



**NESHAP RENOVATION / DEMOLITION INSPECTION OF
ASBESTOS CONTAINING MATERIALS
AND OTHER HAZARDOUS WASTE MATERIALS
FOR THE PROPERTY KNOWN AS:**

347 W Southern Ave
Muskegon, MI 49441

Prepared for:

City of Muskegon
933 Terrace Street, Room 202
Muskegon, MI 49440
231-724-6760

Prepared By:

ETC - Environmental Services
38900 Huron River Drive
Romulus, Michigan 48174
(734) 955-6600

January 19th, 2016

ETC Job #: 177223

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1. Introduction

The City of Muskegon contracted ETC - Environmental Services (ETC) to perform a renovation / demolition inspection of the building located at 347 W Southern Ave, Muskegon, MI 49441. This inspection was conducted on January 19th, 2016.

The EPA under the National Emission Standards for Hazardous Air Pollutants (NESHAPs) asbestos rule requires that prior to the start of a renovation and/or demolition project, the building must be inspected for asbestos containing materials (ACM's). The purpose of this inspection was to determine the presence and quantity of friable or potentially friable ACM's. Depending on the ACM found and the condition that it is in, removal of the material may be necessary before demolition work is to begin. Prior to the start of a demolition project, it is necessary that friable or potentially friable ACM's be removed.

ETC's certified inspector, Aaron Yankee and Stuart Yankee, conducted the ACBM inspection and identified materials suspected of containing asbestos. Aaron Yankee and Stuart Yankee's State of Michigan Asbestos Building Inspector's certification number is A-42490 and A-4115.

Wherever potential asbestos materials were found, data was collected and recorded regarding quantities and observed conditions of the suspect material. As required by the Occupational Safety and Health (OSHA) and the Environmental Protection Agency (EPA), three (3) samples of each type of material were taken in different locations to determine actual asbestos content.

Included along with this report are copies of the bulk sample results, a site map showing sample locations and a copy of the State of Michigan Notification of Intent to Renovate/Demolish. This information will be necessary for the asbestos abatement contractor selected to perform asbestos abatement activities in the house. ETC has included its information on the second page.

2. Information about Asbestos Inspections

a. Sampling Procedures

Representative bulk samples of suspect asbestos containing building materials were randomly collected within each building area. The materials sampled were broken down into distinct homogenous (similar) materials. Homogenous material determination was based on the following criteria:

- Similar physical characteristics (same color and texture, etc.)
- Application (sprayed-on, troweled-on, assembly into a system etc.)
- Material function (Thermal insulation, floor tile, wallboard system etc.)

It is important to note that some companies are only taking one sample of select non-friable materials. While this procedure is allowed under the NESHAPs regulation, the OSHA standard suggests a minimum of three samples of each

homogeneous material. This is a better approach due the potential errors in the analytical method used. **To provide the most accurate information possible and be sure of our results, ETC chooses to take three samples of each sampled material.**

Additionally, some inspection companies have taken to assuming that materials contain asbestos rather than paying for the time and expenses of sampling them. This is not if the clients best interest. If materials are being assumed to contain asbestos, the client must treat them as asbestos containing even if they are not. This can lead to significantly increased costs for the building owner. **In general, ETC only assumes materials to be asbestos when sampling them will ruin their integrity (i.e. fire doors) or when they are too dangerous to sample (i.e. live electrical lines).**

b. PLM Analysis Methodology

PLM samples were analyzed utilizing the Environmental Protection Agency's Test Methods: Methods for the determination of Asbestos in Bulk Building Materials (EPA 600/R-93/116, July 1993) and the McCrone Research Institute's The Asbestos Particle Atlas as method references. Additional treatment and tests may be required to accurately define composition (i.e. ashing, extraction, acetone treatment, and TEM).

Analysis was performed by using the bulk sample for visual observation and slide preparation(s) for microscopic examination and identification. The samples analyzed for asbestos (chrysotile, amosite, crocidolite, anthophyllite, and actinolite/tremolite), fibrous non-asbestos constituents (mineral wool, cellulose, etc.) and non-fibrous constituents. Using a stereoscope, the microscopist visually estimated relative amounts of each constituent by determining the volume of each constituent in proportion to the total volume of the sample.

According to NESHAP requirements any bulk sample that has asbestos content above 0% but below 10% should be point counted for final determination of percentage. **Please note, the contract DID NOT include point counting as defined in NESHAP.** Should City of Muskegon wish to have this additional analysis conducted, ETC can send any samples in this range for point counting. However, this will require additional charges for analysis. Therefore, for any samples in the range above 0% but below 10% these results can only be considered estimates.

c. Interpretation of Inspection Results

A material is considered by OSHA, the EPA and the State of Michigan to be asbestos-containing if at least one sample collected from the homogenous material has asbestos fibers present in a concentration greater than one percent (>1 %).

A summary of the materials sampled, asbestos content, quantities and locations can be found on the Chart A in Section 4.0 – Summary and Conclusions.

d. Other Hazardous Materials

Additionally, a chart showing other hazardous materials (above the household quantity limitations) found at the site is included in Chart B – Section 4.0 – Summary and Conclusions. This lists non-asbestos materials that may be hazardous and require special handling and disposal requirements. Items that might be in this category include things like mercury switches, florescent lighting tubes, halogen lights, Freon in refrigeration units, pesticides, herbicides, paints, solvents, etc.

However, under the Resource Conservation and Recovery Act (RCRA) that addresses hazardous wastes, there is residential household quantity exclusion. Therefore, these materials will only be listed in this chart if they are present in quantities larger than what would be expected in a normal household. For instance, if the home was a farm and had a 55 gallon drum of pesticide present, this would be listed in Chart B. On the other hand if there were a few pesticide containers present as would be found in most homes these materials would not be listed.

3. Regulatory Requirements

There are two main regulations that affect renovation / demolition of residential homes and asbestos materials. The MIOSHA asbestos construction standard has requirements to protect the workers performing the renovation / demolition while the EPA – NESHAPs regulation has requirements that protect the general public and environment.

a. MIOSHA Construction Asbestos Regulations

The MIOSHA standard establishes a permissible exposure limit (PEL) average over an 8 hour day. This means that this is the maximum level of asbestos that workers and/or employees can be exposed to without respirator protection and protective clothing. Should air sampling during renovation or demolition activities be at or near the PEL the employer will have to:

- Notify Workers
- Worker Training
- Post Danger Signs
- Establish periodic air monitoring regulated areas, and decontamination facilities
- Provide respiratory protection and personnel protective clothing
- Employee Respiration Monitoring
- Record keeping

- Medical Surveillance (if employee will be exposed 30 days per year or more).

Until recently, only schools were federally mandated to conduct asbestos inspections of their buildings. However, with the passage of new MIOSHA regulations, all building owners (in this case City of Muskegon) is now required to notify all renovation / demolition workers of presence, location and quantity of all asbestos containing building materials within the building.

In most cases, it is more practical to have an asbestos contractor removal the ACM from the building prior to renovation / demolition than have the renovation / demolition contractor comply with all these requirements.

b. NESHAP Requirements

Prior to beginning a renovation or demolition project, NESHAP (enforced in Michigan by the Department of Environmental Quality – MDEQ) requires a full inspection of the following materials to determine their asbestos content:

- Friable Materials
- Category 1 – Non-friable Materials (Packings, gaskets, resilient floor covering, and asphalt roofing products)
- Category II – Non-friable Materials (All other non-friable materials)

In general, MDEQ requires any identified asbestos materials to be removed prior to renovation or demolition activities that would dislodge, disturb or otherwise affect these materials. There is an exception that if a licensed supervisor will state in writing that the material will not become friable during the renovation / demolition process it may be left in the building. However, be very careful with this exemption. MDEQ has stated that they believe that the only materials that MIGHT qualify for this exemption would be roofing felt and asphalt roofing materials. In order to use even this small exemption, the following would be required from the demolition contractor:

- A licensed asbestos abatement supervisor will sign that the material will not become friable
- The supervisor will have to be on-site during all renovation or demolition to insure that material stays intact.
- If MDEQ reviews that site and finds the material crumbled or disturbed both the contractor and building owner may be cited up to \$27500 per day.
- The waste generated from the activity must be taken to an asbestos dump and they must be informed that the waste is mixed asbestos waste.

It is obviously very expensive and difficult to try and leave ACM within and area / building during renovation or demolition activities. Therefore, ETC recommends that all ACM be removed. This is why ETC does not assume materials to be ACM.

c. Notification Requirements

When performing abatement work within the State of Michigan, notification requirements depend on the quantity of materials and the friability of the material being removed.

If removing friable material above >160 square feet and / or 260 linear feet, the contractor must provide a ten working day notification to Michigan Department of Environmental Quality (MDEQ) and a ten calendar day notification to Michigan Department of Licensing and Regulatory Affairs (LARA) – Asbestos Program. If only non-friable materials are being removed, MDEQ does not want a notification.

If removing above >15 square feet but < 160 square feet, or > 10 linear feet but < 260 linear feet the contractor only needs to notify the LARA as stated above.

For removals of < 15 square feet or < 10 linear feet, not notification is required.

In conjunction with any notification to LARA, the contractor must pay a 1% fee for the project. This fee is to reflect 1% of the total abatement contract amount.

d. Abatement Requirements

Any company hired to remove identified ACM must insure that all asbestos companies, supervisors, workers are be licensed by the LARA. Additionally, these companies must insure that:

- The State of Michigan must be notified of the work in advance
- An asbestos supervisor must be on-site at all times when work is occurring
- All work must be completed within regulated work areas
- All work must be completed utilizing asbestos work practices defined in the MIOSHA regulations
- Have on-site personnel sampling conducted during the removal activities
- The contractor must request and pass (below 0.05 f/cc) a final asbestos clearance performed by a neutral third party prior to dismantling and leaving the site.
- Meet all other current regulations and standards.

In addition to these requirements, ETC strongly recommends that City of Muskegon insure that they receive the following documents from the contractor prior to making final payment:

- Written / signed documentation from the supervisor if any asbestos materials are to be left in place during renovation or demolition (Not recommended)
- Copy of the asbestos abatement notification
- Copy of the personnel monitoring during the work

- Copy of the final asbestos clearance report

By requiring these documents, City of Muskegon will substantially reduce their liability should something occur during the asbestos removal at this site.

4. Summary and Conclusions

ETC has endeavored to identify potential asbestos containing materials (ACM) that were accessible (without destructive testing) at the time of the inspection, other potential ACM may be buried or inaccessible at the time of the initial survey.

As has been evidenced on numerous other demolition and renovation projects, when tearing out or demolishing existing building surfaces, it is very common to encounter other building materials that were not accessible during the initial testing for ACM or lead / cadmium painted surfaces. It is therefore incumbent on City of Muskegon or their selected construction / renovation contractor to refer to the chart of sampled materials consistently during the renovation process. If materials are encountered during this process that are not clearly identifiable on the initial survey chart, ETC should be called to test and verify the asbestos / lead / cadmium content of these items.

ETC cannot be held responsible for materials encountered after the initial survey is completed unless we are contacted and given the opportunity to test and verify the material content. The costs associated with this additional testing are not included within the scope of this project and will incur additional charges for the additional sampling and analysis.

On the following charts, please find:

- Chart A - Is a summary of the materials that were sampled. Materials that test positive for asbestos have been bolded to make identification easier. ***If additional materials are encountered that were not previously identified, the contractor is responsible to contact ETC and have these materials tested. These additional sampling costs are not included in the scope of work or price for this survey.***

Quantities that are listed are estimates only; in general, listed quantities represent only what was visible during testing. It is likely that where ACM has been identified throughout specific floors, similar materials and quantities exist on other like floors. It is the contractors'/client's responsibility to verify all amounts of asbestos identified during any bid process, or during future renovation and/or demolition activities. Materials that are identical in both relative location and physical description to already tested materials listed in this report should always be assumed to be ACM.

- Chart B – Is a list of other hazardous materials (above RCRA household quantity levels) that will require special handling and disposal by the contractor.

Chart A – Materials Sampled and Asbestos Content				
Material #	Material Description	Asbestos	Quantity	Location (Refer to map in Appendix B)
1	Plaster, white base/white skim	No	9,000 SF	Throughout
2	Duct insulation, brown paper (boots)	Yes	5 SF	Rooms 1, 2
3	Drywall, white	No	7,000 SF	Throughout
4	Seam tape, white	No	7,000 SF	Throughout
5	Mud/Joint Compound, White	No	7,000 SF	Throughout
6	Subfloor ,under ceramic	No	900 SF	Rooms 5,6,11,12
7	Mortar – subfloor, grey	No	900 SF	Rooms 11,12,5,6
8	Linoleum, grey, black paper	No	10 SF	Room 10
9	Linoleum, tan streak, under carpet	No	400 SF	Rooms 13, 14,16
10	Stack Cement, grey	No	2 SF	Basement 9
11	House Wrap, brown, over wood.	No	3,500 SF	Ext. House
12	Shingle, siding. Red/Black. Vinyl.	No	3,500 SF	Ext. House
13	Roof Shingles, black	No	2,500 SF	Exterior

Chart B – Other Hazardous Materials Located
(Above the household quantity Limitations)

Material #	Material Description	Quantity	Location
1	Refrigerator , stove , microwave	1 of each	Room 12
2	TV's and electronics	5	Rooms 13,14,16
3	Paint Can	1 Gallon	Basement 9
4	Smoke Detector	4	Rooms 13,1,2,3,4
5	Thermostats	1	Room 4

5. Inspector's Information

All inspection work was completed by a Michigan certified asbestos abatement inspector as detailed below.

This report reviewed and submitted by:



Aaron Yankee and Stuart Yankee
State of Michigan Certified Asbestos Building Inspector
State of Michigan Card #: A-42490 and A-4115

APPENDICES

APPENDIX A

POLARIZED LIGHT MICROSCOPY ASBESTOS ANALYSIS RESULT FORMS

ENVIRONMENTAL TESTING LABORATORIES, INC.



38900 HURON RIVER DRIVE, SUITE 200
ROMULUS, MICHIGAN 48174
(734) 955-6600
FAX: (734) 955-6604

REVISED REPORT

To : Environmental Testing And Consulting Inc.
38900 Huron River Drive
Romulus, MI 48174

Project Location : Vacant Residence
347 W. Southern, Muskegon, MI

Attention : Samantha Ferguson

Client Project : N/A

ETC Job : 177223

Report Date : 1/21/2016

Login #	Sample ID	Work Requested	Completed
389937	01A	Asbestos Analysis	01/21/2016
389938	01B	Asbestos Analysis	01/21/2016
389939	01C	Asbestos Analysis	01/21/2016
389940	01D	Asbestos Analysis	01/21/2016
389941	01E	Asbestos Analysis	01/21/2016
389942	01F	Asbestos Analysis	01/21/2016
389943	01G	Asbestos Analysis	01/21/2016
389944	02A	Asbestos Analysis	01/21/2016
389945	02B	Asbestos Analysis	01/21/2016
389946	02C	Asbestos Analysis	01/21/2016
389947	03A	Asbestos Analysis	01/21/2016
389948	03B	Asbestos Analysis	01/21/2016
389949	04A	Asbestos Analysis	01/21/2016
389950	04B	Asbestos Analysis	01/21/2016
389951	05A	Asbestos Analysis	01/21/2016
389952	05B	Asbestos Analysis	01/21/2016
389953	06A	Asbestos Analysis	01/21/2016
389954	06B	Asbestos Analysis	01/21/2016
389955	07A	Asbestos Analysis	01/21/2016
389956	07B	Asbestos Analysis	01/21/2016

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Login #	Sample ID	Work Requested	Completed
389957	08A	Asbestos Analysis	01/21/2016
389958	08B	Asbestos Analysis	01/21/2016
389959	09A	Asbestos Analysis	01/21/2016
389960	09B	Asbestos Analysis	01/21/2016
389961	10A	Asbestos Analysis	01/21/2016
389962	10B	Asbestos Analysis	01/21/2016
389963	11A	Asbestos Analysis	01/21/2016
389964	11B	Asbestos Analysis	01/21/2016
389965	12A	Asbestos Analysis	01/21/2016
389966	12B	Asbestos Analysis	01/21/2016
389967	13A	Asbestos Analysis	01/21/2016
389968	13B	Asbestos Analysis	01/21/2016

Reviewed by:



Quality Assurance Coordinator

Polarized Light Microscopy Asbestos Analysis Report

To : Environmental Testing And Consulting Inc.
 38900 Huron River Drive
 Romulus, MI 48174
Location : Vacant Residence
 347 W. Southern, Muskegon, MI

ETC Job : 177223
Client Project : N/A
Date Collected : 01/19/2016
Date Received : 01/21/2016
Date Analyzed : 01/21/2016

Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
389937 01A LR 1 1st W Wall Layer-1 Analyst: Alex Vande Guchte	Plaster	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
389937 01A LR 1 1st W Wall Layer-2 Analyst: Alex Vande Guchte	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
389938 01B BR 2 1st W Wall Layer-1 Analyst: Alex Vande Guchte	Plaster	White Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected
389938 01B BR 2 1st W Wall Layer-2 Analyst: Alex Vande Guchte	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
389939 01C BR 3 1st W Wall Layer-1 Analyst: Alex Vande Guchte	Plaster	White Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected
389939 01C BR 3 1st W Wall Layer-2 Analyst: Alex Vande Guchte	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
389940 01D DR 4 1st E Wall Layer-1 Analyst: Alex Vande Guchte	Plaster	White Non-Fibrous Homogenous	5% Cellulose	95% Other	None Detected
389940 01D DR 4 1st E Wall Layer-2 Analyst: Alex Vande Guchte	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
389941 01E BR 2nd FI Layer-1 Analyst: Alex Vande Guchte	Plaster	White Non-Fibrous Homogenous	5% Cellulose	95% Other	None Detected
389941 01E BR 2nd FI Layer-2 Analyst: Alex Vande Guchte	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
389942 01F KN 2nd FI Layer-1 Analyst: Alex Vande Guchte	Plaster	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
389942 01F KN 2nd FI Layer-2 Analyst: Alex Vande Guchte	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
389943 01G Bsmt Layer-1 Analyst: Alex Vande Guchte	Plaster	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
389943 01G Bsmt Layer-2 Analyst: Alex Vande Guchte	Skim Coat	White Non-Fibrous Homogenous		100% Other	None Detected
389944 02A Duct Boots LR 1 Analyst: Alex Vande Guchte	Duct Insulation (Boots)	Brown Fibrous Homogenous	80% Cellulose		20% Chrysotile
389945 02B Duct Boots BR 2 Analyst: Alex Vande Guchte		Not Analyzed			

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
389946 02C Duct Boots BR 2 Analyst: Alex Vande Guchte		Not Analyzed			
389947 03A Bath 1st Fl Analyst: Alex Vande Guchte	Drywall	White Non-Fibrous Homogenous	5% Cellulose	95% Other	None Detected
389948 03B BR 16 2nd Fl Analyst: Alex Vande Guchte	Drywall	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
389949 04A Bath 1st Fl Analyst: Alex Vande Guchte	Seam Tape	White Fibrous Homogenous	100% Cellulose		None Detected
389950 04B BR 16 2nd Fl Analyst: Alex Vande Guchte	Seam Tape	White Fibrous Homogenous	100% Cellulose		None Detected
389951 05A Bath 1st Fl Analyst: Alex Vande Guchte	Mud/Joint Compound	White Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
389952 05B BR 16 2nd Fl Analyst: Alex Vande Guchte	Mud/Joint Compound	White Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
389953 06A KN 1st FI Analyst: Alex Vande Guchte	Subfloor Under Ceramic	White Non-Fibrous Homogenous	5% Cellulose	95% Other	None Detected
389954 06B KN 2nd FI Analyst: Alex Vande Guchte	Subfloor Under Ceramic	White Non-Fibrous Homogenous	5% Cellulose	95% Other	None Detected
389955 07A KN 1st FI Analyst: Alex Vande Guchte	Mortar-Subfloor	Gray Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected
389956 07B KN 2nd FI Analyst: Alex Vande Guchte	Mortar-Subfloor	Gray Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected
389957 08A Stair Up 10 Layer-1 Analyst: Alex Vande Guchte	Linoleum	Gray Non-Fibrous Homogenous	5% Cellulose	95% Other	None Detected
389957 08A Stair Up 10 Layer-2 Analyst: Alex Vande Guchte	Paper Back	Black Fibrous Homogenous	70% Cellulose	30% Other	None Detected
389958 08B Stair Up 10 Layer-1 Analyst: Alex Vande Guchte	Linoleum	Gray Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected
389958 08B Stair Up 10 Layer-2 Analyst: Alex Vande Guchte	Paper Back	Black Fibrous Homogenous	70% Cellulose	30% Other	None Detected

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
389959 09A LR 13 2nd Fl Analyst: Alex Vande Guchte	Streaked Linoleum Under Carpet	Tan Fibrous Homogenous	70% Cellulose	30% Other	None Detected
389960 09B LR 13 2nd Fl Analyst: Alex Vande Guchte	Streaked Linoleum Under Carpet	Tan Fibrous Homogenous	70% Cellulose	30% Other	None Detected
389961 10A Bsmt 9 At Chimney Analyst: Alex Vande Guchte	Stack Cement	Gray Non-Fibrous Homogenous		100% Other	None Detected
389962 10B Bsmt 9 At Chimney Analyst: Alex Vande Guchte	Stack Cement	Gray Non-Fibrous Homogenous		100% Other	None Detected
389963 11A Ext S Side Entry Analyst: Alex Vande Guchte	House Wrap Under Wood	Brown Fibrous Homogenous	100% Cellulose		None Detected
389964 11B Ext S Side Entry Analyst: Alex Vande Guchte	House Wrap Under Wood	Brown Fibrous Homogenous	100% Cellulose		None Detected
389965 12A Ext S Side Entry Analyst: Alex Vande Guchte	Shingle Siding Under Vinyl	Red/Black Non-Fibrous Homogenous	5% Cellulose	95% Other	None Detected

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Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Asbestos
389966 12B Ext S Side Entry Analyst: Alex Vande Guchte	Shingle Siding Under Vinyl	Red/Black Non-Fibrous Homogenous	4% Cellulose	96% Other	None Detected
389967 13A S Side Entry Analyst: Alex Vande Guchte	Roof Shingle	Black Non-Fibrous Homogenous	1% Cellulose	99% Other	None Detected
389968 13B S Side Entry Analyst: Alex Vande Guchte	Roof Shingle	Black Non-Fibrous Homogenous	2% Cellulose	98% Other	None Detected



Lab Supervisor/Other Signatory



Analyst: Alex Vande Guchte

400 Point Count Results by EPA 600/R-93/116 PLM (denoted by "PC")
 Item 198.1: PLM Methods for Identifying and Quantitating Asbestos in Bulk Samples
 Item 198.6: PLM Methods for Identifying and Quantitating Asbestos in Non-Friable Organically Bound Bulk Samples
 EPA 600/R-93/116: Method for Determination of Asbestos in Bulk Building Materials
 EPA 600/M4-82-020: Interim Method for Determination of Asbestos in Bulk Insulation Samples

ETL, Inc. maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced without written approval by ETL, Inc. Test Method EPA 600/R-93-116 & EPA 600/M4-82/020 or NYSDOH-ELAP item 198.1 and/or 198.6 was used to analyze all samples. Matrix interference and/or resolution limits (i.e. detecting asbestos in non-friable organically bound materials) may yield false results in certain circumstances. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing. Interpretation and use of test results are the responsibility of the client. ETL, Inc. is not responsible for the accuracy of the results when requested to physically separate and analyze layered samples. Any PLM results below 10% should be re-analyzed using the EPA recommended Point Count method. Any material that has greater than 1% asbestos content is considered to be an Asbestos Containing Material (ACM). These materials are regulated by both OSHA and the EPA and must be treated accordingly. Results are related to only to samples that were tested.

Asbestos Material Sampling Summary Sheet

Surfacing materials

Revision date 5/7/2015

Job #: 177223		Building: 347 W. Southern Ave MUSKEGON			Date: 1-19-15		
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
01	Material: PLASTER	F	A	LIVING-1 1ST W. WALL	Throughout	9,000 SF	389937
	WHITE BASE		B	BED-2 1ST S. WALL			389938
	WHITE SKIM		C	BED-3 1ST W. WALL			389939
			D				389940
			E	BED-14 2ND FL			389941
			F	KITCHEN 2ND FL			389942
			G	BASEMENT			389943
	Material:						
	Material:						

000 SF = 3 samples

1000 - <5000 = 5 samples

>5000 = 7 samples

Asbestos Material Sampling Summary Sheet
TSI (Thermal System Insulation) materials

Revision date 5/7/2015

Job #: 177223		Building: 347 W. Southern Ave MUSKOGEE			Date: 1-19-16		
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
02	Material: DUCT INSULATION	F	A	DUCT BOOTS LIVING 1	1, 2	5 SF	389944
	Description: BROWN PAPER (BOOTS)		B	" " BED 2			389945
			C	" " BED 2			389946
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						
	Material:						
	Description:						

3 samples with the exception of patches less than 6 LF or 6 SF, then only 1 sample

Asbestos Material Sampling Summary Sheet
Miscellaneous materials

Revision date 5/7/2015

Job #: <u>BA 177223</u>		Building: <u>347 W. Southern Ave - MUSKEGON</u>			Date: <u>1-19-16</u>		
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
03	Material: <u>DRY WALL</u>	F	A	BATH 1ST FL	THROUGHOUT	7,000 SF	389947
	Description: <u>white</u>		B	BED 16 2ND FL			389948
04	Material: <u>SEAM TAPE</u>	F	A	BATH 1ST F	}	}	389949
	Description: <u>WHITE</u>		B	BED 16 2ND F			389950
5	Material: <u>MUD/Joint compound</u>	F	A	BATH 1ST FL	}	}	389951
	Description: <u>WHITE</u>		B	BED 16 2ND FL			389952
06	Material: <u>SUBFLOOR</u>	F	A	KITCHEN 1ST FL	5,6	900	389953
	Description: <u>UNDER CERAMIC WHITE</u>		B	KITCHEN 2ND FL	11,12	SF	389954
07	Material: <u>MORTAR - subfloor</u>	F	A	KITCHEN 1ST FL	11,12	900	389955
	Description: <u>GRAY</u>		B	KITCHEN 2ND FL	5,6	SF	389956
08	Material: <u>LINOLEUM</u>	F	A	STAIR UP -10	10	10	389957
	Description: <u>GREY BLACK PAPER BACK</u>		B	STAIR UP -10			SF
09	Material: <u>LINOLEUM</u>	F	A	LIVING -13 2ND FL	13,14,16	400	389959
	Description: <u>TAN STRIP UNDER CARPET</u>		B	LIVING -13 2ND FL			SF
10	Material: <u>STACK CEMENT</u>	F	A	BASEMENT @ CHIMNEY	BASEMENT	2 SF	389961
	Description: <u>GREY</u>		B	" -9			9
11	Material: <u>HOUSE WRAP</u>	F	A	EXT. S. SIDE ENTRY	}	}	389963
	Description: <u>BROWN UNDER WOOD</u>		B	}			}
12	Material: <u>SHINGLE SIDING</u>	NF	A	}	}	}	389965
	Description: <u>RED/BLACK UNDER VINYL</u>		B	}			}

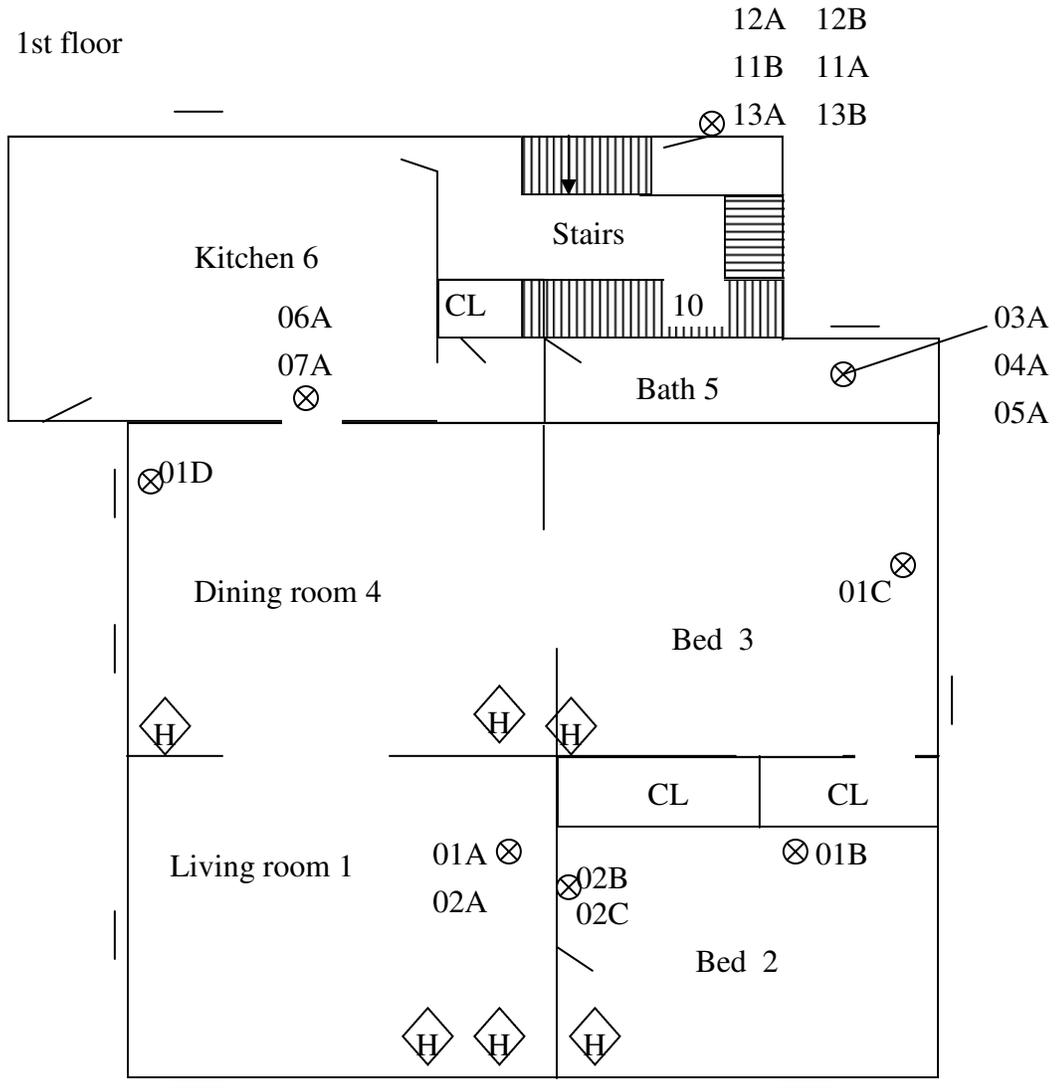
Asbestos Material Sampling Summary Sheet
Miscellaneous materials

Revision date 5/7/2015

Job #: 177223		Building: 347 W. SOUTHERN AVE MUSKOGEE			Date: 1-19-16		
Material no.	Material Description	Friable (F) / Non-Friable (NF)	Sample Letter	Sample Location	Material Located throughout bldg (Please List all Rooms)	Quantity	Picture #
13	Material: ROOF SHINGLES	NF	A	S. SIDE ENTRY	EXTERIOR		389967
	Description: BLACK		B	11 11 11			
	Material:						
	Description:						
	Material:						
	Description:						
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	Description:						
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	Material:						
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	Material:						
	Description:						

APPENDIX B

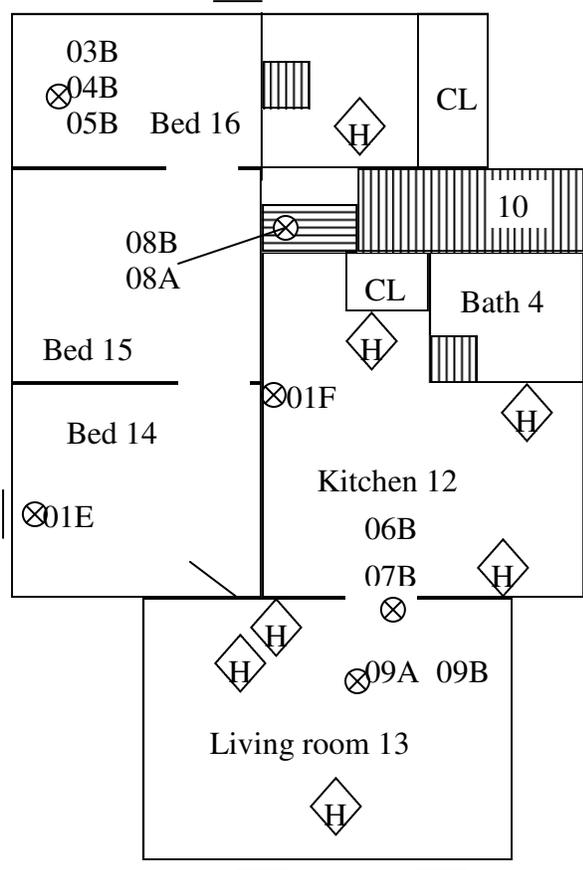
SITE MAP



Please Note: This is a rough floor plan only. All items, (doorways, Windows, etc.) may not be included in this illustration. Also, room and component sizes are not drawn to scale.



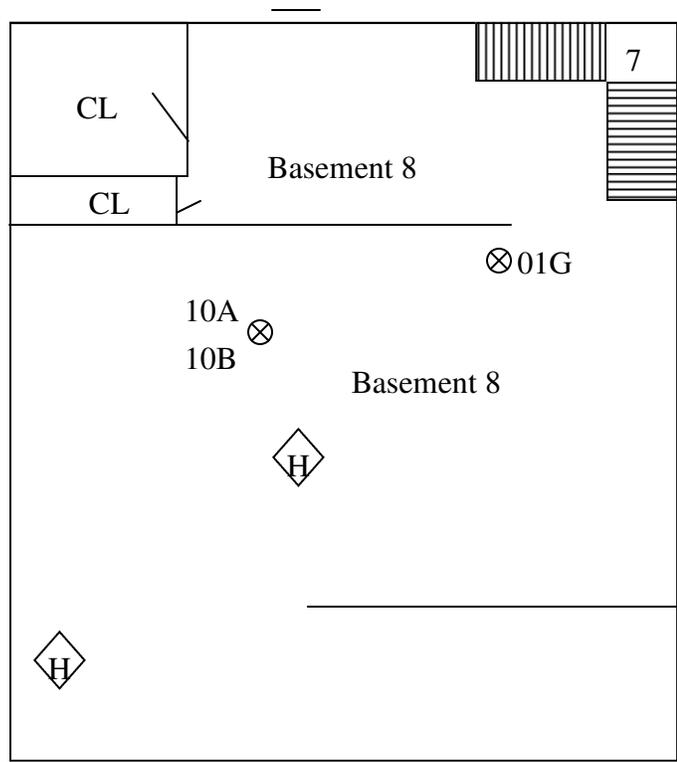
2nd floor



Please Note: This is a rough floor plan only. All items, (doorways, Windows, etc.) may not be included in this illustration. Also, room and component sizes are not drawn to scale.



Basement



Please Note: This is a rough floor plan only. All items, (doorways, Windows, etc.) may not be included in this illustration. Also, room and component sizes are not drawn to scale.



APPENDIX C

PHOTOGRAPHS



Side A



Side B



Side C



Side D



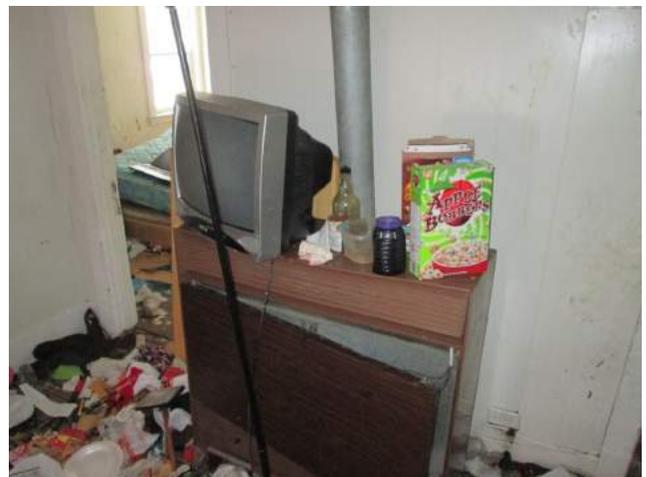
Hazard : Refrigerator



Hazard : Microwave



Hazard: Stove



Hazard—Electronics



Hazard: Electronics



Hazard: Electronics



Hazard : Electronics



Hazard: Paint Can



Hazard: Smoke Detector



Hazard: Smoke Detector



Hazard : Smoke Detector



Hazard: Smoke Detector



Hazard: Smoke Detector



Hazard: Smoke Detector



Hazard : Smoke Detector



Hazard: Thermostat

APPENDIX D

STATE OF MICHIGAN NOTIFICATION OF INTENT TO REMOVE/DEMOLISH

NOTIFICATION OF INTENT TO RENOVATE/DEMOLISH



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
(MDEQ) AIR QUALITY DIVISION
NESHAP, 40 CFR Part 61, Subpart M



MICHIGAN DEPARTMENT OF LICENSING AND
REGULATORY AFFAIRS (LARA), ASBESTOS PROGRAM,
P.A. 135 OF 1986, AS AMENDED, Section 220 (1-4) or (8)

DEQ/LARA USE ONLY

Postmark Date ___/___/___ Rec'd Date ___/___/___
 Emergency Date ___/___/___ Valid No. _____
 OK Send Def Ltr. Date of Def Ltr. ___/___/___
 FOLLOW UP ___/___/___ Spoke w/ _____
 Comments: _____

 Notification No. _____ Trans No. _____

Calculate LARA Asbestos Project Fee: (1% Project Fee)
 Total Project Cost: _____ x 0.01 = _____
 Type of Contractor: _____ License No.: _____
 Licensing Authority: _____

1. NOTIFICATION:
 Date of Notification: _____
 Date of Revision(s): _____
 Notification Type: Original Revised Canceled Annual
Mark appropriate boxes: (both DEQ and LARA may apply):
DEQ (NESHAP) [260 In. ft./160 sq. ft. or more is threshold]
 Planned Renovation – 10 working days notice
 Emergency Renovation
 Scheduled Demolition – 10 working days notice
 Intentional Burn – 10 working days notice
 Ordered Demolition
LARA (MIOSHA) [Will not accept annual notifications]
 Demo, Reno, Encap. (>10 In. ft./15 sq. ft.) 10 calendar days notice
 Emergency Renovation/Encapsulation

2. PROJECT SCHEDULE:

	START DATE	END DATE
* Renovation	_____	_____
+Asb. Removal	_____	_____
+Demolition:	_____	_____
Encapsulation:	_____	_____

Work Schedule: Please indicate the anticipated days of the week and work hours for the purpose of scheduling a compliance inspection.

	Days of the Week	Work Hours
Asb. Removal:	_____	_____
Demolition:	_____	_____
Encapsulation:	_____	_____

* Includes setup, build enclosure, asbestos removal, demobilizing, etc.
 +Include only those dates you are conducting asbestos removal/demo.
 Check here if this is a multi-phased project, attach a schedule showing the start/end date of each phase.

3. ABATEMENT CONTRACTOR: Internal Project #: _____
 Name: _____
 Mailing Address: _____
 City/State/Zip: _____
 E-mail: _____
 Contact: _____ Phone: _____

4. DEMOLITION CONTRACTOR: Internal Project #: _____
 Name: _____
 Mailing Address: _____
 City/State/Zip: _____
 E-mail: _____
 Contact: _____ Phone: _____

5. FACILITY OWNER: ("Facility" includes Bridges)
 Name: _____
 Mailing Address: _____
 City/State/Zip: _____
 E-mail: _____
 Contact: _____ Phone: _____

6. FACILITY DESCRIPTION:
 Facility Name: _____
 Location Address/Description: _____
 _____ If Apt. # of units: _____
 City/Twp. _____ State: _____ Zip Code: _____
 County: _____ Nearest Crossroad: _____
 Size: (sq. ft.) _____ No. of Floors: _____ Floor No.: _____
 Age: _____ Present Use: _____ Prior Use: _____
 Specific Location(s) in Facility: _____

7. DISPOSAL SITE:
 Name: _____
 Location Address: _____
 City/State/Zip: _____

8. WASTE TRANSPORTER 1:	WASTE TRANSPORTER 2:
Name: _____	_____
Address: _____	_____
City/State/Zip: _____	_____
Phone: _____	_____

9. ORDERED DEMOLITIONS: (See NESHAP regulations for definition of "Ordered Demolition.") A copy of the official Order must accompany this notification.
 Gov't Agency Ordering Demo: _____
 Name/Title of Person Signing Order: _____

 Date of Order: _____ Date Ordered to Begin: _____

10. IS ASBESTOS PRESENT? Yes No To be removed prior to demolition

Estimate the amount of asbestos: Include RACM (Regulated Asbestos Containing Material) to be removed, encapsulated, etc. Also include the amount and type (floor tile, roofing, etc.) of non-friable Category I and/or Category II ACM that will not be removed prior to demolition. (NOTE: In a demolition, cementitious ACM cannot remain in a structure, as it is likely to become regulated in the demolition/handling process. It must be removed prior to demolition.)

RACM to be Removed	RACM to be Encapsulated	Non-friable ACM <u>not</u> removed prior to demo.		Units of Measure	
		Category I	Category II	Ln. Ft.	Ln. M.
_____	_____	_____	_____	<input type="checkbox"/> Sq. Ft.	<input type="checkbox"/> Sq. M.
_____	_____	_____	_____	<input type="checkbox"/> Cu. Ft.*	<input type="checkbox"/> Cu. M.*

*Volume (cubic ft./meters) should be used only if unable to measure by linear/square measure (example: asbestos has fallen off of surface).

(continued on reverse side)

NOTIFICATION OF INTENT TO RENOVATE/DEMOLISH (continued)

11. PROJECT DESCRIPTION: Complete A) for Renovation (asbestos removal/encapsulation) and/or B) for Demolition:

A) RENOVATION: Mark all surfaces/types of RACM to be removed:

- Piping Fittings Boiler(s) Tanks(s)
 Beam(s) Duct(s) Tunnel(s) Ceiling Tile(s)
 Mag Block Other (describe) _____

Encapsulation (for LARA): Mark surfaces/types to be encapsulated:

- Piping Fittings Boiler(s) Tank(s)
 Beam(s) Duct(s) Tunnel(s) Ceiling Tile(s)
 Other (describe) _____

Method of removal: Describe how the asbestos will be removed from the surface (example: glove bag, scrape with hand tools, cut in sections and carefully lower, etc.): _____

B) DEMOLITION: Describe the method of demolition of facility, bridge, etc., and indicate if complete or partial. If partial, describe which part of facility bridge, etc., will be demolished: _____

12. ENGINEERING CONTROLS: Describe work practices and engineering controls used to prevent visible emissions before, during, and after removal, and until proper disposal: _____

13. UNEXPECTED ASBESTOS: Describe the steps you intend to follow in the event that unexpected RACM is found or previously non-friable asbestos becomes friable (crumbled, pulverized, reduced to powder, etc.) and therefore regulated: _____

14. PROCEDURE(S) USED TO DETECT THE PRESENCE OF ASBESTOS: A) Indicate how you determined whether or not asbestos is in the facility. If analytical sampling was used, describe method of analysis. (The determination of the presence or absence of asbestos must be made prior to submitting a renovation/demolition notification.): _____

B) Name, address, and phone number of company performing asbestos survey: _____

C) Name, accreditation number of inspector, and date of inspection: _____

15. EMERGENCY RENOVATIONS: Date/time of emergency: _____ Describe the sudden, unexpected event: _____

Explain how the event caused unsafe conditions, and/or would cause equipment damage and/or an unreasonable financial burden: _____

16. I certify that an individual trained in the provisions of 40 CFR Part 61, Subpart M, will be on-site during the renovation and during demolition involving RACM above the threshold and/or during an ordered demolition. Evidence that this person has completed the required training will be available for inspection at the renovation or demolition site.

Signature of Owner or Abatement Contractor Date

Signature of Owner or Demolition Contractor Date

17. Signature Requirements for Projects with Negative Pressure Enclosures: (required by LARA)
 Per Section 221(1)(2) of P.A. 135 of 1986, as amended, clearance air monitoring is required for any asbestos abatement project involving 10 linear feet/15 square feet or more of friable material which is performed within a negative pressure enclosure. *I (the building owner or lessee) have been advised by the contractor of my responsibility under Act 135 to have clearance air monitoring performed on this project.*

Signature of Building Owner or Lessee Date

Signature of Asbestos Abatement Contractor Representative Date

NOTE: It is not mandatory that a signed copy be sent to LARA unless requested. For affected projects, this section of the notification form must be completed, signed, and made part of your records before the project begins.

18. I certify that the above information is correct:

Printed Name of Owner/Operator Date

Signature of Owner/Operator Date

MAILING ADDRESSES/PHONE NUMBERS: (See Item 1 to determine which agency requirements/regulations are applicable to your project.)

For **Public Act 135 of 1986, as amended, Section 220 (1-4) or (8)**, mail to address below. For more info visit: <http://www.michigan.gov/asbestos>

MIOSHA Asbestos Program
 LARA, CSHD
 P.O. Box 30671
 Lansing, MI 48909-8171

517.636.4551 (office), 517.322.1713 (fax)

For **NESHAP Demolitions/Renovations, 40 CFR, Part 61, Subpart M**, mail notifications to the appropriate address below (by county of subject facility): For more info visit <http://www.michigan.gov/deq> click on Air, then Asbestos NESHAP Program.

All Counties (except Wayne County)

NESHAP Asbestos Program
 DEQ, AQD
 P.O. Box 30260
 Lansing, MI 48909-7760

517.241.7463 (Office)
 517.373.7064 (Revision Line)

Wayne County Only

NESHAP Asbestos Program
 Detroit Field Office, DEQ, AQD
 Cadillac Place, Suite 2-300
 3058 West Grand Boulevard
 Detroit, MI 48202

313.456.4686 (Office)
 313.456.2558 (Revision Line)