



**ASTM PHASE I & II ENVIRONMENTAL SITE
ASSESSMENT
25 CUMBERLAND HILL ROAD
WOONSOCKET, RI**

VOLUME I

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Section 1.0

Purpose and Scope of Assessment

On behalf of the City of Woonsocket (City), C&E Engineering Partners, Inc. (C&E) has prepared this Phase I and II Environmental Site Assessment (ESA) for the property identified as Assessor's Plat 41, Lot 1 (Site) in Woonsocket, Rhode Island. The Site is located at 25 Cumberland Hill Road; a Site Locus Map is provided in **Appendix A**. For the purposes of this ESA, only a portion of the Site was assessed. The portion of the lot included in this assessment is identified on the Site Location Plan included in **Appendix B**. The portion of the Site that was assessed is currently a distressed property that has contained a now closed solid waste incinerator for the past 57 years. The remainder of the Site includes the City of Woonsocket's Wastewater Treatment Facility as well as other City facilities that were not included in this assessment.

This ESA has been conducted in general conformance with the American Society for Testing and Materials (ASTM) Document E1527-00 – Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and ASTM Document E1903-11 – Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, as amended. The conclusions provided in this report are based solely upon the scope of work conducted and described herein, and are subject to the limitations provided in Section 6. The purpose of the ESA was to evaluate the Site with respect to the potential presence of "Recognized Environmental Conditions". Per the ASTM Document E 1527-00, "Recognized Environmental Conditions" shall mean the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the Site. Due to the likelihood of the Site being contaminated by activities conducted at the former onsite solid waste incinerator, this project also included Phase II ESA activities. Phase II ESA activities consisted of testing in an attempt to quantify the extent of contamination and the development of a plan of site remediation that will allow the City to initiate activities to remediate the Site and return the property to a useful purpose. Specific elements of the ESA included:

- **Records Review:** Review of historical and regulatory records readily available from state, federal and local agencies as appropriate concerning the Site and nearby properties, in an attempt to ascertain information concerning past and present uses or practices which may reflect Recognized Environmental Conditions at the Site.
- **Site Reconnaissance:** Evaluate the Site for surficial indications of Recognized Environmental Conditions and identify general uses of abutting parcels.
- **Interviews/Inquires:** Interview readily available persons associated with the Site owner relative to Site history and use.
- **Interviews with Local Government Officials:** Collect information and conduct inquires of available local regulatory/licensing agencies regarding the Site.
- **Review of Phase II ESA testing results of onsite building structure components to quantify potential environmental impacts and propose plans of mitigation.**
- **Additional Phase II ESA investigation efforts to quantify the Site including multi-media sampling of soils extensive enough to quantify potential environmental impacts and if necessary, propose plans of mitigation.**

The scope of this ESA included an evaluation and/or identification of onsite building structures for possible asbestos containing building materials (ACBMs). **Appendix C** includes a report titled *Asbestos Inspection Report* dated February 15, 2016 and prepared by Vortex Inc. This report was reviewed to determine the quantities and locations of ACBMs in the onsite building structure and the measures necessary to abate these materials. This ESA did not include an evaluation of onsite building structures for lead based paint. It is important to note that only the portion of the Site containing the incinerator building structure was evaluated for this ESA and all other existing building structures on the Site were not included in this assessment.

Section 2.0 Site Background

This section provides a description of the Site and setting, and historical information pertaining to the Site.

2.1 Site Description

The Site is identified by the City of Woonsocket Tax Assessor's Office as Plat 41, Lot 1. It is located at 25 Cumberland Hill Road, in the City of Woonsocket, Rhode Island. The Site contains approximately 18 acres of industrial property. As previously indicated, this ESA only involves approximately 2.5 acres on the northern portion of the Site which contains a building structure that was formerly utilized as a solid waste incinerator. The remainder of the Site houses the City of Woonsocket's Wastewater Treatment Facility to the south and west of the incinerator building and a City fire station to the north of the incinerator building. There is a treeline that is maintained on the western portion of the Site that serves as a buffer between the Site and the Blackstone River which is located to the west of the Site. The remaining portions of the lot are maintained as paved parking areas. Access to the Site is from a paved driveway from Cumberland Hill Road located to the east of the incinerator building. There are no areas of wetlands on the portion of the Site included in this investigation.

According to the City of Woonsocket Zoning Department, the Site is zoned as "I-1" – Light Industrial District. The Site is abutted to the east by Cumberland Hill Road and residential and commercial properties, to the north by commercial properties and undeveloped woodlands, to the south by undeveloped woodlands and to the west by the Blackstone River.

2.2 Physical Setting

Based on a review of the Site area United States Geological Survey (USGS) Topographic Quadrangle Map (Franklin, Massachusetts – Rhode Island 7.5 minute Quadrangle), the eastern portion of the Site housing the incinerator building is generally flat at an

approximate elevation of 140 feet Mean Sea Level (MSL) and slopes gently towards the western portion of the Site and the Blackstone River to an elevation of approximately 113 feet MSL.

From C&E's review of an online Flood Hazard Map for the Site area obtained from the Federal Emergency Management Agency (FEMA), the Site does not appear to be located within a 100-year flood zone. See **Appendix D**.

Review of the USGS topographic map suggests that regional topography generally slopes downward from east to west. Surface water runoff from the Site appears to flow from east to west towards the western portion of the Site, which abuts the Blackstone River.

Based on a review of a GIS map maintained by the Rhode Island Department of Environmental Management (RIDEM) dated February 2016, the Site is located within a GB groundwater area. The "GB" designation infers that the groundwater is not suitable for drinking water use without treatment. The Site is serviced by municipal water which is supplied by the City of Woonsocket. The Site is also serviced by a public sewer system.

2.3 Site History and Land Use

This section provides information derived through research, inquiries and investigations relative to the Site, pertaining to previous owners and uses of the Site that may reflect potential Recognized Environmental Conditions at the Site.

2.3.1 Current Ownership

According to available records from the Woonsocket Tax Assessor's on-line database, as of February 24, 2016, Assessor's Plat 41, Lot 1 is currently owned by the City of Woonsocket.

2.3.2 Prior Ownership

A chain of title review for the Site was conducted at the Woonsocket City Hall on February 29, 2016 to determine and confirm past owners in an attempt to identify previous uses of the Site.

This property is identified as Assessor's Plat 41, Lot 1 (see **Appendix E**). Land records date back to approximately 1900 when the lot was owned by the City of Woonsocket. The records show that the City of Woonsocket has always maintained ownership of the Site and the Site has never been purchased from or sold to other parties. The entire Site is approximately 17.82 acres and records show that it originally was land containing a fire station for the City of Woonsocket.

To this date, the City of Woonsocket retains ownership of Plat 41, Lot 1. In addition to the original fire station facility, the Site currently contains a former solid waste incinerator building that is the subject of this ESA and 12 other building structures associated with operations of the City's Wastewater Treatment Facility. As indicated previously, this ESA only involved the portion of the Site containing the former solid waste incinerator building structure.

2.3.3 Sanborn Fire Insurance Maps

Copies of available Sanborn Fire Insurance Maps were sought from Environmental Data Resources, Inc. (EDR, see **Appendix F**) in an attempt to determine past uses of the Site. These maps are helpful in that they provide fairly detailed information at a suitable scale, indicating the type, size and use of building structures on a given parcel and on abutting parcels. Sanborn Maps from 1911 to 1970 were available for the area of the Site.

The Sanborn Maps from 1911 to 1970 indicate that the Site property was not mapped.

2.3.4 Tax Assessor's Field Cards

Available field cards for the Site were viewed at the Woonsocket City Hall, Tax Assessor's office on February 29, 2016.

The field card for the Site identifies the property address as 25 Cumberland Hill Road. The record of ownership currently is the City of Woonsocket. A fire station (circa 1900), former solid waste incinerator (circa 1960) and several building structures (circa 1963 to 2001) related to the operations of the City's Wastewater Treatment Facility are listed as currently being on the property. This is consistent with C&E's onsite observations.

2.3.5 Aerial Photographs

Available aerial photographs that were on file with the Rhode Island Division of Statewide Planning Office were viewed electronically on March 2, 2016 in order to determine historical development patterns that had occurred on the Site. These photographs, dating back to 1939, indicate that this property contained a fire station which currently remains on the Site. Starting in 1962, the aerial photographs begin to show the construction and operation of the solid waste incinerator, which is the subject of this ESA, on the property. Beginning in 1972, the aerial photographs begin to show the Wastewater Treatment Facility on the property. Subsequent aerial photographs up to 2014, which is the most recent photograph available, continue to show the fire station and incinerator building structures on the northern portion of the Site with the structures associated with the Wastewater Treatment Facility on the southern portion of the Site. There is a paved driveway to the east of the incinerator building for access to the facility from Cumberland Hill Road. Historical aerial photographs are also included in the EDR Reports in **Appendix F**.

2.3.6 Historical City Directories

A computer database search for the Site was acquired from EDR to determine if the Site was listed in any available historical directories. The Historical City Directories for the Site can be found in **Appendix F**. The City Directory listings date back to 1942 when Hose 2 WFD and Sewer Pumping Station are listed for the Site at 000 Cumberland Hill Road. Hose 2 WFD and Sewer Pumping Station are listed in the City Directory for the Site up until 1951 when Sewer Pumping Station is listed for 25 Cumberland Hill Road. In 1963, the City Directory lists Sewer Pumping Station and Woon.-City of Incinerator

Dept. for the Site. Sewer Pumping Station and City Incinerator Dept. are listed for 25 Cumberland Hill Road until 1968 when the City Directory lists City Sewage Treatment Plant and City Incinerator Dept. for the Site. In 1973, City Sewage Treatment Plant, City Incinerator Dept. and City Dog Pound are listed in the City Directory for 25 Cumberland Hill Road. City Sewage Treatment Plant, City Incinerator Dept. and City Dog Pound are listed for the Site until 1983 when City Outside Sewage Dept., City Dog Pound and City Water & Sewer Dept. are listed. City Outside Sewage Dept., City Dog Pound and City Water & Sewer Dept. are listed in the City Directory for 25 Cumberland Hill Road up until 1988. There were no City Directory listings for this property in the City Directory from 1992 to 2013, which was the most recent listing provided.

Records and an inspection of the Site have indicated that the portion of the property that was assessed for this ESA and which contains the incinerator building structure is currently a distressed property. It appears that the Site has housed a solid waste incinerator that was in operation at 25 Cumberland Hill Road for the past 57 years.

2.3.7 Historical Use of the Site

Earliest records available indicate that Plat 41, Lot 1 was originally owned by the City of Woonsocket with records dating back to 1900. This lot contained a fire station (circa 1900). To date, this lot contains the fire station, the building structure housing the solid waste incinerator, that is the subject of this ESA, and various building structures that are associated with the operations of the City of Woonsocket Wastewater Treatment Facility located on the Site.

Section 3.0 Regulatory Records Review

The objective of the records review was to attempt to identify environmental permits, incidents, complaints, violations, response actions and remediation activities relating to owners, operators and tenants of the Site and nearby properties within ASTM E1527-00 minimum search distances from the Site, that were on file and readily accessible for review from federal, state, and local regulatory agencies. As previously indicated, this ESA only involved approximately 2.5 acres of the Site that contained the solid waste incinerator. The basis for much of this review was an environmental records review completed by EDR for this project. The extent of this EDR report included a database search of specific regulatory agencies within predefined search distances from the Site in accordance with ASTM E1527-00 protocol. The findings of the EDR report are incorporated into this document by reference. The entire report is attached hereto as **Appendix F**, which includes a complete listing of searched databases. The report indicates that the Site was identified in the UST database that was searched by EDR. Additionally, selected regulatory records review information is detailed in Section 3.1 below.

For purposes of this investigation, immediate abutters shall be defined as any real property or properties, the borders of which are contiguous or partially contiguous with that of the Site, or that would be contiguous or partially contiguous with that of the real property, but for a street, road or other public right-of-way.

3.1 Federal and State Regulatory Agency Review/Listings

3.1.1 EPA CERCLA and NPL Listing^{**}

Records pertaining to the United States Environmental Protection Agency (EPA) Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and National Priority List (NPL) listings were reviewed in the EDR Report as well as on February 9, 2016 at the Rhode Island Department of Environmental Management (RIDEM) offices in Providence, Rhode Island. The records review included the Site, and nearby sites within one-half (1/2) mile for CERCLA sites and one (1) mile for NPL sites. The findings are as follows:

- No CERCLA, NPL or delisted NPL records relating to the Site were identified.
- No NPL sites were located within one (1) mile of the Site.
- Three (3) CERCLA sites were located within one-half (1/2) mile of the Site.

3.1.2 City of Woonsocket Incident Response Files

A review on February 9, 2016, of the incident response files at RIDEM, Office of Compliance and Inspection revealed no records for the Site. There are no incident response files for abutting properties.

3.1.3 Oil Spill Response Files

A review on February 9, 2016, of the oil spill response files at RIDEM, Office of Compliance and Inspection revealed no records for the Site. There are no oil spill response files for abutting properties.

^{**}The CERCLA list is a means whereby federal and state agencies identify a potentially contaminated site for additional investigation. Inclusion on the list means that oil or hazardous waste/materials are, or at one time were, used and/or stored at the site and, therefore, represent a potential for adverse environmental impact. Appropriately, following investigation of a potentially contaminated CERCLA site, if it is determined that the site poses an immediate threat to human health or the environment, the site would be classified on the National Priorities List (NPL). NPL sites are those sites that are slated for further investigation and ultimately, remediation.

3.1.4 Resource Conservation and Recovery Information System (RCRIS)

The RCRIS databases include sites which handle hazardous materials and wastes and are registered with the EPA as such. The following information relating to the RCRIS database was reviewed:

- Treatment, Storage and Disposal Facilities (TSDF)
- Large Quantity Generators (LQG)
- Small Quantity Generators (SQG)

The Site was not identified in the RCRIS database. These are facilities that generate between 100 – 1,000 kg of EPA regulated hazardous waste per month, or meet other applicable requirements of the Resource Conservation and Recovery Act (RCRA). There were seven (7) SQG facilities identified within one-quarter (1/4) mile of the Site.

There were no identified LQGs within one-quarter (1/4) mile of the Site. LQGs are facilities that generate over 1,000 kg of hazardous waste per month, or meet other applicable requirements of the RCRA.

There were no identified TSDF facilities within one-half (1/2) mile of the Site. TSDFs are facilities which treat, store, or dispose of EPA regulated hazardous waste.

3.1.5 Rhode Island Solid Waste Facilities (RISWF)

The Site was not identified in the RISWF database. There were no active or inactive registered solid waste landfills and/or processing facilities identified within one-half (1/2) mile of the Site.

3.1.6 Rhode Island Hazardous Waste Sites (RIHWS) Report

RIHWS are sites that are, or were, under investigation by RIDEM authorities for potential hazardous waste releases or violations. The Site was not identified in the RIHWS database. There are twenty-nine (29) RIHWS identified within one (1) mile of the Site (see EDR report in **Appendix F**).

3.1.7 Leaking Underground Storage Tanks (LUST)

This is a listing of all active and inactive leaking underground storage tanks or sites where “Soil Removal Only” (i.e. where only limited soil removal was required by RIDEM) occurred as a result of tank decommissioning, removal or accidental release. There were nine (9) LUST sites identified within one-half (1/2) mile of the Site. There was one (1) LUST site identified within one-eighth (1/8) mile of the Site. This site is identified as Jannell. The Site was not identified in the LUST database.

3.1.8 Underground Storage Tanks (UST)

This is a listing of all tanks, active, or inactive (i.e. removed, filled in place) registered with the RIDEM. There are seven (7) registered UST sites located within a one-quarter (1/4) mile radius of the Site. These sites are listed in the EDR report in **Appendix F**. There are two (2) registered UST sites within one-eighth (1/8) mile of the Site. These sites are identified as City of Woonsocket, D.P.W. Highway Div. and Dunkin Donuts. Registered USTs were identified for the Site.

3.1.9 Specific RIDEM File Research

Based on the EDR report, specific potential for offsite contamination sources were identified for further RIDEM records research. On February 9, 2016, representatives from C&E requested a file review for the following sites:

- **City of Woonsocket D.P.W., Water Div.** (Site) – The City of Woonsocket D.P.W., Water Div. was listed as a UST site. This property contained one (1) 3,000 gallon #2 fuel oil tank. The closure in place of this UST took place on July 31, 2000 under the direction and regulations of RIDEM. It does not appear that contamination from the closure of the UST has contributed to contamination of the Site.
- **City of Woonsocket, D.P.W. Highway Div.** – The City of Woonsocket, D.P.W. Highway Div. was listed as a UST. This property is located approximately one-eighth (1/8) of a mile from the Site. This property contained 2,000 gallon and

10,000 gallon gasoline tanks, a 1,000 gallon diesel tank and a 1,000 gallon #2 fuel oil tank. These USTs were removed from the property on July 17, 2000 under the direction and regulations of RIDEM. Upon removal of the tanks, a gas odor was noted and the soils in the tank excavations were removed to the extent possible. It does not appear that contamination from the removed USTs has contributed to contamination of the Site.

- **Jannell** – Jannell was listed as a LUST site. This property is located approximately one-eighth (1/8) of a mile from the Site. This property contained one (1) 500 gallon gasoline tank. The removal of this tank from the property occurred on October 2, 1992 under the direction and regulations of RIDEM. Sampling at the bottom of the tank excavation indicated volatile organic compounds (VOCs) as a result of contamination due to tank overfills. As a result, an additional 6 to 6.5 feet of soil were removed from the bottom of the excavation. After RIDEM inspection, an additional 7 feet of soils were removed from the bottom of the excavation. The soils were then sampled again and the excavation was backfilled upon the receipt and approval of sample results by RIDEM. A Closure Report was prepared by GZA GeoEnvironmental, Inc. and dated December 18, 1992 for the closure of the LUST on the property. It does not appear that contamination from the removed LUST has contributed to contamination of the Site.
- **Dunkin Donuts** – Dunkin Donuts was listed as a UST site. This property is located approximately one-eighth (1/8) of a mile from the Site. This property contained one (1) 2,000 gallon gasoline UST. The removal of this tank from the property occurred on June 5 and 6, 1996 under the direction and regulations of RIDEM. This property was owned by Landmark Medical Center and was sold to Dunkin Donuts in 1996 thus prompting the removal of the UST from the property. Sampling results from the bottom of the excavation indicated that there was no contamination and the excavation was backfilled. A Closure Report for the removal of the UST on the property was prepared by RP Engineering, Inc. and was dated June 6, 1996. RIDEM issued a Certificate of Closure for the UST on

July 18, 1996. It does not appear that contamination from the UST removed from the property has contributed to contamination of the Site.

- **CH2M/Woonsocket WWTF** – CH2M/Woonsocket WWTF was listed as an above ground storage tank (AST) site and a RCRA-SQG site. This property is located approximately one-eighth (1/8) of a mile from the Site. This property has been classified as a SQG since 1981 due to waste from a parts cleaning machine on the property. This property has a RCRA Site Identification Form dated November 12, 2013 on file with RIDEM. This property has also filed a RIDEM Insignificant Alteration Permit dated January 20, 2005 for an oil AST. RIDEM records also included an AST registration form for the property dated March 4, 2015. CH2M/Woonsocket WWTF is required by RIDEM to submit monthly Oil Vessel Inspection Forms. RIDEM records indicated that these forms were last submitted on December 19, 2013. Based upon RIDEM records, it does not appear that contamination from this property has contributed to contamination of the Site.
- **Children’s Dental Care of RI** – Children’s Dental Care of RI was listed as a RCRA-SQG. This property is located approximately one-eighth (1/8) of a mile from the Site. The property has been identified as a SQG as of 2006 due to waste generated by a photographic fixer utilized on the property. RIDEM records include a Small Quantity Hazardous Waste Generator Report dated October 26, 2007 for Children’s Dental Care of RI. There is no evidence contained within RIDEM records which would indicate that contamination from this property has impacted the Site.

3.2 Local Regulatory Agency Review

3.2.1 Woonsocket Building, Zoning & Public Works Department

According to zoning maps, Plat 41, Lot 1 is zoned I-1 – Light Industrial District. The surrounding properties were zoned PR-1 – Active Public Recreation District, C-1 – Urban Commercial District, MU-1 – Mixed Use Commercial/Residential District and R-4 – High Density Single and Multifamily Residential District. The Site is served by municipal water provided by the City of Woonsocket. The Site contains sewer manholes that discharge into the public sewer system. No other records were on file for the Site.

3.2.2 Woonsocket Planning Department

Records on file for the Site associated with the construction of buildings on the property are consistent with the construction witnessed during the site investigation activities.

3.2.3 Woonsocket Fire Department

During the site investigation activities for the Site, a fire hydrant was observed near the entrance to the Site off of Cumberland Hill Road and to the north of the incinerator building. The fire hydrant appeared to be in good condition and in working order.

4.1 General

On January 6, 2016, C&E personnel conducted a reconnaissance of the Site for the purpose of gathering data regarding potential Recognized Environmental Conditions. In addition, abutting properties were visually assessed for readily apparent conditions or activities, which through migration, may have resulted in the presence of Recognized Environmental Conditions at the Site. A summary of findings from the Site reconnaissance is provided in the following sections and selected features are identified on the Site Plan (see **Appendix G**).

4.2 Site Inquiries

The City of Woonsocket provided information on the Site with regards to the use of this property. This information confirmed that the portion of the Site evaluated for this ESA is approximately 2.5 acres and is currently a distressed property that has contained a solid waste incinerator for the past 57 years. The remainder of the Site contains a fire station to the north of the incinerator building and various buildings associated with the Woonsocket Wastewater Treatment Facility to the south of the incinerator building.

4.3 Site Reconnaissance

The Site reconnaissance was conducted on January 6, 2016. The Site houses a vacant building structure (circa 1960) that was formerly utilized as a solid waste incinerator with a storage structure and two (2) storage trailers on the eastern portion of the parcel and a parking area where City public safety vehicles were parked on the western half of the parcel. The incinerator building structure is a two-story brick masonry building with a concrete foundation. This building appears to be in poor condition. The basement of the building was utilized as a storage and shop area. The office and the dumping area for the incinerator were located on the first floor of the building and the third floor was utilized as the charging floor for the incinerator. At the southern side of the building was a concrete foundation with remnants from the incinerator chimney. The chimney had been removed several years ago though there is no record of this work in the City files. The

masonry remnants from the chimney did not appear to contribute to contamination of the Site but further testing would be conducted to determine if the chimney remnants contained ABCM.

On the western side of the back of the incinerator building are stockpiles with debris left over from various water projects completed in the City. This debris consists of a stockpile consisting of fire hydrants, piping and construction demolition materials. This stockpile was stored on dirt-covered asphalt. There were no signs of contamination associated with this stockpile. Note, this does not include the presence of lead paint from these discarded hydrants.

On the eastern side of the front of the incinerator building is a retaining wall constructed of old truck trailers and dumpsters and old fire hydrants and wooden pallets stored in a grassy area. Although the truck trailers and dumpsters making up the retaining wall appear rusted, they do not appear to have contributed to contamination of the Site. Also, the old fire hydrants and wooden pallets stored in the grassy area do not appear to have contributed to contamination of the Site. Note, this does not include the presence of lead paint from these discarded hydrants.

There is a three (3) bay covered storage port to the east of the incinerator building. This storage port is of metal construction with a roof and walls on three (3) sides leaving the front of the structure open. Stockpiles of sand, asphalt and process gravel as well as spare hydrants and valve boxes are stored in this storage structure. The stockpiles were stored on top of asphalt with concrete blocks dividing the different types of stockpiles. There were no signs of contamination associated with these stockpiles. The spare hydrants were stored on top of asphalt and the spare valve boxes were stored in wooden crates on top of asphalt. There is no evidence that the storage of the spare hydrants and valve boxes have contributed to contamination of the Site.

There are two (2) storage trailers of metal construction located to the east of the incinerator building on the southeastern portion of the Site. These trailers are utilized by the City Water Department for storage. These trailers were locked and inaccessible for

inspection. The trailers appeared to be in good condition and there were no visible signs of leakage of any materials that might have been placed in these trailers which could have contributed to Site contamination. There was also plastic piping, tires, wooden pallets and a stockpile of construction demolition materials and brush stored by the City Water Department on the ground next to these trailers. These items were stored on top of asphalt and therefore there is no evidence that the storage of these items has contributed to contamination of the Site.

On the western half of the Site, is a paved parking area with access from Cumberland Hill Road where City public safety vehicles were parked. It appeared that these vehicles were placed in storage at this location. There were no signs of contamination associated with these vehicles. In the vicinity of the parked vehicles is a brush dumping area consisting of metal, wood and styrofoam in a grassy area. It does not appear that this brush dumping area has contributed to contamination of the Site.

At the far eastern portion of the Site were three (3) separate stockpiles of mulch, crushed stone and brush. These stockpiles were stored on asphalt. There were no signs of contamination associated with these stockpiles.

There are several areas of the Site along Cumberland Hill Road that contain roadside trash. This roadside trash consists of litter typically found along busy roadways. It does not appear that this roadside trash has contributed to contamination of the Site.

4.4 Area Reconnaissance

The area surrounding the Site was reconnoitered on January 6, 2016 to observe current uses of adjoining properties. Based on C&E's drive-by observations, the properties surrounding the Site (see **Appendix E**) are a mix of commercial and residential.

The notable neighboring industrial/commercial facilities are Jannell (approximately 1/8 of a mile from the Site), Dunkin Donuts (approximately 1/8 of a mile from the Site), City of Woonsocket, D.P.W. Highway Div. (approximately 1/8 of a mile from the Site),

Children's Dental Care of RI (approximately 1/8 of a mile from the Site) and CH2M/Woonsocket WWTF (approximately 1/8 of a mile from the Site). There is a potential that these sites have onsite contamination. These sites have been under the examination of RIDEM. Based upon file research, there is no evidence of contamination or migration onto the subject Site.

4.5 Environmental Investigations

Due to the fact that the Site is currently a distressed property that has housed a solid waste incinerator for the past 57 years and knowing that the Site had the potential to be contaminated, it was necessary to collect samples of soils and building contents to determine the extent of contamination on the Site. As part of the environmental investigations for the Site, C&E prepared a sampling plan to provide an assessment of the soils found within the Site in an effort to confirm or refute environmental impacts. Samples of building contents were also collected to determine the hazardous nature of the materials that may have to be dealt with as part of any demolition project on the Site and to confirm or refute the existence of biological wastes, heavy metal wastes, VOC acid and base extractables, polychlorinated biphenyls (PCB's) and mercury. The following sections provide summaries of the soil sampling and building contents sampling at the Site.

4.5.1 Soil and Debris Samples

Soil and debris sampling at the Site took place on January 29, 2016. These samples were collected at various locations within the incinerator building with the understanding that these materials would need to be cleaned up as part of any building demolition. Samples included composites of accumulated debris in floor pits, on the tipping and receiving floor and areas of the second and third floors of the structure where the roof has failed and portions of the building interior were left to the weather. A total of six (6) samples were collected from within the building by C&E. All six (6) samples were analyzed for RCRA 8 metals, VOCs and SVOCs. The sampling analytical results are provided in **Appendix H**. **Appendix I** includes the Soil and Debris Sampling Location Plan. The results of the RCRA 8 metals analysis are summarized in **Table 1** below.

TABLE 1 SOIL AND DEBRIS SAMPLE RESULTS – RCRA 8 METALS						
	<i>Sample 1</i>	<i>Sample 2</i>	<i>Sample 3</i>	<i>Sample 4</i>	<i>Sample 5</i>	<i>Sample 6</i>
<i>Arsenic</i>	35 mg/kg	7.0 mg/kg	6.5 mg/kg	7.0 mg/kg	3.4 mg/kg	13 mg/kg
<i>Barium</i>	320 mg/kg	130 mg/kg	87 mg/kg	130 mg/kg	59 mg/kg	35 mg/kg
<i>Cadmium</i>	39 mg/kg	54 mg/kg	8.2 mg/kg	3.4 mg/kg	1.2 mg/kg	2.0 mg/kg
<i>Chromium</i>	550 mg/kg	240 mg/kg	75 mg/kg	91 mg/kg	16 mg/kg	120 mg/kg
<i>Lead</i>	11,000 mg/kg	2,200 mg/kg	450 mg/kg	260 mg/kg	140 mg/kg	730 mg/kg
<i>Selenium</i>	ND	ND	ND	ND	ND	ND
<i>Silver</i>	3.0 mg/kg	1.3 mg/kg	0.79 mg/kg	0.68 mg/kg	ND	ND
<i>Mercury</i>	2.0 mg/kg	1.6 mg/kg	1.5 mg/kg	0.34 mg/kg	0.18 mg/kg	1.8 mg/kg

ND = Non Detectable

Table 2, following, indicates the RIDEM Residential and Industrial/Commercial Direct Exposure Criteria and the number of RCRA 8 metal samples that are at or exceed these levels.

TABLE 2 RIDEM DIRECT EXPOSURE CRITERIA				
Substance	Residential Direct Exposure Criteria	# of Samples At or Exceeding Residential Direct Exposure Criteria	Industrial / Commercial Direct Exposure Criteria	# of Samples at or Exceeding Industrial / Commercial Direct Exposure Criteria
Arsenic	7.0 mg/kg	4	7.0 mg/kg	4
Barium	5,500 mg/kg	0	10,000 mg/kg	0
Cadmium	39 mg/kg	2	1,000 mg/kg	0
Chromium III	1,400 mg/kg	0	10,000 mg/kg	0
Chromium VI	390 mg/kg	1	10,000 mg/kg	0
Lead	150 mg/kg	5	500 mg/kg	3
Selenium	390 mg/kg	0	10,000 mg/kg	0
Silver	200 mg/kg	0	10,000 mg/kg	0
Mercury	23 mg/kg	0	610 mg/kg	0

Based upon the soil and debris sampling results, it can be confirmed that environmental impacts resulting from the operation of the solid waste incinerator exist at the Site. As such, a plan of remediation will be prepared to allow for complete remediation of the

Site. As previously indicated, the complete soil and debris sampling analytical results can be found in **Appendix H**.

4.5.2 Building Content Samples

Sampling of the building contents at the Site took place on February 1, 2016. Samples were collected from “suspect” ACBMs that were accessible through semi-destructive efforts. A total of forty-five (45) samples were collected from the Site by Vortex Inc., a state licensed asbestos professional. All forty-five (45) samples were tested for asbestos. The Asbestos Inspection Report prepared by Vortex Inc. is provided in **Appendix C** and includes the sampling analytical results and the sampling location plan. A total of twenty-eight (28) samples tested positive for asbestos. The Vortex Inc. Asbestos Inspection Report indicates that ABCMs include metal window glass glazing and caulking, pipe lagging insulation and fitting insulation located throughout the building, floor tiles and mastic sealant within the office area, friable insulation backing material located within the combustion chamber area, glass window glazing and perimeter frame caulking on metal doors and roof perimeter flashing and field material on the flat section of the roof. The locations of these ACBMs are indicated on drawings included in the Asbestos Inspection Report in **Appendix C**. Based upon the results presented in the Asbestos Inspection Report, it can be confirmed that ACBMs are present at the Site. Therefore, an asbestos abatement plan will be required for the demolition of the solid waste incinerator building structure on the Site which will allow for complete remediation of the Site. This abatement plan shall be prepared in accordance with RIDEM regulations.

Section 5.0 Findings and Conclusions

5.1 General

C&E conducted an ASTM Phase I and II Environmental Site Assessment (ESA) on behalf of the City of Woonsocket at the property identified as Tax Assessor's Plat 41, Lot 1 in the City of Woonsocket, Rhode Island. The assessment included a Site reconnaissance, a review of available Site historical information and local, state, and federal regulatory agency records, and interviews with persons associated with ownership of the Site. The assessment was conducted in general conformance with ASTM Document E1527-00 – Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process and ASTM Document E1903-11 – Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process, as amended and included an evaluation of the presence of ACBMs within the existing solid waste incinerator building structure on the Site. However, this ESA did not include an evaluation of the presence of lead based paint within the existing structures on the Site.

C&E's findings and conclusions, which are based on the work performed for this assessment, and which are subject to the Limitations provided in Section 6, are summarized below.

- The Site is located adjacent to commercial properties and residential properties with single and multi family homes. The Site is abutted by Plat 27 Lot 119 to the north, Plat 41 Lot 14, Plat 42 Lot 1 and Plat 41 Lot 20 to the south, Cumberland Hill Road, Plat 41 Lot 150, Plat 41 Lot 2, Plat 41 Lot 24, Plat 41 Lot 33, Plat 41 Lot 13, Plat 41 Lot 147, Plat 41 Lot 149, Plat 41 Lot 7 and Plat 41 Lot 23 to the east and the Blackstone River, Plat 27 Lot 30 and Plat 28 Lot 15 to the west.
- Analytical testing has indicated that there is a presence of contaminated soil and debris on the Site. The sampling results indicate the presence of RCRA 8 metals in soils on the Site. As a result, a plan of remediation will be prepared in accordance with RIDEM regulations to allow for complete remediation of the

Site. The complete soil sampling analytical results are provided in **Appendix H** and a plan depicting the locations of the soil samples is provided in **Appendix I**.

- Analytical testing has indicated that there is a presence of ACBMs within the existing solid waste incinerator building structure on the Site. Therefore, there is evidence that ACBMs have contributed to contamination of the Site. This inspection for asbestos was a semi-destructive inspection and sample collection. The ACBM sampling was conducted by Vortex Inc., a state licensed asbestos professional. Several portions of the construction materials comprising the building structure were identified as having ABCMs. These materials include metal window glass glazing and caulking, pipe lagging insulation and fitting insulation located throughout the building, floor tiles and mastic sealant within the office area, friable insulation backing material located within the combustion chamber area, glass window glazing and perimeter frame caulking on metal doors and roof perimeter flashing and field material on the flat section of the roof. Based upon the results of the ABCM sampling, it is confirmed that ACBMs are present at the Site. As such, an asbestos abatement plan will be prepared in accordance with RIDEM regulations for the demolition of the solid waste incinerator building structure on the Site that will allow for complete remediation of the Site. The Asbestos Inspection Report prepared by Vortex Inc. is provided in **Appendix C** and includes the ACBM analytical results and ACBM sample location plans.
- The Site was identified in the UST database searched by EDR. The Site had contained a 3,000 gallon #2 fuel oil tank which was closed in place on July 31, 2000 under the auspices of RIDEM. It does not appear that the closure of the UST has contributed to contamination of the Site.
- Review of available regulatory information for the Site and within the ASTM required minimum search distances around the Site revealed some area sources of concern but did not directly impact the Site.

Based upon the work conducted during the course of this ESA, C&E has identified direct evidence that, in our opinion, suggests the presence of Recognized Environmental Conditions at the Site which are described herein.

5.2 Remediation Recommendations

The City is desirous of the demolition of the former incinerator building and removal of the various infrastructure components needed to support the incinerator operation so that the Site can be repurposed. Prior to any building demolition, the interior of the building must be cleaned of contamination and this debris removed for proper disposal. The building must also be cleared of ACBMs prior to any building demolition. This material must also be removed, contained and packaged for proper disposal.

Based upon the confirmation of soil and debris contamination and ACBMs at the Site, it is recommended that remediation remedies be implemented at the Site to reduce the threat posed by the contaminated soils, debris and ABCMs. Remedial objectives for the Site will be established and the final remedy shall be selected and implemented following approval by RIDEM and solicitations of public comments regarding the proposed remedy. The remediation remedy shall appropriately address the impacts on the Site's soils, debris and building structure. The remediation remedy shall be developed in accordance with the *RIDEM Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases*, amended November 2011.

The recommended sequencing of tasks to affect the demolition of the building and ultimate re-purposing of the Site includes the following:

1. Remove salvageable materials from the building structure and surrounding yard (i.e. pipe, pipe fittings, discarded tools, equipment, etc). Note, much of these materials have just been discarded in the abandoned building and therefore will need to be cleaned and decontaminated prior to removal from the Site.
2. Remove the accumulated debris from the building site and dispose of it at a properly licensed facility. This includes accumulated dirt and debris on the

tipping and receiving floor, cleaning of floor trenches and general cleaning and decontamination of the structure as a whole. This incinerator building has been left exposed to the elements for over 20 years. Portions of the roof have failed and are missing. There are areas of the floor and walls with several inches of bird droppings (mixed with other debris) that must be removed and the entire area decontaminated.

3. Once the building is decontaminated, the asbestos must be completely abated from the Site in accordance with the ABCM investigation and remediation plan contained herein and all associated materials removed and properly disposed in accordance with local, state and federal regulations.
4. The final step in this process is the demolition of the incinerator building structure and related out buildings and disposal (or reclamation) of the materials off site. This work along with any of the building decontamination and ABCM abatement work must be carried out with extreme caution. The structural integrity has been compromised from the years of this building being exposed to the environment and elements. All work carried out in and around this building structure must be done safely and in full compliance with OSHA work rules for site safety.

The plans and specifications for the cleaning, decontamination, ACBM abatement and building demolition have yet to be developed. This was intended to be carried out subsequent to the completion of this work effort. It is estimated that the cost of the decontamination and demolition of the building is estimated at \$350,000. This should be considered a budgetary cost estimate at this time in that the final design of the demolition has yet to be completed.

Section 6.0 Limitations

C&E's findings and conclusions are based on its professional judgment concerning the significance of the limited data gathered during the course of the site assessment. C&E's site assessment has been conducted by employees of C&E Engineering Partners, Inc. in accordance with generally accepted engineering practices, consistent with standards of the industry for environmental site assessments and ASTM E1527-00 and E1903-11 and C&E observed that degree of care and skill generally exercised by other consultants under similar circumstances and conditions. Our findings and conclusions must be considered not as scientific certainties, but rather as our professional opinion concerning the significance of the limited data gathered during the course of the environmental site assessment. No other warranty, express or implied, is made. Specifically, C&E does not and cannot represent that the Site contains no hazardous material, oil, or other latent condition beyond that observed by us during our site assessment. This report is also subject to the specific limitations contained in C&E's Proposal No. P1523, titled:

**Proposal for Engineering Services
Phase I & II Environmental Site Assessment
Building and Structures
Closed Incinerator Building/Property, Woonsocket, RI
C&E Proposal No. P1523**

The Terms and Conditions of this agreement are attached as **Appendix J**. This study and report have been prepared on behalf of and for the exclusive use of the City of Woonsocket, solely for use in an environmental assessment of the Site. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of C&E. Our report is subject to the additional limitations listed below:

1. The observations described in this report were made under the conditions stated therein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the

scope of described services or the time and budgetary constraints imposed by Client. The work described in this report was carried out in accordance with the attached Statement of Terms and Conditions contained in **Appendix J**.

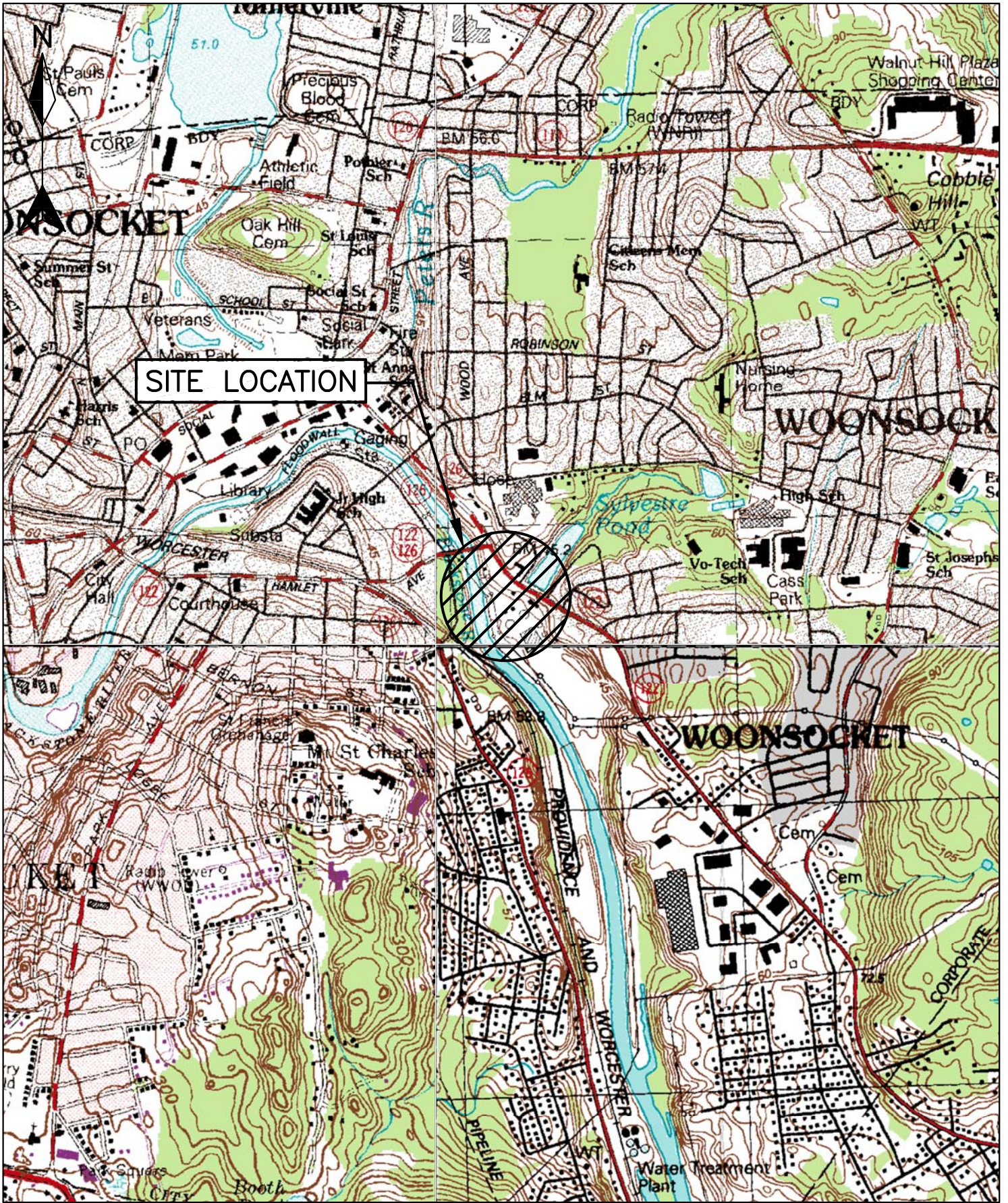
2. In preparing this report, C&E Engineering Partners, Inc. (C&E) has relied on certain information provided by state and local officials and other parties referenced therein, and on information contained in the files of state and/or local agencies available to C&E at the time of the site assessment. Although there may have been some degree of overlap in the information provided by these various sources, C&E did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment. C&E assumes no responsibility for the accuracy of information obtained from interviews, information obtained, or the conclusions drawn from them.
3. In the event that bank counsel or title examiner for Client obtains information on environmental or hazardous waste issues at the Site not contained in this report, such information shall be brought to C&E's attention forthwith. C&E will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this report.
4. Observations were made of the Site and of structures on the Site as indicated within the report. Where access to portions of the Site or to structures on the Site was unavailable or limited, C&E renders no opinion as to the presence of hazardous material or oil, or to the structure. In addition, C&E renders no opinion as to the presence of hazardous material or oil, or to the presence of indirect evidence relating to hazardous material or oil, where direct observation of the interior walls, floor, ceiling or other portions of a structure, or, of the Site itself was obstructed by objects or coverings on or over these surfaces.


5. Unless otherwise specified in the report, C&E did not perform testing or analyses to determine the presence or concentration of any analytical compounds including lead based paint or polychlorinated biphenyls (PCB's) at the Site or in the environment at the Site.

6. The purpose of this report was to assess the physical characteristics of the Site with respect to the presence in soil or groundwater of hazardous material or oil. No specific attempt was made to check on the compliance of present or past owners or operators of the Site with federal, state, or local laws and regulations, environmental or otherwise.

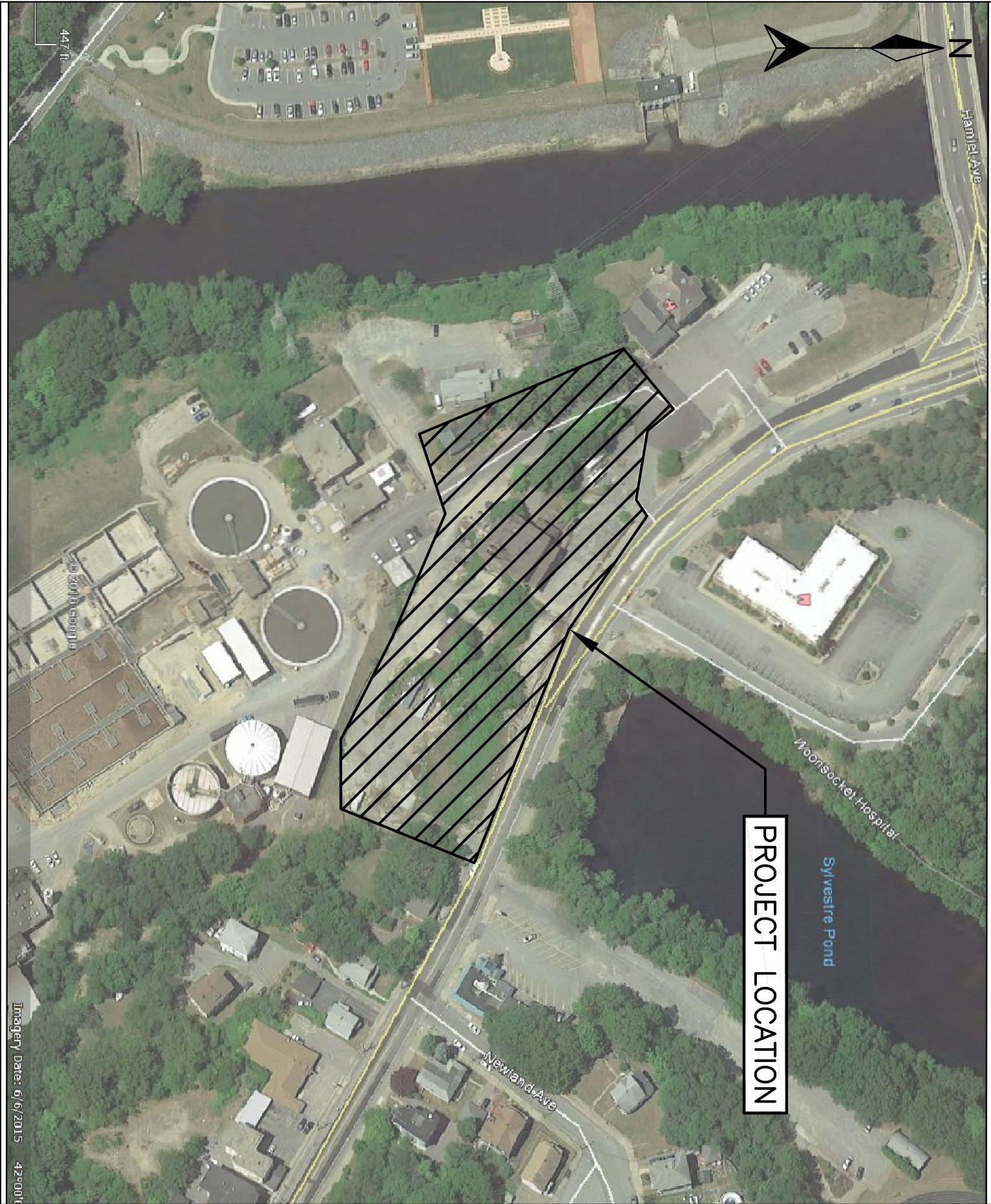
7. Except as noted within the text of the report, no quantitative laboratory testing was performed as part of the site assessment. Where such analyses have been conducted by an outside laboratory, C&E has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data.

Appendix A
Site Locus Map




APPENDIX A	PROJ. NO. J1523	ENVIRONMENTAL SITE ASSESSMENT	CITY OF WOONSOCKET	 CIVIL ENGINEERS, ENVIRONMENTAL PROJECTS.
		SITE LOCUS SCALE: 1" = 1500'	AP 41 LOT 1 25 CUMBERLAND HILL ROAD WOONSOCKET RHODE ISLAND	

Appendix B
Site Location Plan



Imagery Date: 6/6/2015 42°00'1

APPENDIX B	PROJ. NO. 11523	ENVIRONMENTAL SITE ASSESSMENT	CITY OF WOONSOCKET	 CIVIL ENGINEERS, ENVIRONMENTAL PROJECTS.
	PROJECT LOCATION PLAN NOT TO SCALE	AP 41 LOT 1 25 CUMBERLAND HILL ROAD WOONSOCKET RHODE ISLAND	342 PARK AVENUE WOONSOCKET, RI 02895 www.ceengineer.com	

Appendix C

Asbestos Inspection Report, February 15, 2016

VORTEX

Asbestos Inspection & Report
Incinerator Building
Woonsocket, RI

ASBESTOS INSPECTION REPORT

At:

"Former" **INCINERATOR BUILDING** Woonsocket, RI

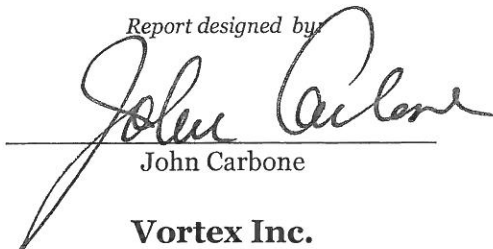
February 15, 2016

Prepared for:

Thomas Nicholson P.E.

C & E Engineering Partners
342 Park Avenue
Woonsocket, RI

Report designed by



John Carbone

Vortex Inc.
P.O. Box 6060
Warwick, R.I. 02887-6060

1-800-VORTEXX

TYPE OF INSPECTION

Vortex Inc. performed a visual, semi-destructive inspection and sample collection/analysis of accessible "suspect" asbestos containing building materials (ACM) from within the interior/exterior of this vacant, 3 split level building. It's prior usage was as an Incinerator Plant for town garbage. This inspection was performed to determine the quantity and location of asbestos containing building materials requiring abatement prior to demolition of this structure.

The asbestos inspection, sample collection/PLM analysis was performed by John Carbone (RI Asbestos Inspector License #177IS, expires 3/31/16).

"SUSPECT" BUILDING MATERIALS

Bulk sampled building materials [refer to EMSL Lab Reports for sample identification DRAWINGS A1 - A5 for sampling locations]. The bold printed building materials listed below contain asbestos and must be abated prior to building demolition to include:

- **Metal window glass glazing & caulking**
- **Pipe lagging insulation and fitting insulation throughout the facility.**
- Cloth lagging insulation [brown color]
- Interior wall plaster, tile, glue within the Locker Room areas
- **9" floor tile/mastic within the office**
- CMU block & Mortar
- Red brick & mortar
- Exposed yellow/white fire brick and **friable insulation backing material [gray color] within the combustion chamber area.**
- **Metal window glazing & perimeter caulking material throughout all levels.**
- **Metal doors (total of 9) - glass window glazing material and perimeter frame caulking material.**
- **Roof perimeter flashing and/or field (flat section of roof) material.**

Refer to **ATTACHMENT #1 - CHART OF ASBESTOS CONTAINING BUILDING MATERIALS** (2 pages) for the list of ACBM locations, comments and estimated asbestos abatement cost based on demolition work procedures per attached DRAWINGS A1 - A5.

ACBM - SITE SPECIFIC CONSIDERATIONS

Pipe Insulation - The vast majority of pipe lagging insulation [straight lengths of pipe insulation] is comprised of fiberglass material. However, the remaining pipe fitting [elbows, tees, unions, etc.] contain asbestos in various diameters and locations throughout this building. The majority of ACBM fittings are located at the ceiling height level.

Floor tile/Mastic - the Main Office contains ACM floor tile/mastic. 30% of the floor tile is missing but the entire floor is still covered with the black colored mastic.

Metal Doors - there are nine (9) interior and exterior metal doors that contain a 2' x 2' glass insert. This glass is secured with a white colored bead of ACM glazing material located between the glass and the metal frame.

Window Walls - there are window walls surround the entire building on all levels. The metal window glass glazing and perimeter frame caulking material contains asbestos.

Roofing - the entire office roof contains asbestos. The Main Plant Roof perimeter flashing contains asbestos. It shall be assumed that the front canopy and two (2) combustion chamber roofs also contain ACM perimeter flashing material.

Combustion Chamber - The rear side of this building contains what remains as part of the combustion chamber with an exposed opening where the smoke stack once stood. The exposed opening contained yellow/white fire brick that does not contain asbestos. However, there is a "gray colored" friable backer block insulation material [6" x 16" x 1.5" thick] that does contain asbestos. Some of this ACM board material has delaminated [due to the weather] and has mixed in with the remaining ash. Therefore, the ash is considered ACM also. There are 2 separate "inaccessible sides to this combustion chambers [10' x 18' by 20+ feet high]. It is also assumed this friable ACM insulation board material is also located behind the red brick veneer. Refer to the attached PHOTO - page #1 depicting the rear opening and illustrating the ACM "gray colored" insulation.

ATTACHMENT #1 - CHART OF ASBESTOS CONTAINING BUILDING MATERIALS

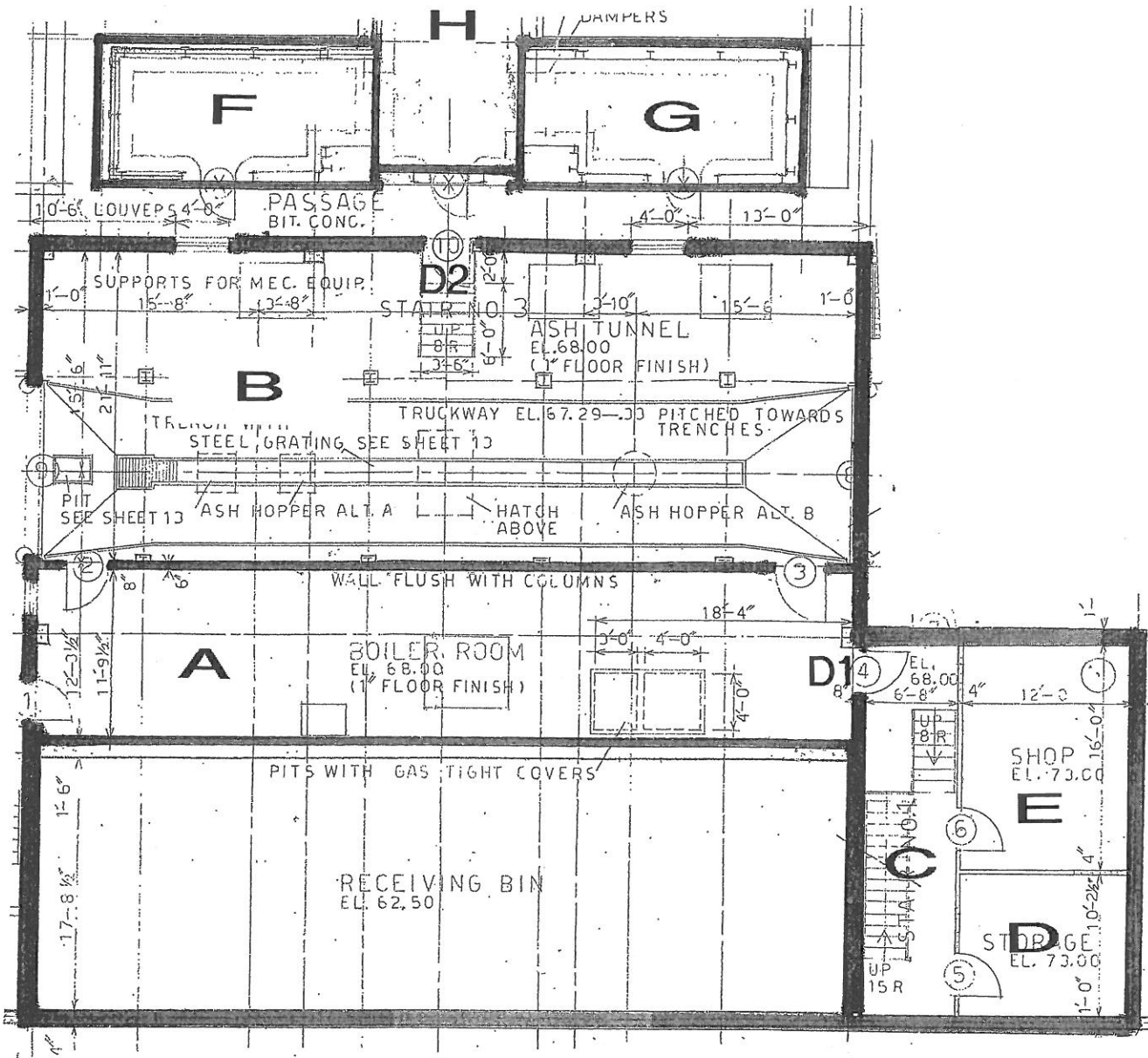
Area on Drawings	DRAW #	Pipe Fittings	Pipe Lagging	Floor tile & Mastic	# of Metal Doors w/ window glazing & caulking	ACM Block/brick shaped Insul. behind fire brick [non-ACM]	COMMENTS	Estimated Abatement Cost
		Qty.	l.f.	s.f.				
A	A1	25					MAJORITY OF FITTING [VARIOUS DIAMETERS) LOCATED AT THE CEILING LEVEL	\$2,500
B		30					MAJORITY OF FITTING [VARIOUS DIAMETERS) LOCATED AT THE CEILING LEVEL	\$2,500
C		14					MAJORITY OF FITTING [VARIOUS DIAMETERS) LOCATED AT THE CEILING LEVEL	\$2,000
D		23					MAJORITY OF FITTING [VARIOUS DIAMETERS) LOCATED AT THE CEILING LEVEL	\$2,500
E		25					MAJORITY OF FITTING [VARIOUS DIAMETERS) LOCATED AT THE CEILING LEVEL	\$2,500
F					1000 *		IT IS ASSUMED THIS FRIABLE INSULATION BLOCK IS LOCATED BETWEEN THE FIRS BRICK AND THE EXTERIOR [RED] BRICK [NO ACCESS AT TIME OF INSPECTION]	\$8,000
G					1000 *			\$8,000
H					600 *		EXPOSED FRIABLE BLOCK MATERIAL BEHIND FIRE BRICK. THE DEBRIS ASH ON GROUND ALSO CONTAINS ASBESTOS.	\$6,000
TOTAL DOORS					2 [D1 & D2]		METAL DOORS WITH GLASS PANEL INSERT [ACM GLAZING BETWEEN GLASS AND METAL FRAME] AND CAULKING AROUND FRAMES	\$400
I	A2	4					4 FITTINGS 8 FEET ABOVE F.F.	\$400
J		12	6				ACM LOCATED IN 4 LOCATIONS NEAR CEILING LEVEL.	\$1,800
K		10	2				ACM INSULATION ABOVE STAIRWAY LANDING	\$1,500
L		4	22				ACM INSULATION AT EXPOSED CEILING LEVEL.	\$800
				410			30% OF FLOOR TILE IS MISSING [RED COLOR] BUT ACM MASTIC COVERS ENTIRE FLOOR.	\$2,500
TOTAL DOORS					3 [D3-D5]		METAL DOORS WITH GLASS PANEL INSERT [ACM GLAZING BETWEEN GLASS AND METAL FRAME] AND CAULKING AROUND FRAMES	\$600

ATTACHMENT #1 - CHART OF ASBESTOS CONTAINING BUILDING MATERIALS

Area on Drawings	DRAW #	Pipe Fittings	Pipe Lagging	Metal Doors w/ window glazing & caulking	Roofing Material		Exterior Window & Door Glazing & Caulking	COMMENTS	Estimated Abatement Cost
					[field and flashing]	[perimeter flashing]			
		Qty.	I.f.		s.f.	I.f.			
TOTAL DOORS				3 [D3-D5]				METAL DOORS WITH GLASS PANEL INSERT [ACM GLAZING BETWEEN GLASS AND METAL FRAME] AND CAULKING AROUND FRAMES	\$600
M	A3	18	4					ACM LOCATED IN 4 LOCATIONS NEAR ROOF LEVEL.	\$1,800
N		1						1 LARGE ACM FITTING NEAR CEILING LEVEL	\$300
TOTAL DOORS				4 [D6-D9]				METAL DOORS WITH GLASS PANEL INSERT [ACM GLAZING BETWEEN GLASS AND METAL FRAME] AND CAULKING AROUND FRAMES	\$800
O	A4	4						4 FITTINGS ATTACHED TO FIBERGLASS RISER	\$500
P	A5				410			ENTIRE ROOF MEMBRANE ROOF CONTAINS ASBESTOS	\$2,300
Q					160			ENTIRE ROOF MEMBRANE ROOF CONTAINS ASBESTOS	\$1,500
R						150		PERIMETER FLASHING MATERIAL [1' WIDE STRIP] CONTAINS ASBESTOS	\$2,000
S						230		PERIMETER FLASHING MATERIAL [1' WIDE STRIP] CONTAINS ASBESTOS	\$2,800
T						56		PERIMETER FLASHING MATERIAL [1' WIDE STRIP] CONTAINS ASBESTOS	\$1,000
U						56		PERIMETER FLASHING MATERIAL [1' WIDE STRIP] CONTAINS ASBESTOS	\$1,000
V							60 C.Y.	ACM WINDOW/DOOR GLASS GLAZING AND PERIMETER CAULKING MATERIAL AT ALL APPLICABLE FLOOR LEVELS AND SIDES OF BUILDING.	\$20,000
ESTIMATED ABATEMENT COST									\$76,600

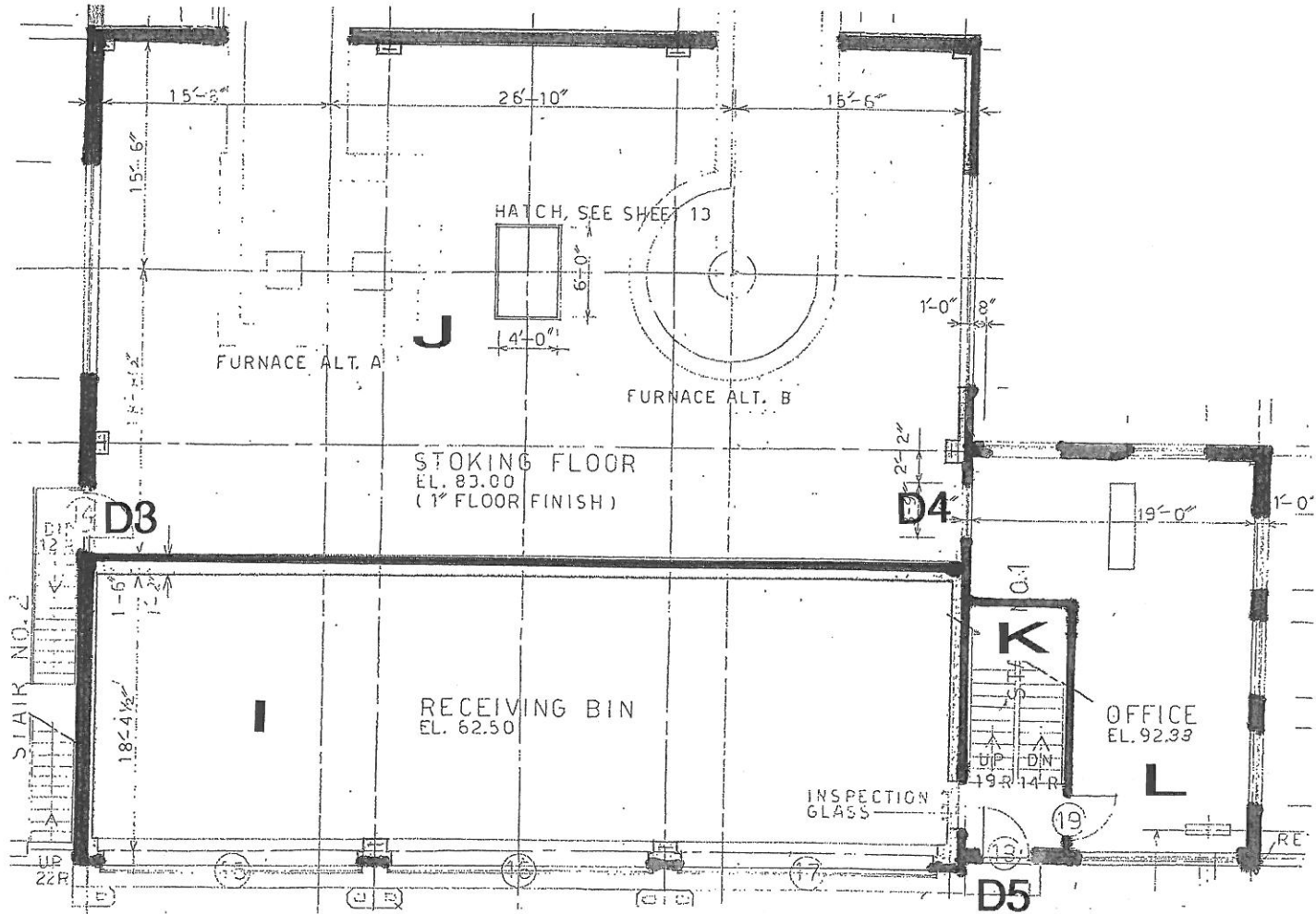
* = DENOTES QTY. & ASSOCIATED COST IF NON-ACM BRICK [WHITE & YELLOW] CAN BE DISPOSED AS SOLID WASTE.

ASH TUNNEL LEVEL



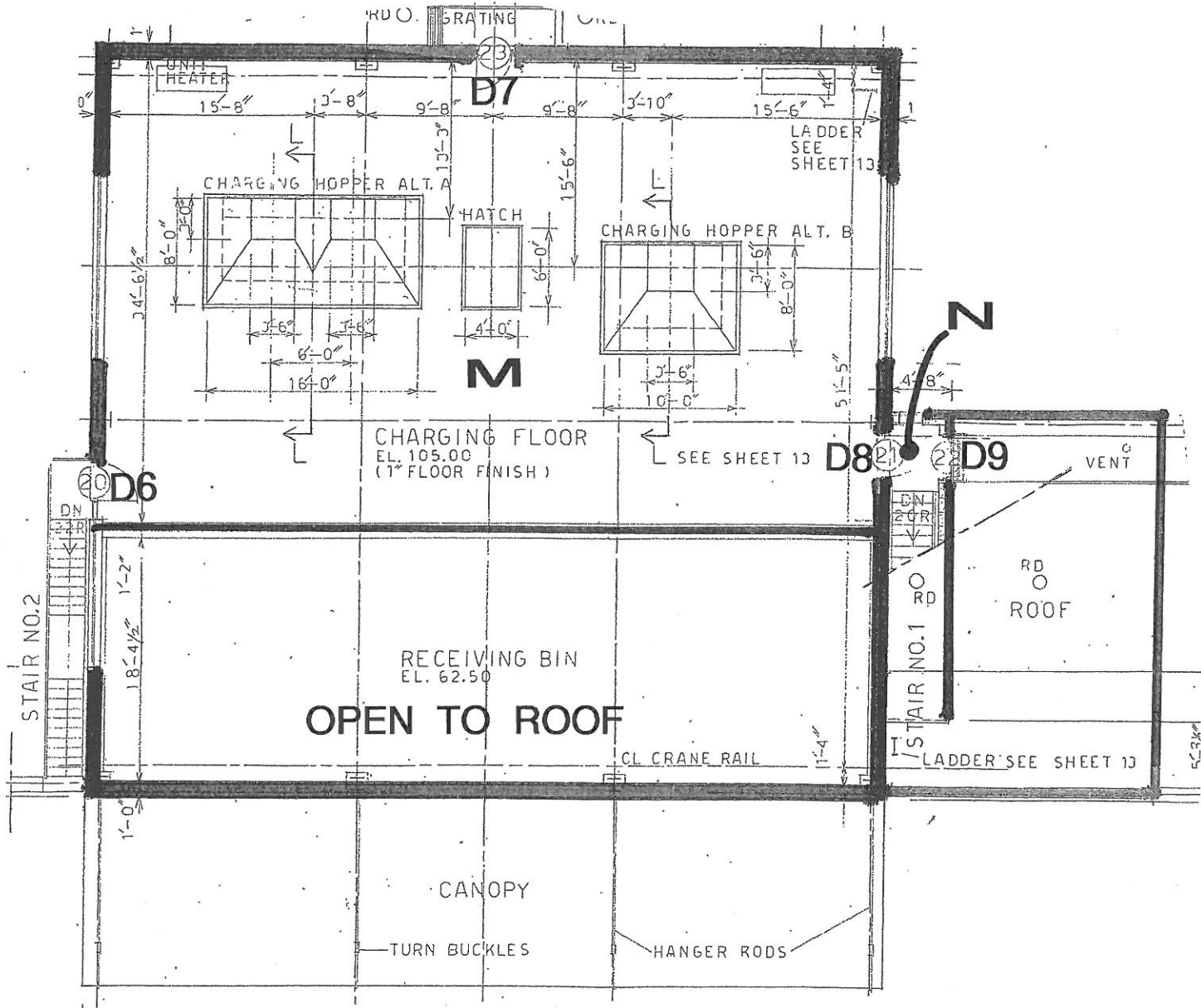
DRAWING A1

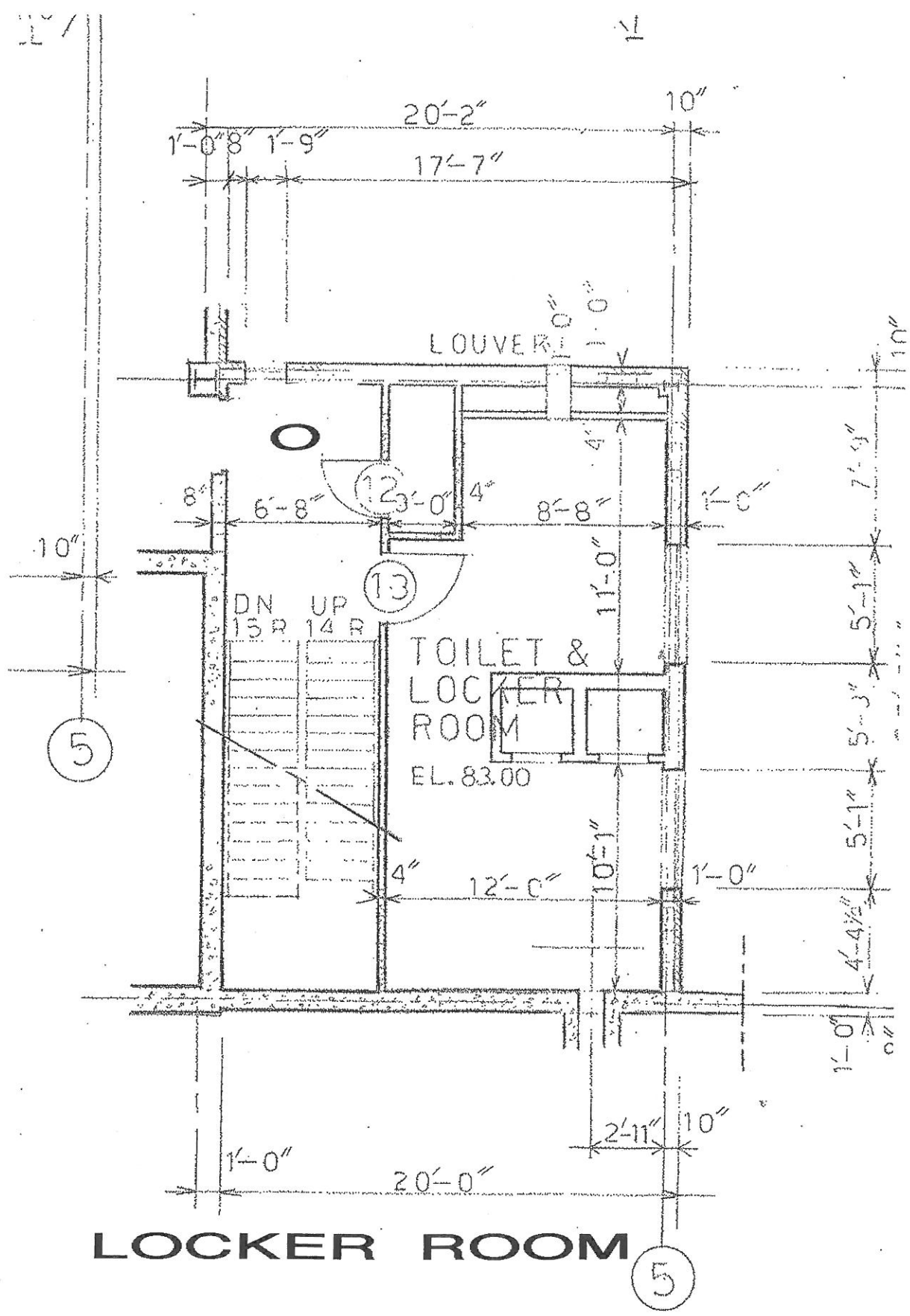
STOCK AND DUMPING LEVEL



DRAWING A2

CHARGING LEVEL

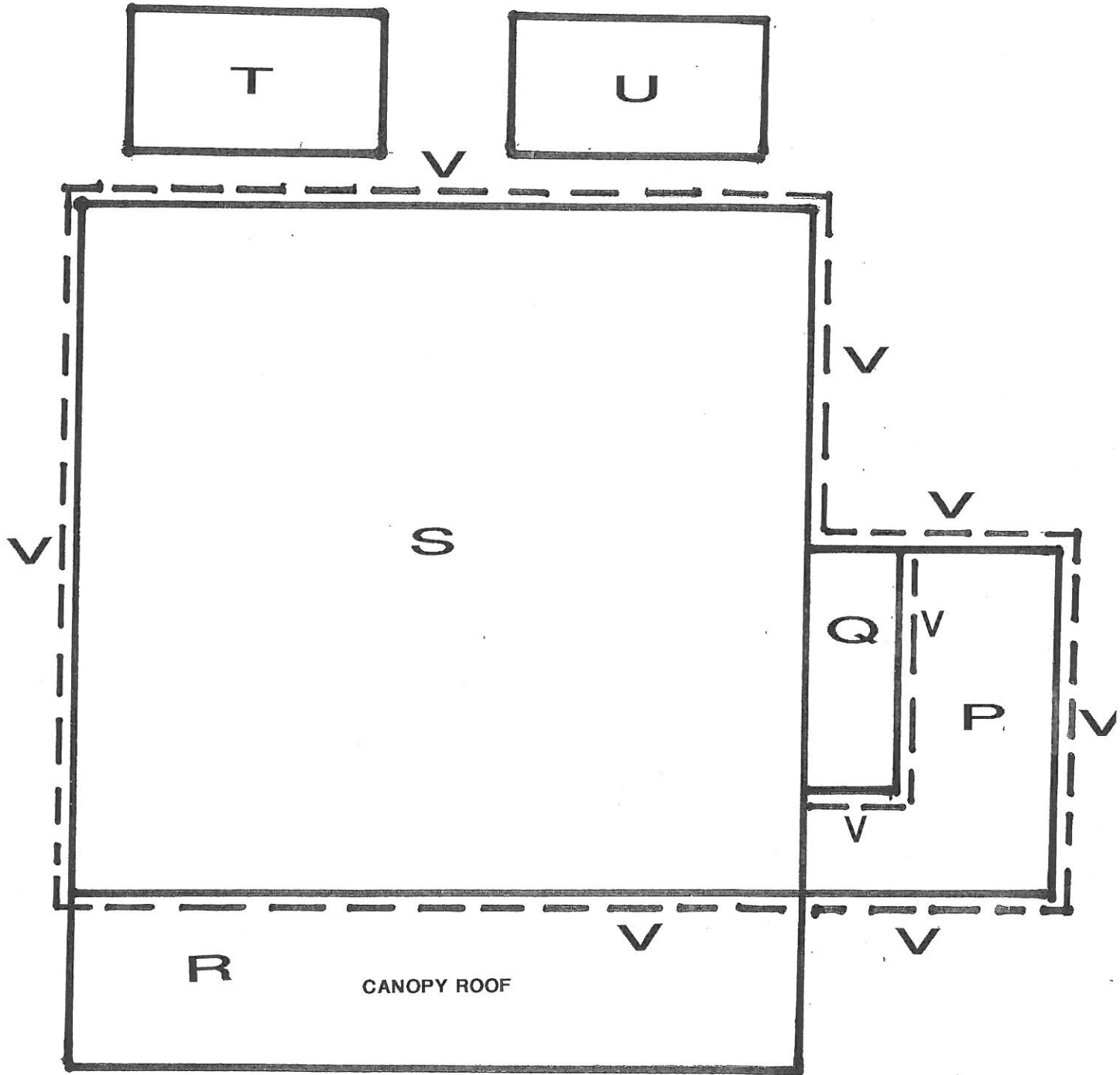




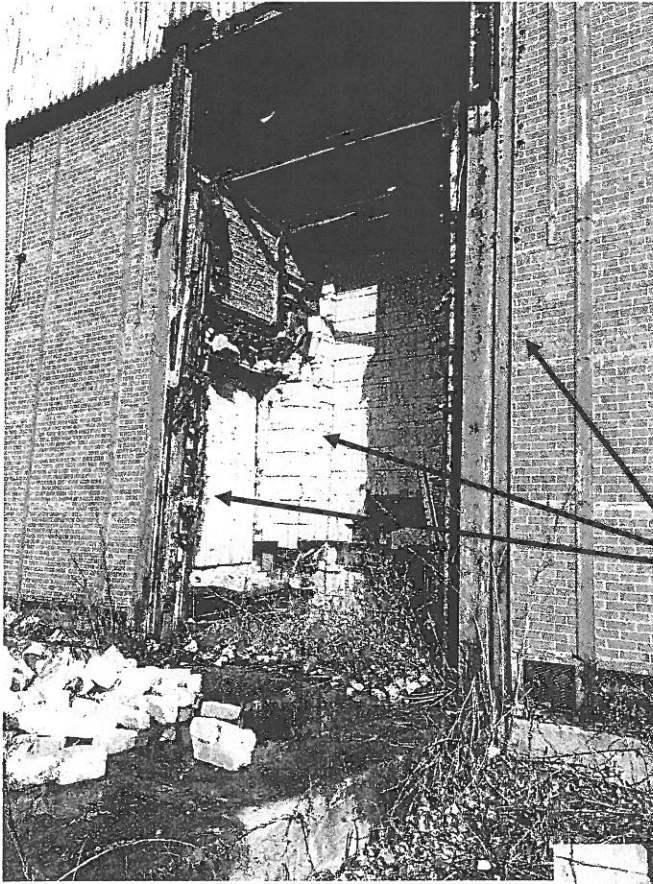
LOCKER ROOM

DRAWING A4

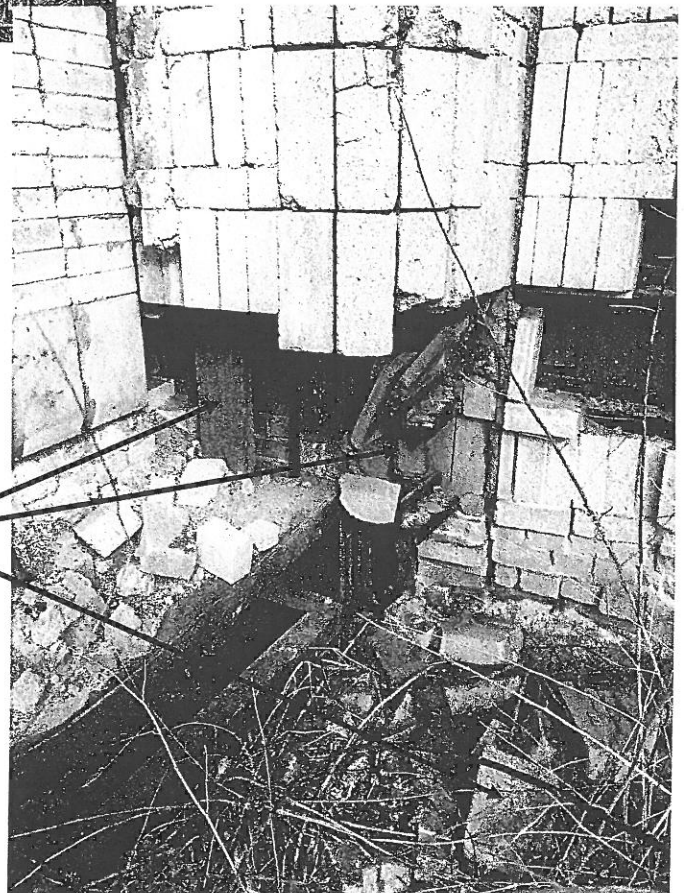
ROOFTOP LEVELS



DRAWING A5

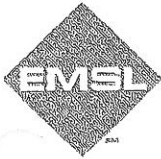


The solid brick
(red, yellow & white colored)
or mortar material does
NOT contain asbestos.



Asbestos Containing
block insulation
Gray colored, soft,
block shaped material was
installed behind the solid
bricks within what remains of
the Combustion/Expansion
chamber.

EMSL - Laboratory Results & Sampling Locations



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
 Tel/Fax: (800) 220-3675 / (856) 786-5974
 http://www.EMSL.com / cinnaslab@EMSL.com

EMSL Order: 041602330
 Customer ID: VORT50
 Customer PO:
 Project ID:

Attention: John Carbone
 Vortex, Inc.
 PO Box 6060
 Warwick, RI 02887-6060

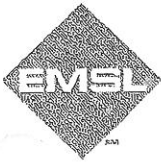
Phone: (401) 640-9331
 Fax: (401) 738-7869
 Received Date: 02/01/2016 8:40 AM
 Analysis Date: 02/02/2016
 Collected Date:

Project: #16-062

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1 041602330-0001	9" Floor Tile Red	Red Non-Fibrous Homogeneous	HA: INT	98% Non-fibrous (Other)	2% Chrysotile ✓
2 041602330-0002	Mastic for # 1	Black Non-Fibrous Homogeneous	HA: INT	94% Non-fibrous (Other)	6% Chrysotile ✓
3 041602330-0003	Interior Metal Window Glaze	Tan Non-Fibrous Homogeneous	HA: INT	97% Non-fibrous (Other)	3% Chrysotile ✓
4 041602330-0004	Metal Window Frame Caulking	Tan/Black Non-Fibrous Homogeneous	HA: I	98% Non-fibrous (Other)	2% Chrysotile ✓
5 041602330-0005	Pipe Lagg Insulation Air Cell	Brown Fibrous Homogeneous	HA: I	60% Cellulose 25% Non-fibrous (Other)	15% Chrysotile ✓
6 041602330-0006	Pipe Fitting Insulation	White Fibrous Homogeneous	HA: I	35% Non-fibrous (Other)	35% Amosite 30% Chrysotile ✓
7 041602330-0007	Cloth DN Vertical Pipe	Gray Fibrous Homogeneous	HA: I	20% Cellulose 60% Glass	20% Non-fibrous (Other) None Detected
8A 041602330-0008	Window Caulk	Gray/White Non-Fibrous Homogeneous	HA: E	95% Non-fibrous (Other)	5% Chrysotile ✓
8B 041602330-0009	Window Caulk	Gray Fibrous Homogeneous	HA: E	96% Non-fibrous (Other)	4% Chrysotile ✓
9 041602330-0010	Window Glaze (Metalic) Between Glass and Mullion	White Non-Fibrous Homogeneous	HA: E	100% Non-fibrous (Other)	None Detected
10 041602330-0011	Metal Window Glaze	Gray Non-Fibrous Homogeneous	HA: I	100% Non-fibrous (Other)	None Detected
11 041602330-0012	White Plaster Behind Tile/ Glue	White Non-Fibrous Homogeneous	HA: I	100% Non-fibrous (Other)	None Detected
041602330-0013	Ceramic Wall Tile	White Non-Fibrous Homogeneous	HA: I	100% Non-fibrous (Other)	None Detected

Initial Report From: 02/03/2016 08:20:57



EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnaslab@EMSL.com

EMSL Order: 041602330
Customer ID: VORT50
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
13 041602330-0014	White Mortar Between Ceramic Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: I		
14 041602330-0015	Grey Adhesive Behind Yellow Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: I		
15 041602330-0016	Yellow Tile Base	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: I		
16 041602330-0017	Mastic/ Cement Grey Behind Tile	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: I		
17 041602330-0018	Pipe Riser Insulation	Gray Fibrous Homogeneous		85% Non-fibrous (Other)	5% Amosite 10% Chrysotile ✓
			HA: I		
18 041602330-0019	Cloth Wrapped Around Pipe	Black/Green Non-Fibrous Homogeneous	15% Synthetic 25% Glass	60% Non-fibrous (Other)	None Detected
			HA: I		
19 041602330-0020	Door Glaze @ Glass Between Glass and Metal Frame	Tan/White Fibrous Homogeneous		96% Non-fibrous (Other)	4% Chrysotile ✓
			HA: IE		
20 041602330-0021	Door Frame Caulking	Gray/Green Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile ✓
			HA: I		
21 041602330-0022	LL - Fitting Insulation @ Storage	Gray Fibrous Homogeneous		68% Non-fibrous (Other)	12% Amosite 20% Chrysotile ✓
			HA: I		
22 041602330-0023	Fitting Insulation	Gray Fibrous Homogeneous		72% Non-fibrous (Other)	20% Amosite 8% Chrysotile ✓
			HA: I		
23 041602330-0024	CMU Block	Gray/Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: I		
24 041602330-0025	CMU Mortar	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
			HA: I		
25 041602330-0026	Front Entrance Silver Metal Window Glaze	Gray/White Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile ✓
			HA: E		
26 041602330-0027	Front Entrance Caulking on 2 Sides	Gray Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile ✓
			HA: E		
27 041602330-0028	Lower Roof Flashing @ Building	Black Fibrous Homogeneous		85% Non-fibrous (Other)	15% Chrysotile ✓
			HA: E		

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 200 Route 130 North Cinnaminson, NJ 08077
 Tel/Fax: (800) 220-3675 / (856) 786-5974
 http://www.EMSL.com / cinnaslab@EMSL.com

EMSL Order: 041602330
 Customer ID: VORT50
 Customer PO:
 Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
28 041602330-0029	Lower Roof Flashing @ Building		HA: E		Stop Positive (Not Analyzed) ✓
29 041602330-0030	Lower Roof Flashing @ Building		HA: E		Stop Positive (Not Analyzed) ✓
30 041602330-0031	Lower Roof Field	Black Fibrous Homogeneous	HA: E	95% Non-fibrous (Other)	5% Chrysotile ✓
31 041602330-0032	Lower Roof Field		HA: E		Stop Positive (Not Analyzed) ✓
32 041602330-0033	Lower Roof Field		HA: E		Stop Positive (Not Analyzed) ✓
33 041602330-0034	Upper Roof Flashing	Black Fibrous Homogeneous	HA: E	85% Non-fibrous (Other)	15% Chrysotile ✓
34 041602330-0035	Upper Roof Flashing		HA: E		Stop Positive (Not Analyzed) ✓
35 041602330-0036	Upper Roof Flashing		HA: E		Stop Positive (Not Analyzed) ✓
36 041602330-0037	Upper Roof Field	Black Fibrous Homogeneous	25% Cellulose HA: E	75% Non-fibrous (Other)	None Detected
37 041602330-0038	Upper Roof Field	Black Fibrous Homogeneous	25% Cellulose HA: E	75% Non-fibrous (Other)	None Detected
38 041602330-0039	Upper Roof Field	Black Fibrous Homogeneous	25% Cellulose HA: E	75% Non-fibrous (Other)	None Detected
39 041602330-0040	Red Brick	Red Non-Fibrous Homogeneous	HA: E	100% Non-fibrous (Other)	None Detected
40 041602330-0041	Mortar	Gray Non-Fibrous Homogeneous	HA: E	100% Non-fibrous (Other)	None Detected
41 041602330-0042	Yellow Fire Brick	Tan Non-Fibrous Homogeneous	HA: R	100% Non-fibrous (Other)	None Detected
42 330-0043	Yellow Fire Brick	Tan Non-Fibrous Homogeneous	HA: R	100% Non-fibrous (Other)	None Detected

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EMSL Analytical, Inc.

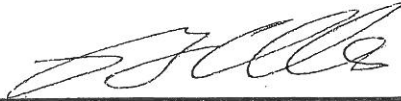
200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnaslab@EMSL.com

EMSL Order: 041602330
Customer ID: VORT50
Customer PO:
Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
43 041602330-0044	Board Insulation Soft Behind Brick	Gray Fibrous Homogeneous	HA: R	92% Non-fibrous (Other)	8% Chrysotile ✓
44 041602330-0045	Ash Debris	Gray Fibrous Homogeneous	HA: R	97% Non-fibrous (Other)	3% Chrysotile ✓

Analyst(s)
Alexis Kum (21)
Juli Patel (2)
Samantha Rundstorm-Cruz (16)


Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

Initial Report From: 02/03/2016 08:20:57



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200 Route 130 North Cinnaminson, NJ 08077
Tel/Fax: (800) 220-3675 / (856) 786-5974
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EMSL Order: 041603310
Customer ID: VORT50
Customer PO:
Project ID:

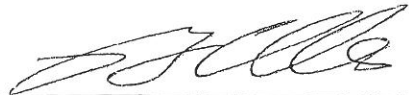
Attention: John Carbone
Vortex, Inc.
PO Box 6060
Warwick, RI 02887-6060
Phone: (401) 640-9331
Fax: (401) 738-7869
Received Date: 02/12/2016 8:00 AM
Analysis Date: 02/13/2016
Collected Date:
Project: 16-062B

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
50 041603310-0001	Window Glaze Metal	Gray Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile ✓
51 041603310-0002	Window Glaze Metal	Gray Non-Fibrous Homogeneous		97% Non-fibrous (Other)	3% Chrysotile ✓

Analyst(s)

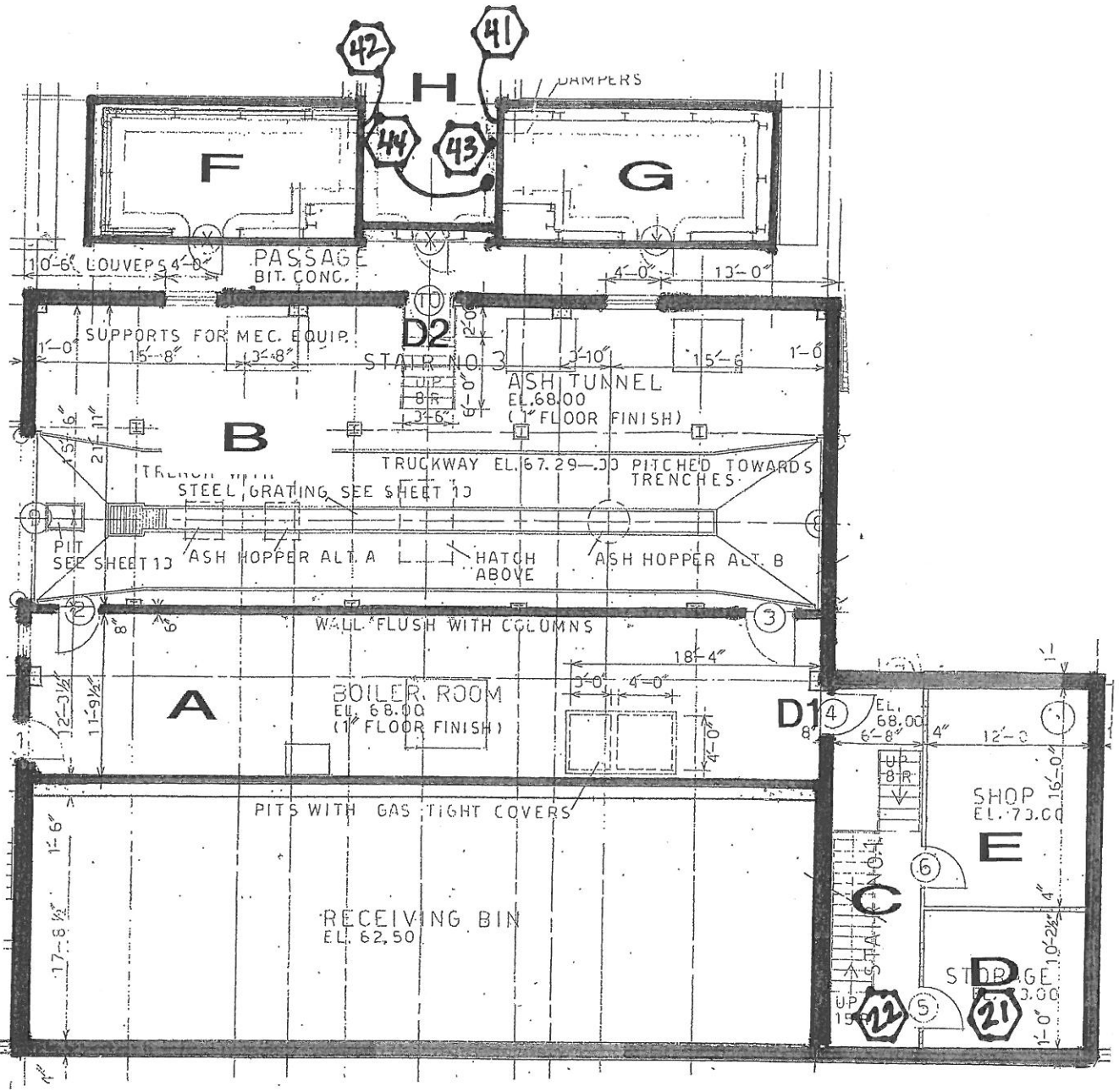
Keishla Vazquez Caraballo (1)
Steven Quinn (1)


Benjamin Ellis, Laboratory Manager
or Other Approved Signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NVLAP Lab Code 101048-0, AIHA-LAP, LLC-IHLAP Lab 100194, NYS ELAP 10872, NJ DEP 03036, PA ID# 68-00367

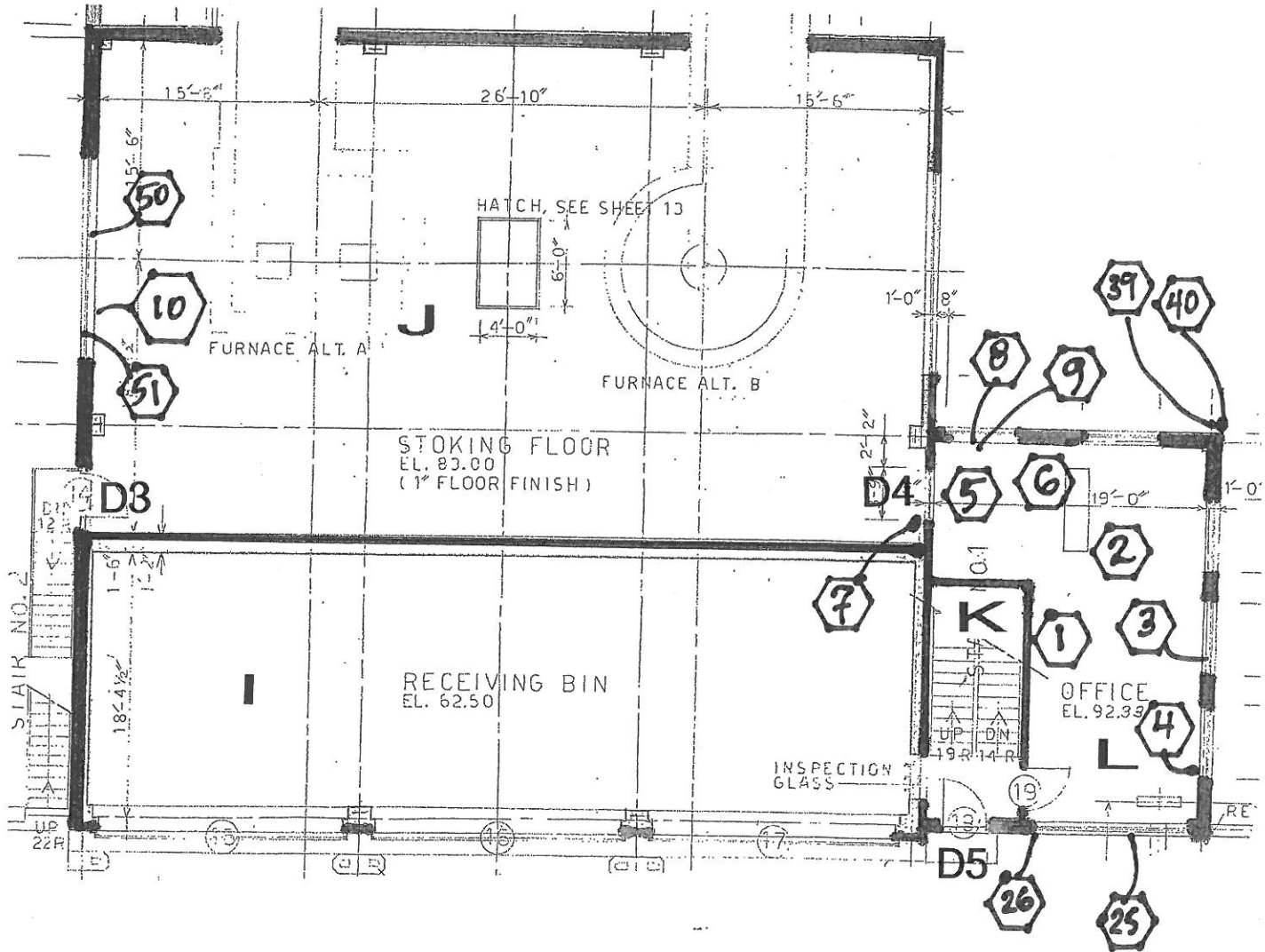
Initial Report From: 02/13/2016 09:33:35

ASH TUNNEL LEVEL



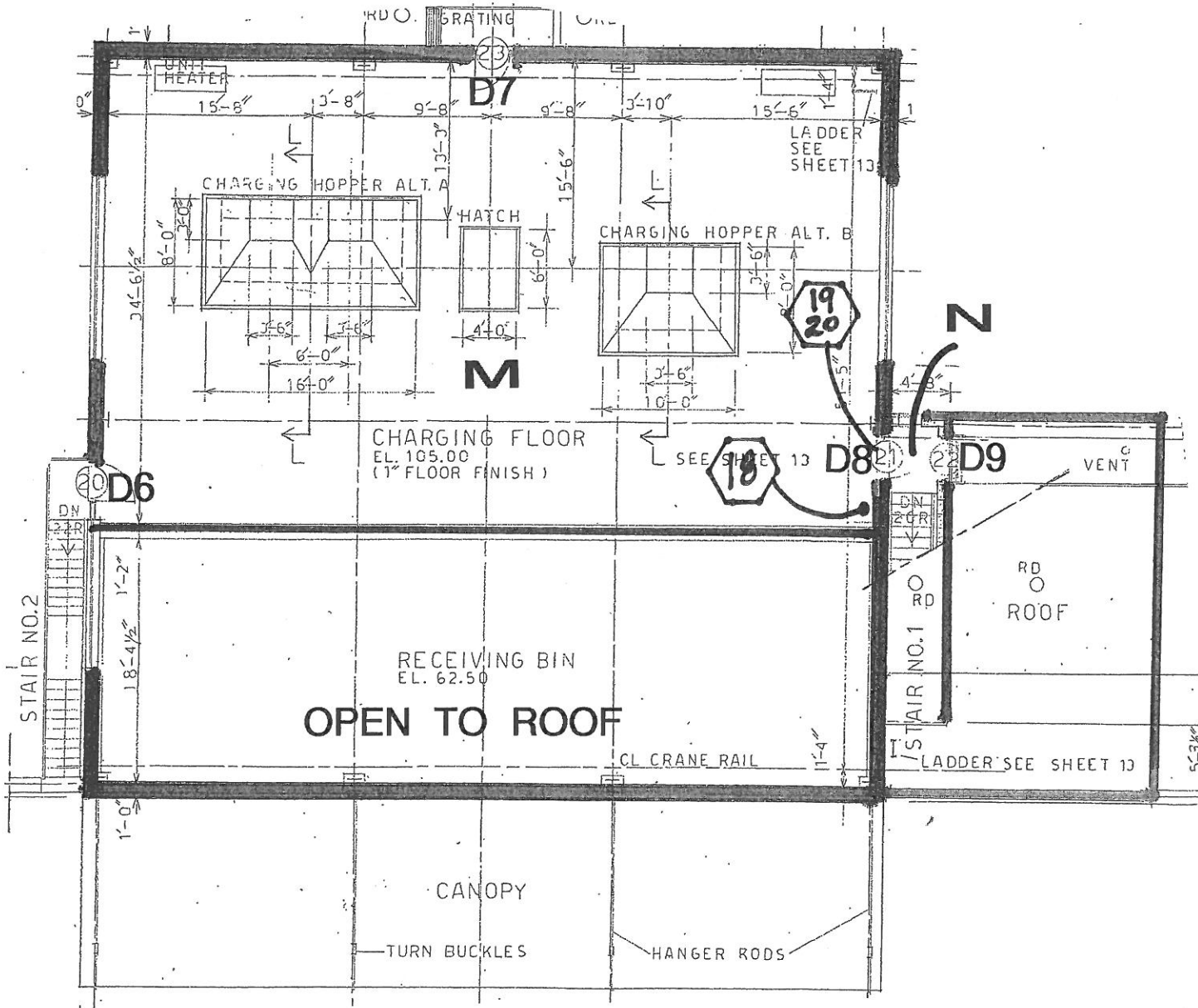
DRAWING A1

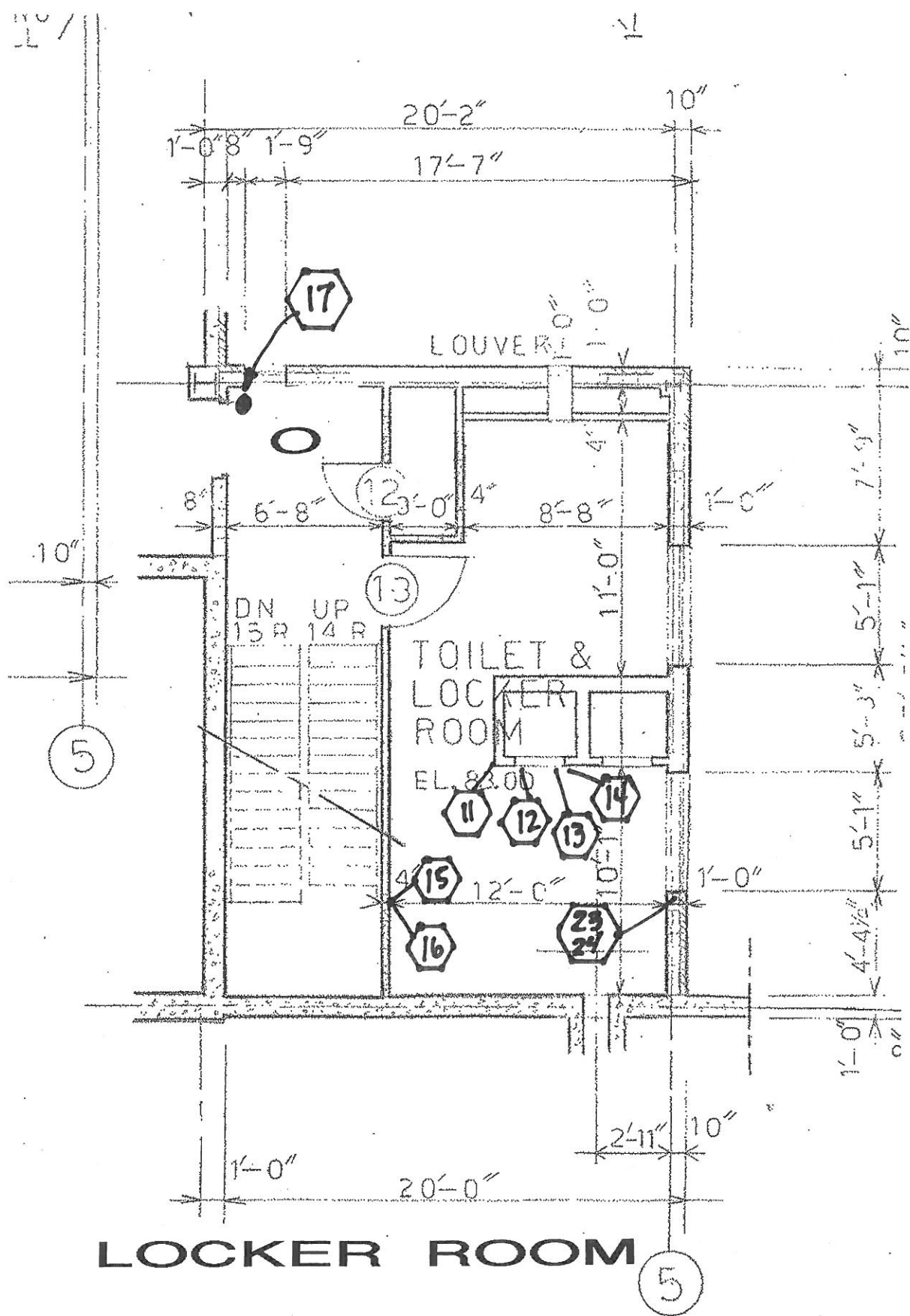
STOCK AND DUMPING LEVEL



DRAWING A2

CHARGING LEVEL

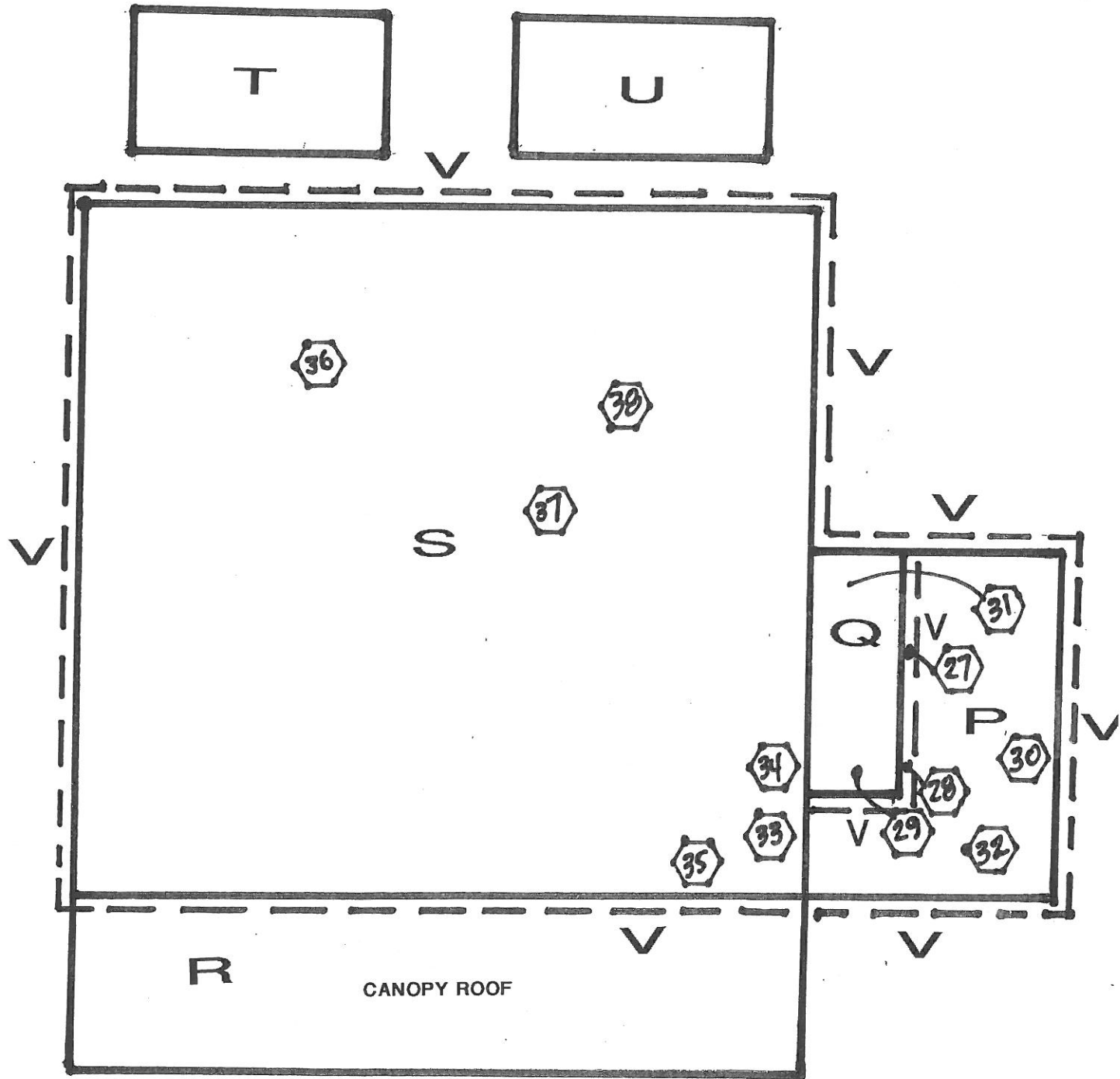




LOCKER ROOM

DRAWING A4

ROOFTOP LEVELS



DRAWING A5

John Carbone - RI Asbestos Licenses



ENVIRONMENTAL MANAGEMENT • CONSULTING • TRAINING
MAILING ADDRESS: P.O. BOX 6060 • WARWICK, RI 02887-6060

**Rhode Island Department of Health
Asbestos Program
Asbestos Inspector**

JOHN CARBONE

Exp. Date: 03/31/2016
License #: AAC-0177
Member of C.O.N.E.S.



**Rhode Island Department of Health
Asbestos Program
Asbestos Management Planner**

JOHN CARBONE

Exp. Date: 03/31/2016
License #: AAC-0177
Member of C.O.N.E.S.



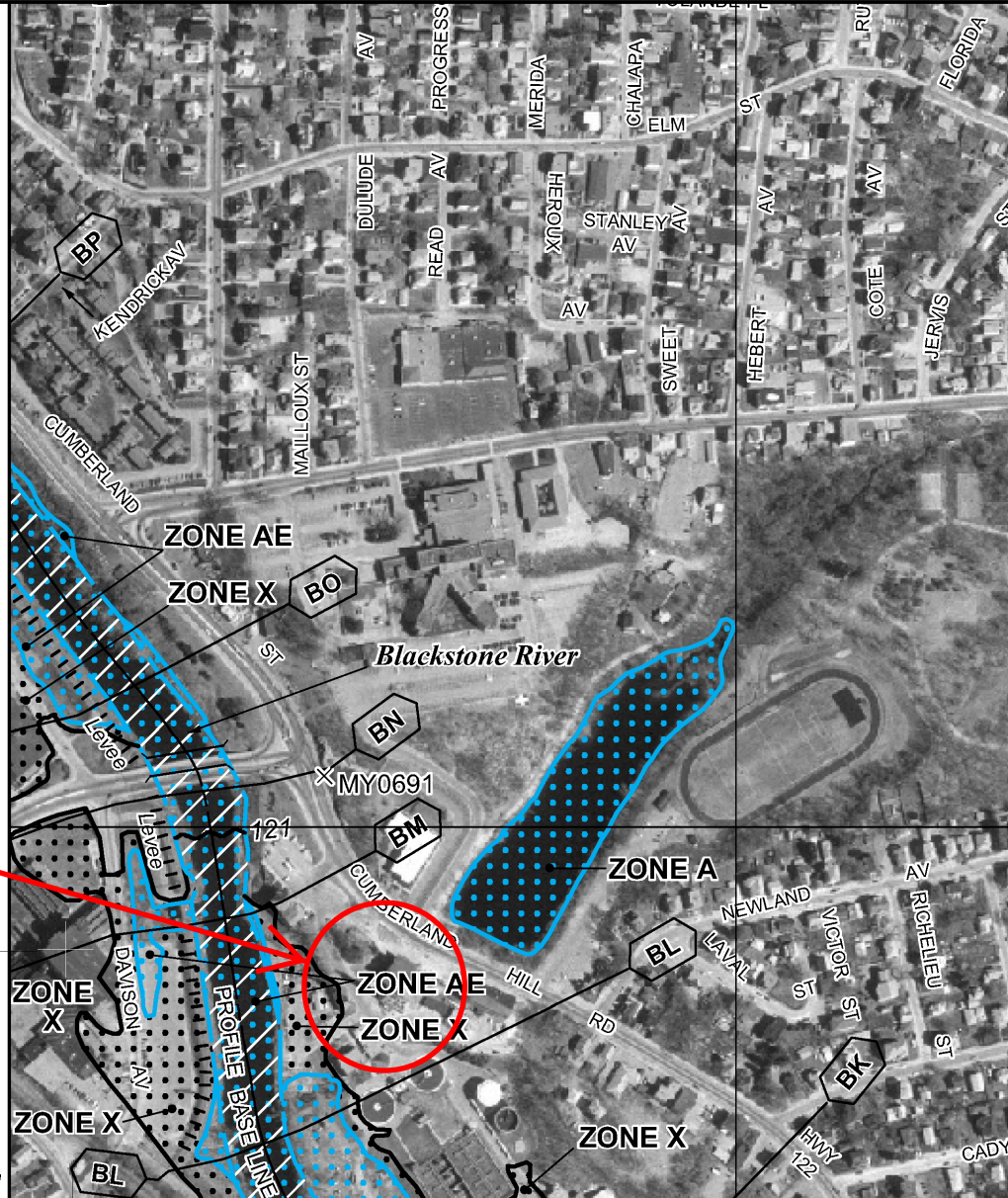
**Rhode Island Department of Health
Asbestos Program
Asbestos Project Designer**

JOHN CARBONE

Exp. Date: 03/31/2016
License #: AAC-0177
Member of C.O.N.E.S.



Appendix D
Flood Mapping

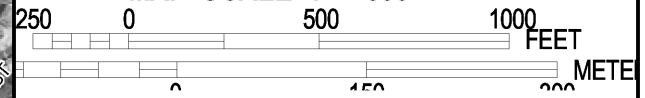


46°53'00.00" N
 42°00'00.00"
 71°30'00.00"

330000 FT



MAP SCALE 1" = 500'



NFIP

PANEL 0088G

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP
PROVIDENCE COUNTY,
RHODE ISLAND
 (ALL JURISDICTIONS)

PANEL 88 OF 451
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WOONSOCKET, CITY OF	445411	0088	G

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
44007C0088G

EFFECTIVE DATE
MARCH 2, 2009

Federal Emergency Management Agency

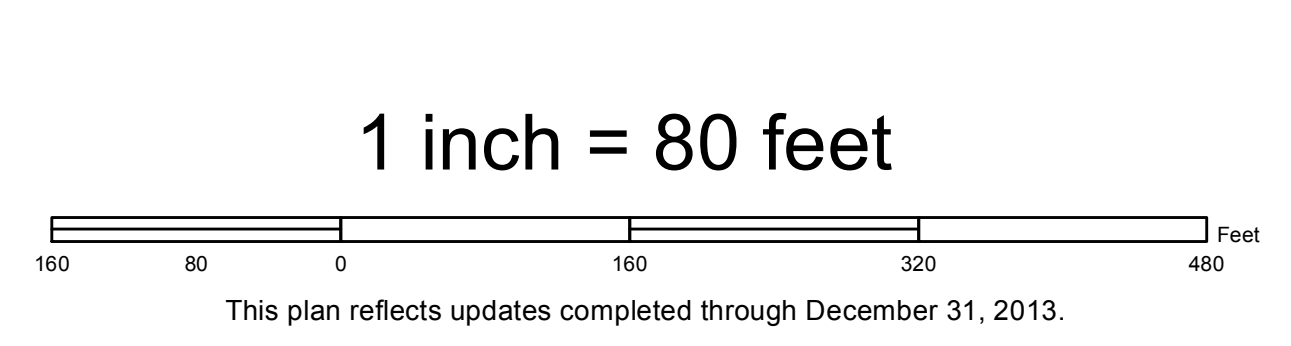
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix E
Assessor's Map



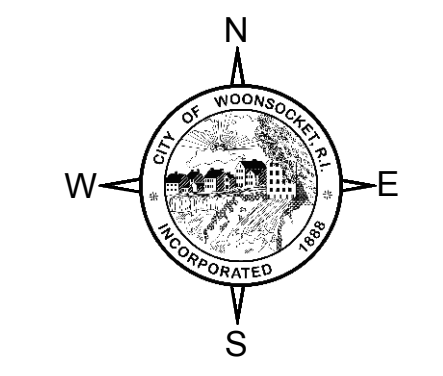
Notes:
 1. THIS IS NOT A LEGAL DOCUMENT
 2. Property line information was developed from the City of Woonsocket's Assessor's plat maps.
 3. All information shown on this map are subject to verification.

Legend	
29-113	Lot Number
12000 sf	Lot Area
---	Parcel Boundary Line w/ Dimension
---	Easement Line
---	Town Line
---	Rights-of-Way Line
---	Paper Street
CEM	Cemetery



	A3	A4	A5	A6	A7	A8
	B3	B4	B5	B6	B7	B8
	C3	C4	C5	C6	C7	C8
	D3	D4	D5	D6	D7	D8
	E3	E4	E5	E6	E7	E8
	F3	F4	F5	F6	F7	F8
	G3	G4	G5	G6	G7	G8
	H3	H4	H5	H6	H7	H8

Sheet Index

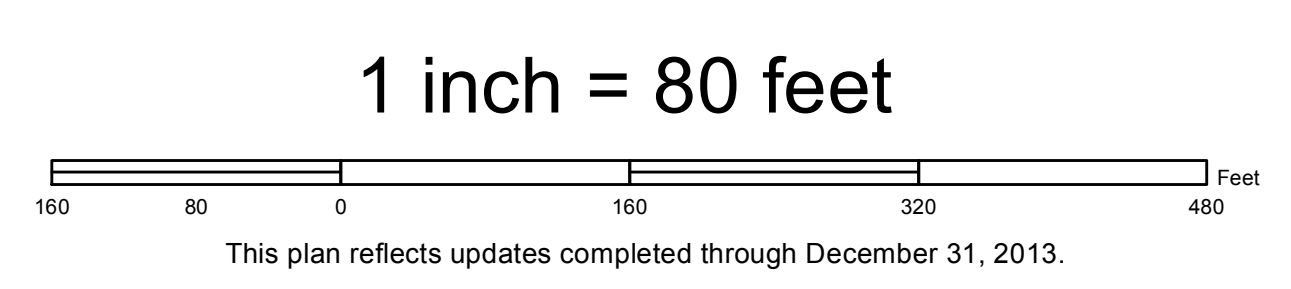


Tax Map
 City of Woonsocket
 Rhode Island
 Sheet No. D5



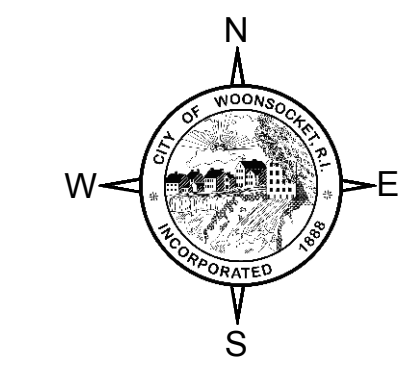
Notes:
 1. THIS IS NOT A LEGAL DOCUMENT
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Legend	
29-113	Lot Number
12000 sf	Lot Area
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---	Easement Line
---	Town Line
---	Right-of-Way Line
---	Paper Street
CEM	Cemetery



	A3	A4	A5	A6	A7
B1	B3	B4	B5	B6	B7
C1	C2	C3	C4	C5	C6
D1	D2	D3	D4	D5	D6
E1	E2	E3	E4	E5	E6
F1	F2	F3	F4	F5	F6
G1	G2	G3	G4	G5	G6
H1	H2	H3	H4	H5	H6

Sheet Index



Tax Map
 City of Woonsocket
 Rhode Island
 Sheet No. E5