site Management Plan, dated December 2007. The SMP describes obligations that Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system on the Controlled Property, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. Upon notice of not less than thirty (30) days the Department in exercise of its discretion and consistent with applicable law may revise the SMP.

The notice shall be a final agency determination. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Regional Remediation Engineer:
Region 7
New York State Department of Environmental Conservation
615 Erie Blvd. West
Syracuse, New York 13204-2400

or:

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

B. The Controlled Property may not be used for a higher level of use such as unrestricted or restricted residential or residential use and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

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

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

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

E. Grantor covenants and agrees that it shall annually, or such time as NYSDEC may allow, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury that the controls employed at the Controlled Property are unchanged from the previous certification or that any changes to the controls employed at the Controlled Property were approved by the NYSDEC, and that nothing has occurred that would impair the ability of such control to protect the public health and environment or constitute a violation or failure to comply with any Site Management Plan for such controls and giving access to such Controlled Property to evaluate continued maintenance of such controls.

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

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

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

2. The right to give, sell, assign, or otherwise transfer the underlying fee interest to the Controlled Property by operation of law, by deed, or by indenture, subject and subordinate to this Environmental Easement;

5. Enforcement

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

B. If any person intentionally violates this Environmental Easement, the Grantee may revoke the Certificate of Completion provided under ECL Article 27, Title 14, or Article 56, Title 5 with respect to the Controlled Property.

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

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar its enforcement rights in the event of a subsequent breach of or noncompliance with any of the terms of this Environmental Easement.

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

County, NYSDEC Site Number, NYSDEC Contract, BCA or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Environmental Easement Attorney
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-1500

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

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

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

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

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

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

Pioneer-Midler Avenue, LLC

By: _____
Dale L. Van Epps
Title: Executive Committee Member
Date: December 17, 2007

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

by: _____
Alexander B. Grannis, Commissioner

Grantor's Acknowledgment

STATE OF NEW YORK)
)
COUNTY OF ONONDAGA)

On the 17TH day of December, in the year 2007, before me, the undersigned, personally appeared Dale L. Van Epps, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public

MARY E. CERIO
Notary Public, State of New York
Registered in Onondaga County
No. 4996808
Commission Expires 05/26/10

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF)

On the 21 day of Dec, in the year 2007, before me, the undersigned, personally appeared ALEXANDER B. GRANNIS, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity as Commissioner of the State of New York Department of Environmental Conservation, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

Notary Public - State of New York

SCOTT OWENS
Notary Public, State of New York
No. 01OW6166972
Qualified in Albany County
Commission Expires April 12, 2008

Parcel Description
Pioneer Midler Avenue LLC
Syracuse, NY

All that tract or parcel of land situate in the City of Syracuse, Onondaga County, State of New York, being part of Military Lot Number 40 of the former Town of Dewitt, bounded and described as follows:

Beginning at a concrete monument on the easterly right of way line of South Midler Avenue as appropriated to the State of New York (Map No. 66, Parcel No. 106 & 107); thence, along the easterly line of said appropriated Parcel No. 106 the following two courses and distances:

North 02°-36'-16" West, a distance of 330.71 feet to a point; thence,

North 07°-30'-43" West, a distance of 276.38 feet to a concrete monument on the southerly right of way line of New York State Route 690 (as appropriated to the State of New York - Map No. 354, Parcel No. 450 & 451; and Map No. 351, Parcel No. 445); thence,

North 71°-46'-10" East, along the southerly right of way line of said Route 690, a distance of 17.28 feet to the northwest corner of Proposed Lot 5; thence, the following three courses and distances along said Lot 5:

South 18°-23'-56" East, a distance of 47.11 feet to a point; thence,

North 73°-21'-19" East, a distance of 23.85 feet to a point; thence,

North 18°-23'-47" West, a distance of 47.77 feet to a point on the southerly right of way line of said Route 690; thence,

North 71°-46'-10" East, along said southerly right of way line of Route 690, a distance of 486.65 feet to an angle point; thence,

North 68°-07'-00" East, continuing along said southerly right of way line of Route 690, a distance of 37.53 feet to the northwest corner of proposed Lot 4; thence, the following three courses and distances along said Lot 4:

South 21°-53'-00" East, a distance of 50.84 feet to a point; thence,

North 68°-07'-00" East, a distance of 23.84 feet to a point; thence,

North 21°-53'-00" West, a distance of 50.84 to a point on the southerly right of way line of said NYS Route 690; thence, continuing along said southerly right of way line of Route 690 the following three courses and distances:

North 68°-07'-00" East, a distance of 65.62 feet to an angle point; thence,

North 77°-43'-00" East, a distance of 197.00 feet to a concrete monument; thence,

North 76°-10'-30" East, a distance of 244.30 feet to the northwest corner of proposed Lot 3; thence, the following three courses and distances along said Lot 3:

South 13°-49'-30" East, a distance of 50.50 feet to a point; thence,

North 76°-10'-30" East, a distance of 23.84 feet to a point; thence,

North 13°-49'-30" West, a distance of 50.50 to a point on the southerly right of way line of said NYS Route 690; thence,

North 76°-10'-30" East, along said southerly right of way line of Route 690, a distance of 126.52 feet to a point; thence,

South 13°-49'-30" East, a distance of 656.54 feet to a point on the northerly line of lands now or formerly of the City of Syracuse (Tax Map No. 33.01-1-20); thence,

North 73°-21'-19" East, on said northerly line, a distance of 996.00 feet to a point on the easterly line of said property of the City of Syracuse; thence,

South 04°-09'-10" East, a distance of 39.81 feet to a point on the northerly line of lands now or formerly of New York Central Lines, LLC; thence,

South 73°-21'-19" West, on said northerly line, a distance of 2356.10 feet to a point on the easterly right of way line of South Midler Avenue; thence,

North 00°-23'-35" West, on said easterly right of way line, a distance of 31.20 feet to a concrete monument; thence,

North 73°-43'-32" East, a distance of 168.40 feet to a point; thence,

North 04°-19'-45" West, a distance of 61.40 feet to the northeast corner of aforesaid appropriation to the State of New York (Map No. 66, Parcel No. 107) ; thence, the following two (2) courses and distances on said appropriation:

South 75°-02'-08" West, a distance of 144.06 feet to a concrete monument; thence,

North 57°-44'-29" West, a distance of 21.26 feet to the Point of Beginning.

Said parcel containing 21.727 acres, more or less, shown on a map prepared by Bergmann Associates entitled "ALTA/ACSM Land Title Survey - Proposed Retail Development, Midler Avenue, Syracuse, New York", dated August 13, 2004, last revised on August 22, 2005.

F:\ADMIN\Dev\STAFF\Sullivan\docs\Midler desc overal 8-21-05.doc

Appendix E
SSDS Drawings

GENERAL NOTES

1. PROVIDE ALL MATERIALS, EQUIPMENT, AND LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED BY ALL APPLICABLE CODES AND REGULATIONS.
2. CONTRACT DOCUMENT DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
3. INSTALL ALL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND ALL APPLICABLE CODES AND REGULATIONS.
4. COORDINATE CONSTRUCTION OF ALL WORK WITH ARCHITECTURAL, HVAC, ELECTRICAL, AND PLUMBING WORK, SHOWN ON OTHER CONTRACT DRAWINGS.
5. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
6. PROVIDE ALL REQUIRED CONTROL WIRING AND CONDUIT, INSTALL IN ACCORDANCE WITH NATIONAL ELECTRIC CODE, ELECTRICAL CODE OF NEW YORK STATE, AND ALL APPLICABLE CODES AND REGULATIONS.
7. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL PIPING DIMENSIONS BEFORE FABRICATION.
8. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS, THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS, ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS SHALL BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
9. ALL PIPING SHALL BE SUPPORTED AS SPECIFIED, AND AS REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
10. ALL PIPING SUPPORTED FROM STRUCTURE SHALL BE COORDINATED WITH GENERAL CONTRACTOR.
11. ALL PIPING WORK SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST.
12. LOCATIONS AND SIZES OF ALL FLOOR, AND WALL OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES.
13. ALL OPENINGS IN FIRE WALLS FOR PIPING SHALL BE FIRESTOPPED.
14. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
15. ALL PIPING SHALL BE INSTALLED TO CLEAR DOORS AND WINDOWS.
16. ALL WORK SHALL CONFORM TO ALL APPLICABLE RULES, REGULATIONS, CODES AND STANDARDS, INCLUDING, BUT NOT LIMITED TO BUILDING CODE OF NEW YORK STATE, NFPA, FEDERAL, STATE, NYSDEC, COUNTY, AND CITY ORDINANCES, CODES, LAWS AND REGULATIONS.
17. ALL TRADES SHALL APPLY AND PAY FOR ALL NECESSARY PERMITS AND INSPECTIONS REQUIRED AND SUBMIT COPIES OF PERMITS TO THE ENGINEER BEFORE ANY WORK BEGINS.

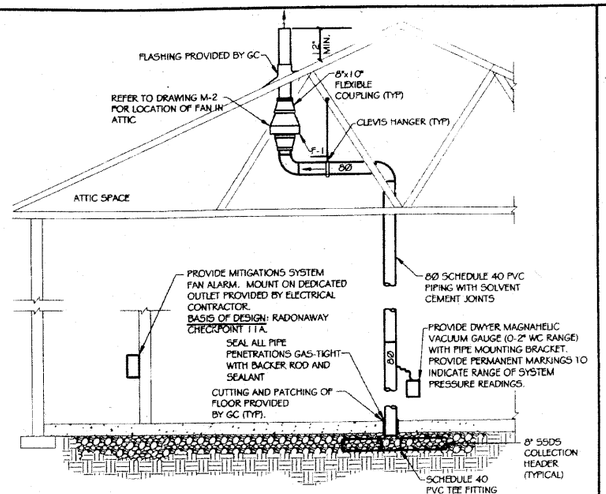
SPECIFICATIONS

SUB-SLAB DEPRESSURIZATION SYSTEM PIPING (ABOVE GRADE)	CELLULAR CORE, ASTM F891 SCHEDULE 40 PVC PIPE, ASTM D 2665, PVC SOCKET FITTINGS, AND SOLVENT-CEMENT JOINTS. INSTALL PVC PIPING ACCORDING TO ASTM D 2665.
SUB-SLAB DEPRESSURIZATION SYSTEM PIPING (BELOW GRADE)	PERFORATED PVC SEWER PIPE AND FITTING: ASTM D3034, SDR 35, BELL - AND - SPIGOT ENDS, FOR GASKETED JOINTS. GASKETS: ASTM F477, ELASTOMERIC SEAL INSTALL PIPING ACCORDING TO ASTM D2321.
PVC PIPE SOLVENT CEMENT	USE PVC SOLVENT CEMENT WITH VOC CONTENT OF 510 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
PVC PIPE ADHESIVE PRIMER	USE ADHESIVE PRIMER WITH VOC CONTENT OF 550 G/L OR LESS WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24).
FIRE STOP SEALANT	PROVIDE FIRE STOPPING AT ALL PIPE PENETRATIONS THROUGH FIRE RATED PARTITIONS AND AT ALL PIPING PENETRATIONS THROUGH FLOORS, WALLS, AND CEILINGS. FIRE STOPPING PUTTY SHALL BE ASBESTOS FREE. BASIS OF DESIGN: FLAME STOP, INC., FLAME STOP V.
PIPING IDENTIFICATION SYSTEMS	SNAP-ON TYPE INDICATING PIPE CONTENTS, ON COLORED BACKGROUND, CONFORMING TO AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) STANDARD A13.1. BASIS OF DESIGN: SETON NAME PLATE COMPANY - SETMARK.
HANGERS & SUPPORTS	
HANGERS:	ADJUSTABLE CLEVIS TYPE, BLACK STEEL CONSTRUCTION. BASIS OF DESIGN: CARPENTER AND PATERSON FIG. 100 TYPE 1.
RISER CLAMPS:	RISER CLAMPS SHALL BE OF STEEL CONSTRUCTION, TWO PIECE TYPE. BASIS OF DESIGN: CARPENTER AND PATERSON FIG. 126. TYPE 42.
HANGER ROD:	HANGER ROD SHALL BE STEEL FULL THREADED TYPE. BASIS OF DESIGN: CARPENTER AND PETERSON FIG. 94 OR MACHINE THREAD EYE ROD FIG 33.
RODS:	ROD DIAMETER = 5/8".
SUBMITTALS	SUBMITTALS ARE REQUIRED FOR ALL MATERIALS AND EQUIPMENT.
O & M MANUALS	SUBMISSION OF O & M MANUALS ARE REQUIRED FOR ALL MATERIALS AND PRODUCTS PRIOR TO COMPLETION OF WORK.
AS-BUILT DRAWINGS	CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS AT END OF OF PROJECT.
SUB-SLAB DEPRESSURIZATION SYSTEM	SYSTEM INSTALLATION SHALL COMPLY WITH UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) RADON MITIGATION STANDARDS PUBLICATION EPA 402-R-94-009-07.5 (LATEST EDITION). SUPPORT HORIZONTAL PIPING WITH CLEVIS HANGERS @ 4'-0" CENTERS. SUPPORT VERTICAL PIPING WITH PIPE RISER CLAMPS AT EACH FLOOR PENETRATION. PITCH HORIZONTAL VENT PIPING AT LEAST 1/16" PER LINEAR FOOT TO FACILITATE CONDENSATE DRAINAGE BACK TO BELOW FLOOR SLAB. ALL ELECTRICAL COMPONENTS OF MITIGATION SYSTEM SHALL BE UL LISTED. PROVIDE ENGRAVED SIGN LOCATED ADJACENT TO ELECTRONIC RADON SENSOR IN WITH THE FOLLOWING DATA: - SYSTEM INSTALLER'S NAME AND TELEPHONE NUMBER. - DATE OF SYSTEM INSTALLATION. - WARNING STATEMENT INDICATING BUILDING SHOULD BE TESTED FOR RADON AT LEAST EVERY 2 YEARS, OR AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. LABEL CIRCUIT BREAKERS SERVING MITIGATION FAN (F-1) AND ELECTRONIC RADON DETECTOR AS "SUB-SLAB DEPRESSURIZATION". LABEL ALL EXPOSED INTERIOR VENT PIPING AS "SUB-SLAB DEPRESSURIZATION SYSTEM". CONTRACTOR SHALL VERIFY INTEGRITY OF FAN MOUNTING SEALS AND EXHAUST PIPE JOINTS UPON COMPLETION OF OF INSTALLATION. CONTRACTOR SHALL PERFORM BACKDRAFT TEST ON NEW FURNACE FLUES IN ACCORDANCE WITH EPA RADON MITIGATION STANDARDS. CONTRACTOR SHALL PERFORM RADON MITIGATION TEST UPON COMPLETION AND ACTIVATION OF RADON MITIGATION SYSTEM INSTALLATION. TEST SHALL BE CONDUCTED NO SOONER THAN 24 HOURS, NOR LATER THAN 30 DAYS, FOLLOWING ACTIVATION OF SYSTEM. REPORT RESULTS OF TEST, IN WRITING, TO PROJECT MANAGER. TESTING DEVICE AND PROTOCOL SHALL BE IN ACCORDANCE WITH EPA RADON MITIGATION STANDARDS.

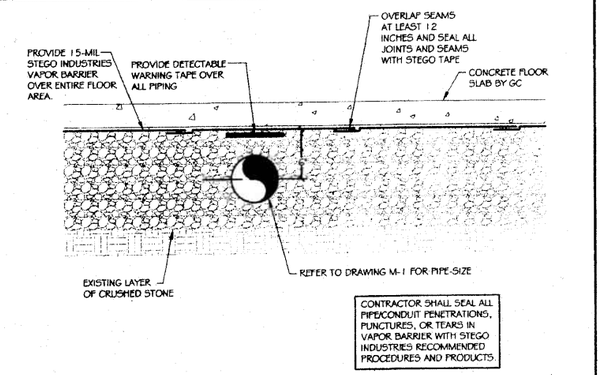
LEGEND

SYMBOL	DESCRIPTION	ABBR.
—SSDS—	SUB-SLAB DEPRESSURIZATION SYSTEM PIPING (BFF)	SSDS
—SSDS—	SUB-SLAB DEPRESSURIZATION SYSTEM PIPING (AFF)	SSDS
—O	PIPE UP	-
G— —G—	PIPE DOWN	-
	VOLATILE ORGANIC COMPOUND	VOC
	ABOVE FINISHED FLOOR / ABOVE FINISHED GRADE	AFF / AFG
	BELOW FINISHED FLOOR / BELOW FINISHED GRADE	BFF / BFG
	NOT TO SCALE	NTS
	MINIMUM	MIN
	INCHES	IN
	WATER COLUMN	WC
	CUBIC FEET PER MINUTE	CFM
	EXTERNAL STATIC PRESSURE	ESP
	FAN	F
	WATTS	W
	REVOLUTIONS PER MINUTE	RPM
	FREQUENCY	FREQ
(#)	KEYED NOTE REFERENCE: REFERS TO CORRESPONDING NUMBER ON RESPECTIVE DRAWING OR DETAIL	-
XX / XXX	PARTIAL PLAN, DETAIL OR SCHEMATIC: LETTER AND/OR NUMBER REFERENCE / DRAWING NUMBER WHERE LOCATED	-
XX / XXX	SECTION OR ELEVATION: LETTER AND/OR NUMBER REFERENCE / DRAWING NUMBER WHERE LOCATED	-

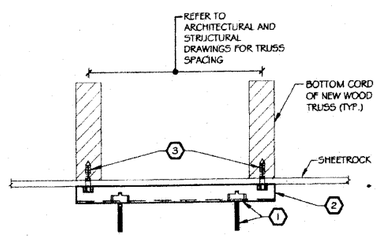
NOTE:
THESE ARE STANDARD SYMBOLS AND ABBREVIATIONS AND MAY NOT APPEAR ON THE PROJECT DRAWINGS. HOWEVER, WHEREVER THE SYMBOL OR ABBREVIATION APPEARS ON THE PROJECT DRAWINGS, THE ITEM SHALL BE FURNISHED AND INSTALLED.



1 RADON GAS EXHAUST DETAIL
NO SCALE

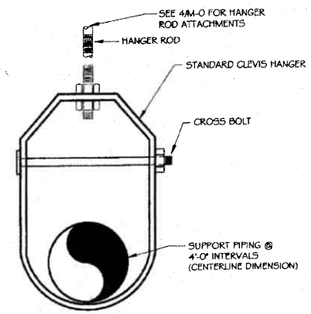


2 SSDS PIPE TRENCH DETAIL
NO SCALE



KEYED NOTES:
1. SPRING NUTS WITH THREADED ROD.
2. 1-5/8"x1-5/8" STRUT.
3. HEX HEAD LAG BOLT.

4 HANGER ROD ATTACHMENT DETAIL
NO SCALE



3 PIPE HANGER DETAIL - UNINSULATED PIPING
NO SCALE

FAN SCHEDULE

UNIT TAG	LOCATION	SERVICE	TYPE	CFM	ESP (IN WC)	DRIVE	MOTOR DATA					BASIS OF DESIGN	NOTES
							W	VOLTAGE	PHASE	FREQ	RPM		
F-1	ATTIC	SUB-SLAB DEPRESSURIZATION SYSTEM	INLINE	403	1.0	DIRECT	241	115	1	60	2850	FANTECH #FR250	A

NOTES:
A. INDICATED WATTAGE IS RATED VALUE.

NEW BRANCH
AT
MIDLER CROSSING
MIDLER AVENUE, CITY OF SYRACUSE
NEW YORK
ONONDAGA COUNTY
OF
SEFCU

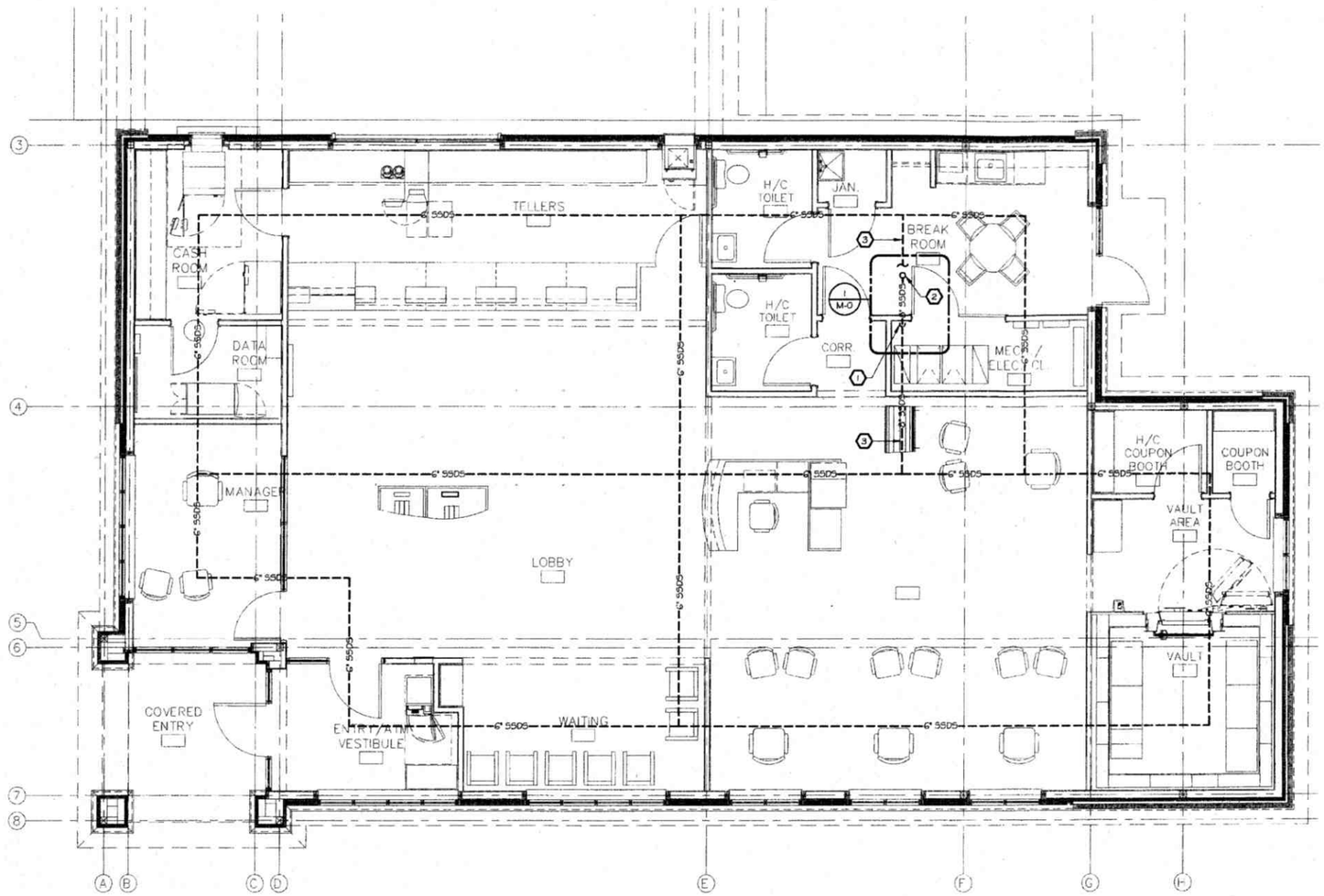
NO.:	REVISION:	DATE:
1		00/00/01
2		/ /
3		/ /
4		/ /
5		/ /
6		/ /

Argus Engineering, PLLC
Hogan Block 251 West Fayette Street Syracuse, NY 13202
Phone: 315-475-6061 Fax: 315-475-6071

SCALE: AS SHOWN | DRAWN / CHECK: EMD/GLL | DATE: 07-10-07

SHEET TITLE:
LEGEND, SCHEDULE, DETAILS & GENERAL NOTES

SHEET NO.:
M-0



PROJECT NORTH

1 SUB-SLAB PIPING PLAN
1/4" = 1'-0"

KEYED NOTES:

1. 6" SCHEDULE 40 PVC SUB-SLAB DEPRESSURIZATION SYSTEM RISER.
2. 6" SSDS PIPING UP. REFER TO DRAWING M-2 FOR CONTINUATION OF PIPING.
3. 6" SSDS COLLECTION HEADER SHALL BE NON-PERFORATED.

GENERAL DRAWING NOTES:

A. CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH CONCRETE FLOOR SLAB AIR-TIGHT WITH STEGO INDUSTRIES PRODUCTS UTILIZED IN ACCORDANCE WITH STEGO INDUSTRIES PROCEDURES AND RECOMMENDATIONS

JUL 10 2007

NEW BRANCH
AT
MIDLER CROSSING
MIDLER AVENUE, CITY OF SYRACUSE
NEW YORK
ONONDAGA COUNTY
OF
SEFCU

NO.	REVISION	DATE
1		00/00/01
2		/ /
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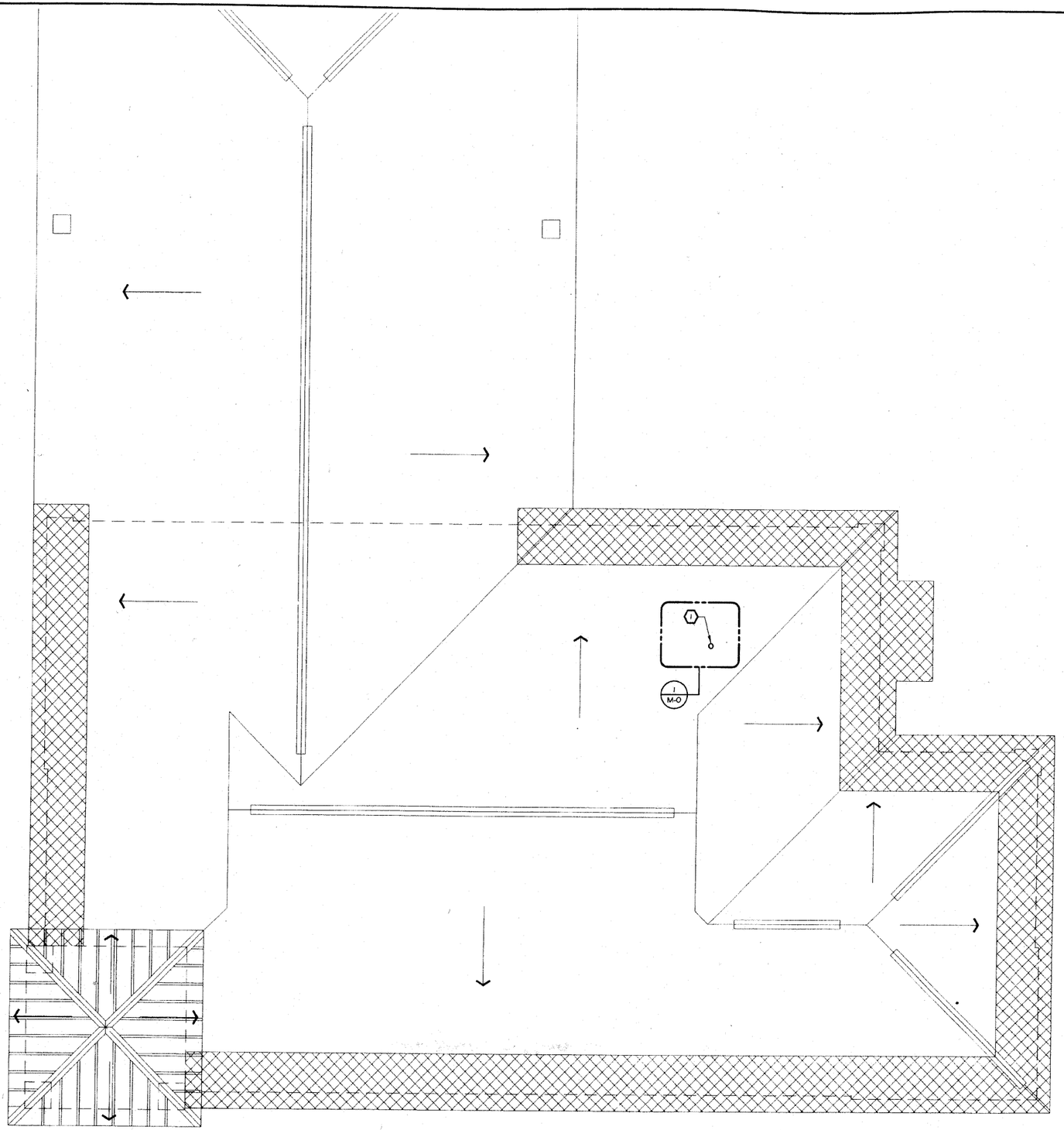
Argus Engineering, P.L.L.C.
Hogan Block 251 West Fayette Street Syracuse, NY 13202
Phone: 315-475-6061 Fax: 315-475-6071

SCALE:	DRWN / CHCK	DATE:
AS SHOWN	EMD/GLL	07-10-07

SHEET TITLE:
SUB-SLAB
PIPING PLAN

SHEET NO.:
M-1



1 PATIAL ROOF PLAN
1/4" = 1'-0"

PROJECT NORTH

KEYED NOTES:

1. TERMINATE 6" SSDS PIPING 12" ABOVE FINISHED ROOF LEVEL.

RECEIVED
JUL 10 2007

NEW BRANCH
AT
MIDLER CROSSING
MIDLER AVENUE, CITY OF SYRACUSE
NEW YORK
ONONDAGA COUNTY
OF
SEFCU

NO.	REVISION:	DATE:
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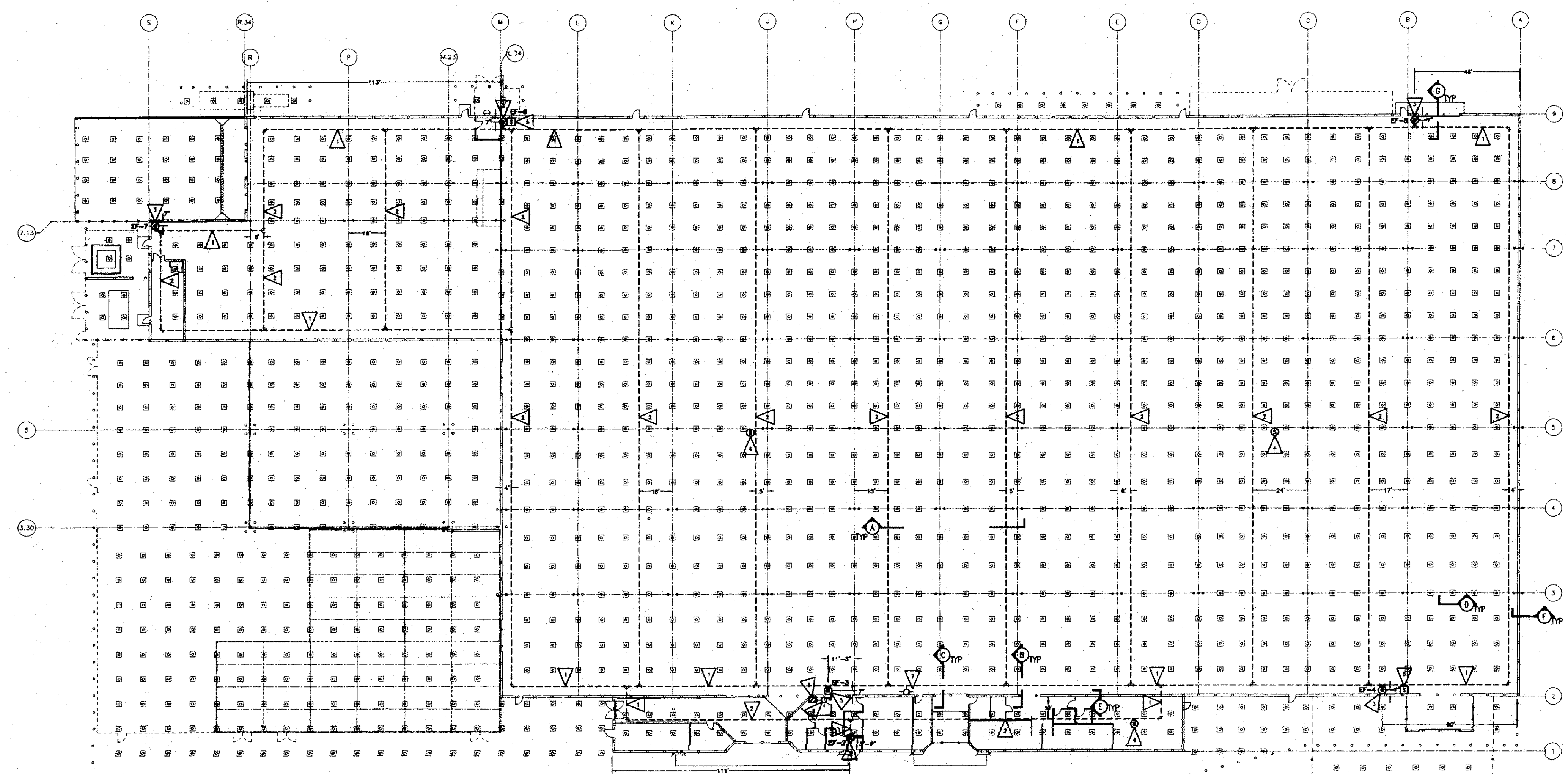
3		/ /
4		/ /
5		/ /
6		/ /

Argus Engineering, PLLC
Hogan Block 251 West Fayette Street Syracuse, NY 13202
Phone: 315-475-6061 Fax: 315-475-6071

SCALE:	DRWN. / CHECK	DATE:
AS SHOWN	EMO/GLL	07-10-07

SHEET TITLE:
ROOF PLAN

SHEET NO.:
M-2

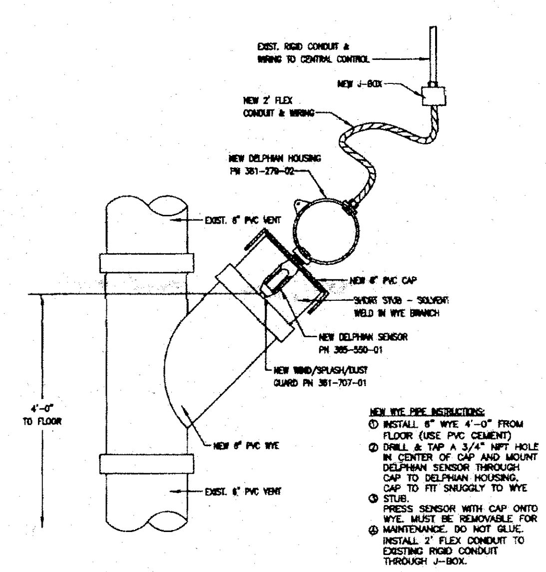


1 SS-1 SUBSLAB VENTILATION PLAN
SCALE 1" = 20'-0"

FLAG NOTES

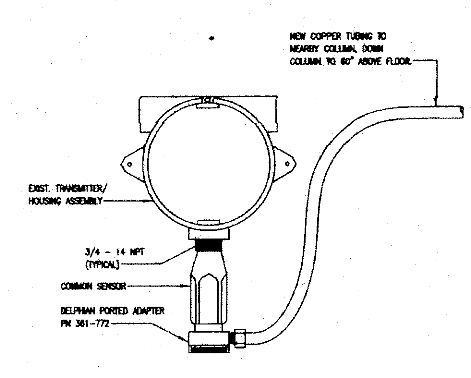
1. 4" Schedule 40 PVC perimeter pipe perimeter.
2. 3" Schedule 40 PVC perforated pipe lateral.
3. 6" Schedule 80 PVC pipe riser with methane gas detector at 24" AB. Floor and Exhaust Fan between bar joists. See Detail 6-6 Sheet SS-2.
4. Ceiling mounted methane gas detector. See Detail 3 this sheet
5. Wall mounted methane gas detector 24" above floor.
6. Control module in NEMA 4X panel on wall at 6'-0" above floor.
7. Horn and Strobe at 15 feet above floor
8. Alarm light

NOTE:
COORDINATE ALL WORK WITH THE FOUNDATION LOCATIONS AND WITH OTHER TRADES.

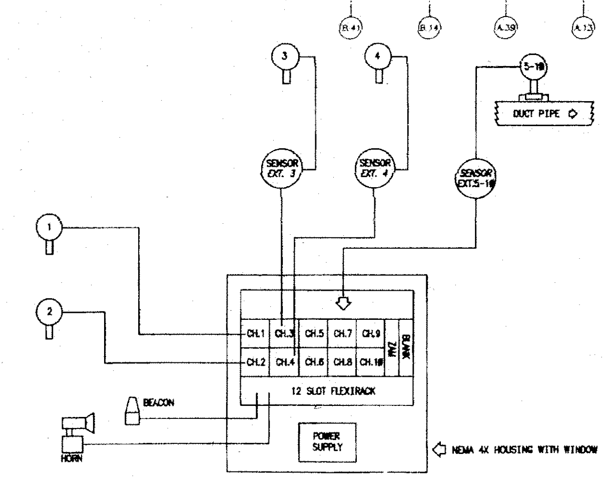


NEW WYE PIPE INSTRUCTIONS:
1. INSTALL 6" WYE 4'-0" FROM FLOOR (USE PVC CEMENT)
2. DRILL & TAP A 3/4" NPT HOLE IN CENTER OF CAP AND MOUNT DELPHIAN SENSOR THROUGH CAP TO DELPHIAN HOUSING. CAP TO FIT SNUGGLY TO WYE STUB. PRESS SENSOR WITH CAP ONTO WYE. MUST BE REMOVABLE FOR MAINTENANCE. DO NOT GLUE.
3. INSTALL 2" FLEX CONDUIT TO EXISTING RIGID CONDUIT THROUGH J-BOX.

2 SS-1 DUCT SENSOR INSTALLATION DETAIL
SCALE NONE



3 SS-1 CEILING MOUNTED DETECTORS IN SALES AREA
SCALE NONE



GAS DETECTION SYSTEM

REVISIONS	
DATE	DESCRIPTION

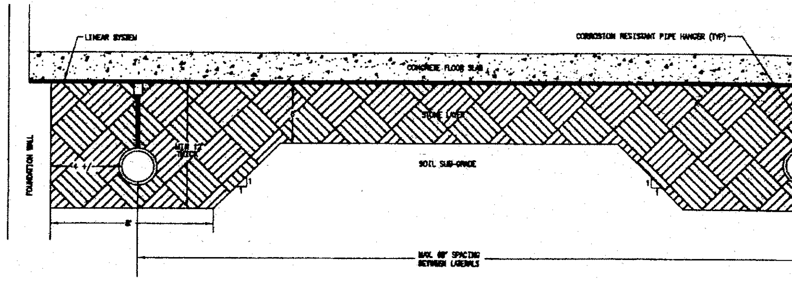
ELECTRO-MECH ENGINEERING, INC.
311 High Street NE
Canal Fulton, Ohio 44614-1158
(330) 854-0347 (voice) (330) 854-0492 (fax)
1-877-277-8848 (toll free)

DeWolff Partnership ARCHITECTS LLP

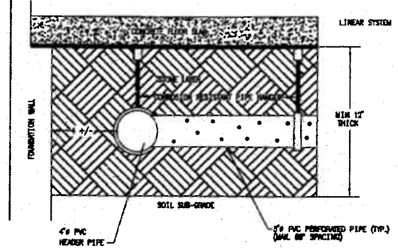
LOWE'S

SUBSLAB VENTILATION PLAN
LOWE'S OF SYRACUSE
SYRACUSE, NEW YORK

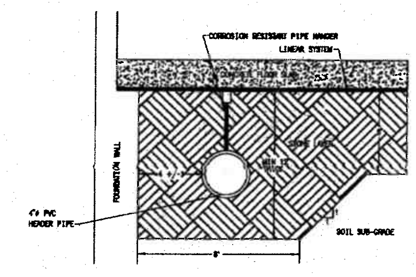
CRITERIA ISSUE DATE: 09.01.06
PERMIT SET ISSUE DATE: 03.16.07
CONSTRUCTION SET ISSUE DATE:
DRAWING NUMBER:



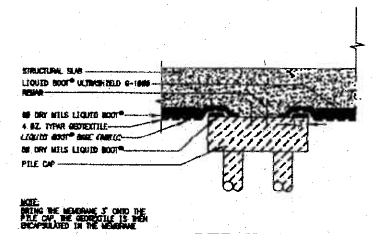
DETAIL A–A
SUB–FLOOR CROSS–SECTION LATERAL PIPES
NOT TO SCALE



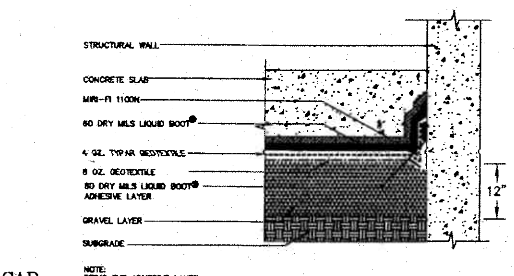
DETAIL B–B
SUB–FLOOR CROSS–SECTION AT INTERSECTIONS OF HEADER PIPE AND LATERALS
NOT TO SCALE



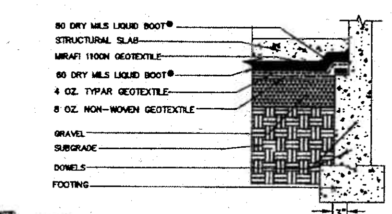
DETAIL C–C
SUB–FLOOR CROSS–SECTION HEADER PIPE LENGTHS BETWEEN INTERSECTIONS WITH LATERAL PIPES
NOT TO SCALE



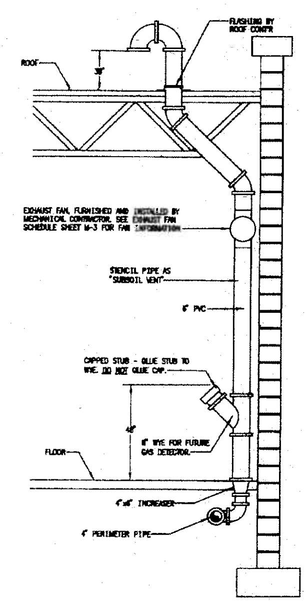
DETAIL D–D
GAS VAPOR BARRIER PILE CAP
NOT TO SCALE



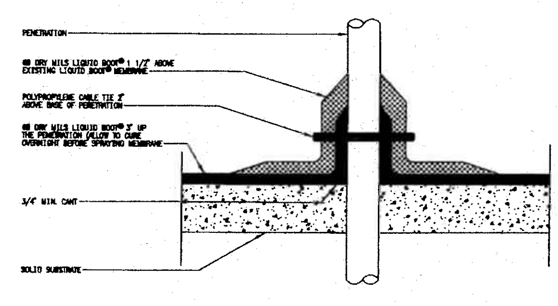
DETAIL E–E
GAS VAPOR BARRIER ATTACHMENT TO WALL
NOT TO SCALE



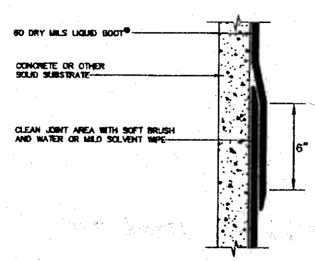
DETAIL F–F
GAS VAPOR BARRIER ATTACHMENT TO FOOTING
NOT TO SCALE



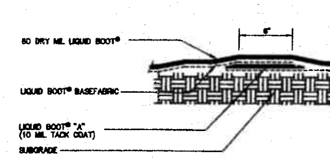
DETAIL G–G
EXHAUST PIPE RISER
NOT TO SCALE



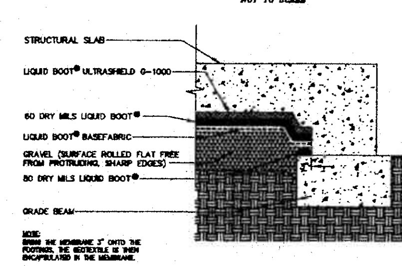
GAS VAPOR BARRIER PENETRATIONS WITH SOLID SUBSTRATE (OPTION 2)
NOT TO SCALE



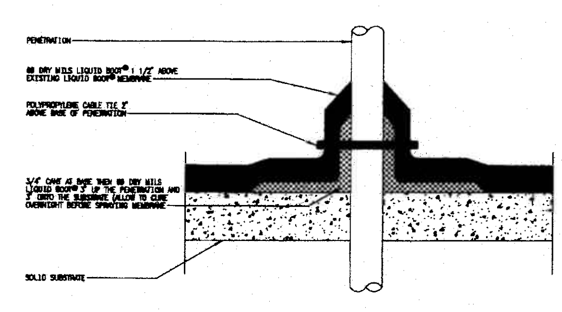
GAS VAPOR BARRIER MEMBRANE LAP JOINTS
NOT TO SCALE



GAS VAPOR BARRIER MEMBRANE LAP JOINTS ON GEOTEXTILE



GAS VAPOR BARRIER OVER FOOTINGS AND GRADE BEAMS



GAS VAPOR BARRIER PENETRATIONS WITH SOLID SUBSTRATE

SPECIFICATION

SUBSLAB SOIL EXHAUST SYSTEM

PART 1 – GENERAL

1.01 DESCRIPTION

A. Work in this section includes:
1. Aggregate
2. Piping Materials
3. Liquid Boot Membrane System

B. Related work not in this section includes Excavation and Backfilling.

1.02 CODES AND PERMITS

C. The installation shall conform to all applicable Codes and Government Regulations.

D. Contractor shall obtain all permits and pay all fees. He shall arrange for all required inspections and obtain all approvals.

1.03 QUALITY ASSURANCE

E. Gas vapor barrier contractor/applicator shall be trained and approved by the g.a vapor barrier manufacturer.

F. All equipment and materials shall be new and free of defects and shall be UL or ETL labeled.

1.04 WARRANTIES: Warrant all materials, equipment and workmanship for one year from date of acceptance.

1.05 PROPOSED SUBSTITUTIONS: Base bid is to be predicated on Liquid Boot membrane system. Any proposed substitutions will be evaluated later. Proposed substitutions will be considered only if there is a cost or time savings that will be beneficial to the owner.

PART 2 – PRODUCTS

2.01 AGGREGATE MATERIAL

G. Stone base layer material shall be washed, clean, dry and free of fines. Material shall conform to the following gradation.

SIEVE SIZE	PERCENT PASSING BY WEIGHT
1–1/2"	100
1"	90–100
1/2"	0–15
#200	0–1.0

2.02 PIPING MATERIALS

H. Pipe shall be schedule 40 PVC with solvent welded joints. Fittings shall be standard manufactured couplings, tees and elbows, ASTM D2665.

I. Collection pipes shall be perforated and header pipes shall be solid, non perforated.

2.03 MEMBRANE SYSTEMS

J. Membrane system shall be Liquid Boot fluid applied gas vapor barrier system as manufactured by LBI Technologies, Inc. at (714) 384–0111.

K. System shall be a single course, high build, polymer modified asphaltic emulsion. Water borne and spray applied at ambient temperatures. A minimum, thickness of 60 dry mils, unless specified otherwise. Material shall be non–toxic and odorless.

L. Protection on vertical surfaces, use: Liquid Boot UltraShield P–100 or other protections as approved by the project architect or engineer.

M. Protection on horizontal surfaces, use: Liquid Boot UltraShield G–1000 or other protections as approved by the project architect or engineer.

N. Adhesive system for Liquid Boot UltraShield: Use Liquid Boot Ultra Grip.

O. Base geotextile – Liquid Boot base fabric T–40 non–woven geotextile, unless otherwise specified and approved by membrane manufacturer. The heat–rolled side shall be used as the application surface.

P. Cold Joints, Cracks, Form Tie Holes: Covered with Hardcast CRT 1602 Tape 3" wide.

PART 3 – EXECUTION

3.01 PIPING INSTALLATION

Q. Install all piping under the floor slab as level as practical. Install offsets as required to clear footings and thickened slabs.

R. Make changes in direction by means of "Y" branches and 1/4, 1/8 or 1/16 bends. Make no unnecessary bends or offsets. Where changes in direction are unavoidable, make with bends of not more than 45 degrees.

S. Support vertical pipes up walls at intervals not exceeding 8–feet.

3.02 MEMBRANE INSTALLATION

T. Job conditions:
4. Protect all adjacent areas not to receive gas vapor barrier. Where necessary, apply masking to prevent staining of surfaces to remain exposed wherever membrane abuts to other finish surfaces.
5. Perform work only when existing and forecasted weather conditions are within manufacturer's recommendations for the material and product used.
6. Minimum clearance of required for application of product:
a. 90 degree spray wand – 2 feet.
b. Conventional spray wand – 4 feet.
7. Ambient temperature shall be within manufacturer's specifications. (Greater than 45 degrees F and rising.)
8. All plumbing, electrical, mechanical and structural items to be under or passing through the gas vapor barrier shall be positively secured in their proper positions and appropriately protected prior to membrane application.
9. Gas vapor barrier shall be installed before placement of reinforcing steel.
10. Expansion joints must be filled with a conventional expansion joint material.
11. Surface preparation shall be per manufacturer's specification.

U. All surfaces to receive gas vapor barrier shall be inspected and approved by the applicator at least one day prior to commencing work.

V. Dirt and gravel preparation: The subgrade shall be moisture conditioned and compacted to a minimum relative compaction of 90 percent or as specified by civil/geotechnical engineer. The finished surface shall be smooth, uniform, free of debris and standing water. Remove all stones or dirt clods greater than 1/4 inch. (NOTE: Aggregate sub–bases shall be rolled flat.) All penetrations shall be prepared in accordance with manufacturer's specifications. All form stakes that penetrate the membrane shall be of rebar which shall be bent over and left in the slab.
12. Trenches shall be cut oversize to accommodate gas vapor barrier membrane and protection course with perpendicular to sloped sides and maximum obtainable compaction. Adjoining grade shall be finish graded and compacted. Excavated walls shall be vertical or sloped back, free of roots and protruding rocks. Specific sub–grade preparation shall be as specified by the structural/civil engineers.
13. If organic materials with potential for growth (ie: seeds or grasses) exist within the subbase, spray apply soil sterilant at the sterilant manufacturer's recommended rate.

W. Installation on Dirt Surfaces and Gravel:
14. Roll out geotextile on subgrade with the heat rolled side facing up. Overlap seams a minimum of six inches (6"). Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of Liquid Boot "A" side without catalyst within the seam overlap. Line trenches with geotextile extending at least six inches (6") onto adjoining subgrade if slab and footings are to be sprayed separately. Overlap seams a minimum of six inches (6"). Lay geotextile tight at all inside corners. Apply a thin (10mil) tack coat of Liquid Boot "A" side without catalyst within the seam overlap.
15. Minimize the use of nails to secure the geotextile to the dirt subgrade. Remove all nails before spraying membrane, if possible. Nails that cannot be removed from the dirt subgrade are to be patched with geotextile or Hardcast reinforcing tape overlapping the nail head by a minimum of two inches (2"). Apply a thin tack coat of Liquid Boot under the geotextile patch, when patching with geotextile.
16. Spray apply Liquid Boot onto geotextile to a 60 mil minimum dry thickness. If a second coat is required, remove any standing water from the membrane before proceeding with the second application.
17. Do not penetrate membrane. Keep membrane free of dirt, debris and traffic until protective cover is in place. It is the responsibility of the General Contractor to insure that the membrane and the protection system are not penetrated.
18. After membrane has cured and checked for proper thickness and flaws, install protection material pursuant to manufacturer's instruction.

X. Sealing Around Penetrations: (OPTION 1)
19. Clean all penetrations. All metal penetrations shall be sanded clean with emery cloth.
20. Roll out geotextile on subgrade with the heat rolled side facing up, overlapping seams a minimum of six inches (6"). Cut the geotextile around penetrations so that it lays flat on the subgrade. Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of Liquid Boot "A" side without catalyst within the seam overlap.
21. At the base of penetration install a minimum 3/4 inch thick membrane cant of Liquid Boot, or other suitable material as approved by manufacturer. Extend the membrane at a 60 mil thickness three inches (3") around the base of penetration and up the penetration a minimum of three inches (3"). Allow to cure overnight before the application of Liquid Boot membrane.
22. Spray apply Liquid Boot to a 60 mils minimum dry thickness around the penetration, completely encapsulating the collar assembly and to a height of one and one half inches (1–1/2") minimum above the membrane. Spray apply Liquid Boot to surrounding areas as specified for the particular application.
23. Allow Liquid Boot to cure completely before proceeding to step 6.
24. Wrap penetration with polypropylene cable tie at a point two inches (2") above the base of the penetration. Tighten the cable tie firmly so as to squeeze, but not cut, the cured membrane collar.

Y. Sealing Around Penetrations: (OPTION 2)
25. Clean all penetrations. All metal penetrations shall be sanded clean with emery cloth.
26. Roll out geotextile on subgrade with the heat rolled side facing up, overlapping seams a minimum of six inches (6"). Cut the geotextile around penetrations so that it lays flat on the subgrade. Lay geotextile tight at all inside corners. Apply a thin (10 mil) tack coat of Liquid Boot "A" side without catalyst within the seam overlap.
27. Spray apply Liquid Boot to surrounding areas as specified for the particular application to an 60 mil minimum dry thickness. At the base of penetration install a minimum 3/4 inch thick membrane cant of Liquid Boot, or other suitable material as approved by manufacturer. Extend the membrane at 60 mil thickness up the penetration a minimum of three inches (3"). Allow to cure overnight before proceeding.
28. Spray apply Liquid Boot to the membrane at an 60 mil thickness three inches (3") around the base of penetration and up the penetration, completely encapsulating the collar assembly, to a height of one and one half inches (1–1/2") minimum above the membrane.
29. Allow Liquid Boot to cure completely before proceeding to step 6.
30. Wrap penetration with polypropylene cable tie at a point two inches (2") above the base of the penetration. Tighten the cable tie firmly so as to squeeze, but not cut, the cured membrane collar.

Z. Field Quality Control:
31. The membrane must be cured at least overnight before inspecting for dry thickness, holes, shadow shrinkage and any other membrane damage.
32. When thickness or integrity is in question the membrane should be tested in the proper manner as described below. However, over sampling defeats the intent of inspections. Inspectors should always use visual and tactile measurement to guide them. Areas suspected of being too thin to the touch should be measured with the gauges to determine the exact thickness. With practice and by comparing tactile measurements with those of the gauges, fingers become very accurate tools.
33. On Dirt and Other Soft Substrates: Samples may be cut from the membrane and geotextile sandwich to a maximum area of two square inches. Measure the thickness with a mil reading caliper, per 500 square feet. Deduct the plain geotextile thickness to determine the thickness of Liquid Boot membrane. Mark the test area for repair. Voids left by sampling are to be patched with geotextile overlapping the void by a minimum of two inches (2"). Apply a thin tack coat of Liquid Boot under the geotextile patch. Then spray or trowel apply Liquid Boot to a 60 mils minimum dry thickness, extending at least three inches (3") beyond geotextile patch.

AA. Smoke Test:
34. A smoke test shall be performed by pumping smoke under the membrane to detect holes in the membrane. Test shall be made prior to pouring of the concrete floor slab.
35. Smoke shall be provided by a large volume smoke generator and supplemental centrifugal blower. Smoke shall be introduced into the underslab pipe distribution system at one of the riser pipes. Once smoke is evidenced at each of the other riser pipes, the pipes shall be capped pressurized. The membrane shall be visually examined for any smoke that has penetrated the membrane or around any of the penetrations thru the membrane. [illegible]

REVISIONS

DATE	DESCRIPTION

ELECTRO–MECH ENGINEERING, INC.

DeWolff Partnership ARCHITECTS LLP

LOWE'S

SUBSLAB VENTILATION DETAILS

LOWE'S OF SYRACUSE
SYRACUSE, NEW YORK

CRITERIA ISSUE DATE:	09.01.06
PERMIT SET ISSUE DATE:	03.18.07
CONSTRUCTION SET ISSUE DATE:	
DRAWING NUMBER:	